BIO-Boost

Report on innovation ecosystems

Project: Boosting innovation agencies for bioeconomy value chains

Acronym: BIO-Boost

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Contents

List of tables 2
1. Context 3
2. Introduction 4
3. Key networks and stakeholders 5
3.1. List of selected innovation ecosystem stakeholders 5
3.2. Regional ecosystems in BIOBoost 8
3.3. Networks and projects supporting BIOBoost objectives 9
4. The current state of innovation ecosystems 12
4.1. Denmark - Food & Bio Cluster Denmark (FBCD) 13
4.2. Finland - CLIC Innovation OY (CLIC) 15
4.3. France - Bioeconomy for Change (B4C) 17
4.4. Lithuania - Lithuanian Innovation Centre (LIC) 18
4.5. Poland - National Centre for Research and Development (NCBR) 21
4.6. Poland - Unimos / AgroBioCluster (UNI) 24
4.7. Slovenia - ICT Murska Sobota (ITC) 26
4.8. Spain - OnTech Innovation (ONT) 28
5. SWOT analysis of the bioeconomy innovation ecosystem project partners 31
5.1. Finland - CLIC Innovation OY (CLIC) 32
5.2. France - Bioeconomy for Change (B4C) 33
5.3. Lithuania - Lithuanian Innovation Centre (LIC) 34
5.4. Poland - National Centre for Research and Development (NCBR) 35
5.5. Poland - Unimos / AgroBioCluster (UNI) 37
5.6. Slovenia - ICT Murska Sobota (ITC) 38
5.7. Spain - OnTech Innovation (ONT) 39
6. Summary 40

List of tables

Table 1: List of selected innovation ecosystem stakeholders 5
Table 2: Regional ecosystems in BIO-Boost 8
Table 3: Networks and projects supporting BIO-Boost objectives 9

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1. Context

This document is deliverable 1.1. *Report on innovation ecosystems* from Work Package 1 – *Peer-to-peer learning*, Task 1.1 *Report on current state of innovation support and SWOT analysis*.

This is a public deliverable developed by The National Centre for Research and Development with the contribution of all partners.

It was developed under the scope of BioBoost Project ID – 101096150, co-funded by the European Union through the Horizon Europe Programme.

The report on innovation ecosystems summarises the functioning innovation support ecosystem in the 7 UE countries (Denmark, Finland, France, Lithuania, Poland, Slovenia, and Spain) represented by the 8 project partners Food & Bio Cluster Denmark (FBCD - DK), CLIC Innovation OY (CLIC - FI), Bioeconomy for Change (B4C - FR), Lithuanian Innovation Centre (LIC - LT), National Centre for Research and Development (NCBR - PL), Unimos / AgroBioCluster (UNI - PL), ICT Murska Sobota (ITC - SI), onTech Innovation (ONT - ES) that are innovation agencies of the bioeconomy sector: a) clusters and innovation networks (FCBD, B4C, CLIC, UNI), specialized in the bioeconomy / bio-based industries and ecosystem innovation management, b) digital innovation hubs (DIH) from Slovenia and Spain (ITC and ONG) experienced in ICT / deep-tech and Industry 4.0 technologies (IoT, AI, blockchain, ERP, cloud, AR/VR, big data, robotics, etc.) and a national agency (NBCR) focused on financing RTD.

The report was created in the early-stage duration of the BioBoost project to present the general overview of the bioeconomy environment based on inputs from each project partner. The report includes 3 sections that cover the innovation ecosystem:

- key networks and stakeholders;
- the current state of the innovation ecosystem: information on what typical challenges is faced by regional SMEs, typical exercises and procedures used, examples of good practice and successful initiatives, as well as gather to share current support and access-to-finance programmes and activities available within the regions;
- SWOT analysis of the bioeconomy innovation ecosystem project partners.

The collected data and knowledge exchanged between the partners will support the transfer of good practices and experiences of the participating innovation agencies in order to achieve the objectives of the BioBoost projects and WP1 Peer-to-peer learning Task 1.1 – *Report on current state of innovation support and SWOT analysis*.

The report will support the actions in WP1 Task 1.2 - *Joint workshops / study visits*, Task 1.3 – *Design Options Paper - joint strategy and new services design and implementation* and achievement of the D1.2 *Design option paper*, and WP2 Challenges by delivering the relevant information related to the aims and Tasks of WP2.

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2. Introduction

The EU leads the world in a commitment to circular bioeconomy, and innovation agencies as well as many innovative companies are not able to unlock all their capabilities. Therefore, the BIOBoost projects aim to increase the latent potential of the participating innovation agencies by building and expanding networks, expanding cooperation, and enlarging the participation of more diverse innovation stakeholders and territories to existing successful initiatives in bioeconomy, including agrifood, forestry, bio-based chemicals, materials and products, and bioenergy.

To achieve the following general objectives of the BioBoost project a series of interconnected and related Work Packages and tasks have been planned to ensure a sustainable, core of knowledge on support measures to promote the growth of bioeconomy in Europe.

Using experience from P2P projects WP1 *Peer-to-peer learning* was created to strengthen the links between partners, facilitate capacity building in partner organisations, and support the exchange of best practices in innovation support services. At the same time creating opportunities to learn from leading innovator regions, to adapt and cement this knowledge and experience, as well as let the project partners learn from each other, gain diverse perspectives, and acknowledge specific regional similarities and differences.

In order to transfer good practices and experiences within Task 1.1 – *Report on current state of innovation support and SWOT analysis* it is expected to achieve deliverable D1.1 *Report on innovation ecosystems*. The intention is to get a general overview of the innovation support ecosystems presented by each project partner and cover key networks and partners, current support programmes and activities offered by the partner and available from ecosystem partners. The report includes 3 sections: Key networks and stakeholders; The current state of the innovation ecosystem where projects partners answer the questions on typical challenges are faced by regional SMEs, typical exercises and procedures used, examples of good practice and successful initiatives, support and access-to-finance programmes available within the region; SWOT analysis of the bioeconomy innovation ecosystem project partners. The following sections will provide an overview of the innovation ecosystems.

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3. Key networks and stakeholders

Each participant summarised their own innovation support ecosystems, covering key networks and partners, and environment, current support programmes and activities offered by the partner, and available from ecosystem partners.

The key networks, partners, and environment data included in the report give the initial overview of the innovation ecosystem of the bioeconomy sector. To avoid duplication of work and overlapping of the results Deliverable D2.1 *Stakeholder map*, as a separate final product that is expected to be achieved in the WP2 *Challenges*, will present an advanced and developed map of the stakeholders, which is closely connected to the report on the innovation ecosystem.

3.1. List of selected innovation ecosystem stakeholders

Table 1: List of selected innovation ecosystem stakeholders

Country	Organisation	Attributes
	Erhvervshus	Six nationally funded organisations across Denmark, helping SMEs and start-ups with business development, internationalisation, generation change and business for immigrants.
	Denmark Technological Institute	A leading research and technology organisation specialised in production, materials, environmental technology, business, energy, agro technology, meat research and more.
	Aarhus Uni., Faculty of Agroecology	Listed #8 in the world for agricultural research, AU is a key partner within the bioeconomy.
	Damvad Data	Private consultancy working with social innovation / business philanthropy, energy & climate, education & employment
	CLEAN Cluster	Danish environmental cluster working with water, climate adaptation, waste resources, air, and soil.
	GreenLab	GreenLab is a green and circular energy park, a technology enabler and a national research facility, highly specialised in Power2X.
	Waste and Recycling Cluster Klaster Odpadowy)	Cluster gathering +100 organisations engaged in the process of waste collection, recycling, recovery, transportation.
	Warsaw School of Economics (SGH)	Leading public university specialised in economics, finance, management and business administration and public policy
	Warsaw University of Life Sciences (SGGW)	The Warsaw University of Life Sciences offers 40 fields of study from natural science and technology to social and economic studies, which has an impact on innovation and progress in, inter alia, agriculture, food economy and medicine.
	Wroclaw University of Environmental and Life Sciences	Wrocław University of Environmental and Life Sciences (UPWr) is one of the best specialist universities in Poland. It conducts training and research in the field of agricultural and natural sciences as well as the engineering and technical ones.

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	Wroclaw University of Science and Technology (PWR)	Wrocław University of Science and Technology units responsible for conducting scientific research are the Departments, whose number currently amounts to 74. The scientists of PWR carry out their research in twelve disciplines within fields of among others engineering and technology or strict and natural sciences.
	Ministry of Economic Development and Technology	The Ministry of Economic Development and Technology is an office of government administration. The areas of the Ministry activity are: economy, construction, spatial planning and development and housing, economic cooperation with foreign countries, innovation, business, cooperation with economic self-government organizations.
	Minister of Climate and Environment	The Minister of Climate conducts a policy of sustainable development while preserving native natural resources and the Polish landscape. The Minister is also responsible for rational forest management and effective use of natural resources.
	Industrial dev. Agency (ARP)	Public joint stock company with assets in 76 companies, manages Special Economic Zones and loans for large and SMEs
	Polish Agency for Enterprise Development (PARP)	PARP is involved in the implementation of national and international programmes. As a key authority responsible for creating a business-friendly environment in Poland, PARP contributes to the creation and effective implementation of the state policy related to enterprise, innovation and staff adaptability. The Agency puts a particular emphasis on the needs of the SME sector.
	Łukasiewicz Research Network	Largest research network in Europe in the fields of automation, chemicals, biomedicine, ICT, materials, and advanced manufacturing gathering 26 research institutes from Poland
	Innovation Agency Lithuania	Responsible for the Lithuanian innovation ecosystem and the promotion of innovation at all stages of business development – from developing ideas to delivering products to end users.
	AgriFood Lithuania DIH	Expert in organisation of international events focused on agriculture, food, bioeconomy (AgriFood Forum, international conference for agri-food sector experts, policy makers and business leaders, 'HACK AgriFood' (the first annual hackathon in Lithuania focused exclusively on agriculture and food technologies).
	Lithuanian Food Exporters Association	LitMEA unites food industry companies representing different industrial sectors. They do not compete directly in the local and foreign markets and see possibilities to cooperate and trust each other.
	Smart Food Cluster	Lithuanian Smart Food Cluster that supports SMEs in their in innovation and internationalisation journey, bringing together the capabilities of the companies, competencies and contacts.
	Lithuanian Energy Institute	Internationally recognised energy-related research, development and innovation (R&D&I) competence centre. Open Access Scientific Research Centre for Future Energy Technologies provides experimental services by employing scientific investigative and experimental development infrastructure.
	University of Maribor	The largest scientific research institution in Eastern Slovenia providing access to 17 faculties, 42 laboratories focused on digital technologies, and 200+ researchers.
	Institute Józef Stefan	The largest and most prominent Slovenian research centre with 721 top-class researchers working in 28 departments and laboratories, among which eight are focused on digitalisation.

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	Technology Park Ljubljana	The oldest and largest technology park in Slovenia, hosting 300+ member companies with +1.500 employees and more than 5,000 stakeholders through Smart City & living services and programs and Network of FabLabs & Open Labs (XR Lab).
	Conf. Granadina de Empresarios (CGE)	Confederation gathering 60 business, thematic, territorial and sectorial associations and federations from Granada province
	Universidad de Granada	Highest-ranked university in the South of Spain, specialised in health sciences and ICT.
	Smart City Cluster	Alliance of 190+ companies that work for the development of smart, sustainable and comfortable cities
	B4C cluster	B4C is the leading French Bioeconomy Cluster, with 500+ members across the bio- based value chains, from upstream agricultural inputs to finished products.
	Protéines France	Protéines France brings together the major French players in plant-based and alternative proteins sector; aiming to speed up the development of the plant-based and alternative protein sector in order to make France a world leader in this field.
	INRAE	INRAE is France's new National Research Institute for Agriculture, Food and Environment, created on January 1, 2020, It was formed by the merger of INRA, the National Institute for Agricultural Research, and IRSTEA, the National Research Institute of Science and Technology for the Environment and Agriculture.
	CLIC's shareholders, associated partners, & stakeholders	CLIC shareholders include 30 large / international companies and 16 universities / RTOs. The programmes and projects managed by CLIC have involved 200+ stakeholders, including ~50 SMEs from Finland.
	4Recycling ecosystem (led by CLIC)	Open innovation ecosystem facilitating cross-sectoral co-operation targeting the Plastics Challenge. 70+ organisations, including 21 universities / RTOs, ~50 private sector (large companies, SMEs and start-ups), public bodies, funding agencies and industrial associations.
	GreenE2 ecosystem (led by CLIC)	An open innovation ecosystem creating a cross-sectoral network for global business in Finland. 130+ participating organisations, including 13 universities / RTOs, 100+ private sector companies (large international companies, SMEs and start-ups), public bodies, funding agencies and industrial associations.

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3.2. Regional ecosystems in BIOBoost

Table 2: Regional ecosystems in BIO-Boost

CONNECT								
Innovation ecosystems interconnected								
	Innovation leaders		Strong innovators	Moderate innovators	Widening countries			
Country	**Denmark**	**Finland**	**France**	**Spain**	**Poland**	**Poland**	**Slovenia**	**Lithuania**
Partner	**FBCD**	**CLIC**	**B4C**	**ONT**	**NCBR**	**UNIMOS**	**ITC**	**LIC**
Type	Cluster	Cluster	Cluster	Cluster EDIH	National body	Cluster / innovation network	Cluster DIH	Innovation network
Cohesion Policy 2021-2027								
Level of development[10]	More developed	More developed	More developed	Transition region	Less developed	Less developed	Less developed	Less developed
Priorities & similarities between Regional Intelligent Specialisations Strategies (RIS3)								
Agrifood	Food & bio resources	Innovative food chains	Bio-refinery & sustainable agriculture	Healthy and safe food	Safe food	Safe food	Sustainable food production / High tech farming	Agricultural innovation and food technologies
ICT/ digital	Digital technologies and advanced manufacturing	ICT for new production processes, IOT & advanced manufacturing	New materials and new production processes	ICT and digital economy	ICT services	ICT services	Industry 4.0 - Smart factories	Information and communication technologies
Connections with Smart Specialisation Platform (S3 Platform)								
S3 Platform	Smart Specialisation Platform for Industrial Modernisation (S3P-Industry)				Smart Specialisation Platform for Agri-Food (S3P Agri-Food)			
Thematic Areas	SME integration to Industry 4.0, Artificial Intelligence and Human Machine Interface (AI & HMI), Photonics, Chemicals				High Tech Farming, Traceability & Big Data, Consumer Involvement in Agrifood Innovation, Smart sensors for agri-food			

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3.3. Networks and projects supporting BIOBoost objectives

Table 3: Networks and projects supporting BIO-Boost objectives

Activities	Knowledge and results feeding into BIOBoost
MPowerBIO FBCD coordinator	EU H2020 BBI JU funded CSA: Information and networks supporting investment into innovative bioeconomy companies, as well as access to 90+ supporting clusters across Europe.
agroBRIDGES FBCD & UNI partners	H2020 RUR-05: Strong partnership supporting development of short supply chains between consumers and producers and access to a systemic, holistic, multi-actor approach-based toolbox.
ShapingBio FBCD partner	Horizon Europe Governance project: Information on how to shape the future bioeconomy across sectoral, governmental and geographical levels, and ensuring equitable distribution in Europe. Large network of policymakers, which can be used for BIOBoost.
SmartAgriHubs FBCD, NCBR partners	H2020 RIA: SmartAgriHubs includes 113 partners, including many from widening regions, dedicated to accelerating the digital transformation of the European agri-food sector by building a network of Digital Innovation Hubs (DIHs) to boost the uptake of digital solutions by the farming sector.
P2PFinbio FBCD, B4C Partners	
Digiclusters UNI, ONT, LIC partners	Cluster-facilitated project aimed at speeding up digital innovations in agri-food and packaging sectors via cross-industry hackathons towards Industry 4.0
AURORA ONT & UNI partners	Boosting digital and green transformation of food systems in the field of food safety, food authenticity and food quality driven by clusters and network organisations
UNLOCK UNI partner	Releasing the potential of feathers to foster circularity in agriculture demonstrating supply-chain for a feather-based bioeconomy
PIC Network UNI members	Pan-European InterCluster network gathering 12 agri-food clusters from 9 EU countries, including widening regions: Romania, Poland, Portugal
EE Food Network UNI co-founder	Created in 2016, Eastern European Food Clusters network is an alliance of 5 clusters from Latvia, Lithuania, Poland and Ukraine working in agri-food industries
Enterprise Europe Network FBCD partner, LIC partner and national coordinator	Enterprise Europe Network being key business support infrastructure in Europe supports EU SMEs in their internationalisation and innovation journey. The network includes 600+ organisations in 60+ regions, ensuring the wider dissemination of BIOBoost results and opportunities. ensuring the wider dissemination of BIOBoost results and opportunities. Partners include all widening countries in Europe, and both FBCD and LIC have extensive contacts across these regions.
Network of European Digital Innovation Hubs LIC national coordinator	Lithuanian EDIH as part of the pan-European network has specific focus to support digital transformation of Agrofood sector SMEs and builds on results of the SmartAgriHubs project which created innovative tools to foster the digitisation of European Agrofood sector by fostering an innovation ecosystem dedicated to excellence, sustainability, and success.

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STAGE (Sustainable Transition to Agile and Green Enterprise) LIC partner	EU Horizon Europe funded CSA offers different types of support services and financial vouchers for SMEs to finance implementation of tailor-made sustainable transition plans that helps to covert entity into the sustainable and agile enterprise.
CoBioTech (ERA-NET) NCBR partner	ERA-Net Cofund Action under H2020, which aims to strengthen the European Research Area (ERA) in the field of biotechnology through enhanced cooperation and coordination of different national and regional research programmes, promoting systems biology and synthetic biology as technology drivers to speed up research and innovation in industrial biotechnology
ERA-NET Bioenergy NCBR partner	Self-sustained network aimed to fund innovative, transnational research, development and innovation (R&D&I) projects in the field of bioenergy.
ICT-AGRI-FOOD NCBR partner	Network supporting transition towards more sustainable and resilient agri-food systems with digital technology.
ERA NET SUSFOOD NCBR partner	ERA-Net Cofund Action under H2020 aims to foster research and innovation in the field of sustainable food systems through enhanced cooperation and coordination between EU member and associated states by the following goals: • To develop sustainable food systems from production to consumption, to increase food production sustainably while reducing waste in food supply chain and limiting environmental impacts; • To improve the quality of life by improving food quality in a sustainable way and to ensure the resilience of the food supply chain; • To encourage sustainable consumer behaviours and food choices; • To improve competitiveness and economic growth in the European food industry with special attention to SMEs. The scope of SUSFOOD covers the entire food supply chain with the main focus on food chain sustainability beyond the farm gate.
ERA NET CORE Organic NCBR partner	ERA-Net Cofund Action under H2020 aims to develop the organic agriculture that is considered to be one of the important development pathways towards a more sustainable agriculture and food production. It consolidate the series of transnational research calls that support a focused and coordinated research and innovation effort covering the most important challenges along the organic value chains, for example: increasing the organic production potentials, enhancing resource efficiency, and improving animal welfare.
M-ERA.NET NCBR partner	ERA-Net Cofund Action under H2020. Innovative transnational R&D projects in materials research and innovation related to materials and battery technologies to support the European Green Deal.
ERA-MIN NCBR partner	ERA-Net Cofund Action under H2020. Raw Materials for the Sustainable Development and the Circular Economy
EEA and Norway Funds NCBR - Program Operator	III edition of EEA and Norway grants. Programme “Applied research” is implemented under the EEA and Norway Grants. The aim of the programm is to enhance performance of Polish applied research in Poland through improved research cooperation between Poland and Norway, based on equal partnerships between Norwegian and Polish research institutions and enterprises. The Programme will prioritize funding for research and development in the following areas: welfare, health and care, digital and industry, energy, transport and climate, food and natural resources, social and economic development, unmanned vehicles, CCS - carbon capture and storage, cities for the future: services and solutions.
Horizon Europe Partnerships NCBR partner	Horizon Europe co-funded partnerships like: the Sustainable Blue Economy Partnership (SBEP); Driving Urban Transitions to a sustainable future (DUT); The Clean Energy Transition Partnership (CEPT), Water4All, ERA for Health, Innovative SMEs.

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Bilateral Cooperation NCBR partner	Bilateral Cooperation with partner institutions on among others bioeconomy thematics with Turkey, China, South Korea, Taiwan, Germany, RSA, Israel, Japan.
Global Foodture FBCD & ITC partners	Extensive database of SMEs supported by the network of clusters, providing solutions and products for advanced and sustainable food value chains
Startup3 ITC partner	Open and collaborative cross-border ecosystem of high impact deep-tech innovators, with the network innovative market players – SMEs.
Cities2030 ITC partner	Ecosystem of European stakeholders, creating a future proof and effective Urban Food Systems and Ecosystems, working on transformation and restructuring of the way food is being produced, transported and consumed.
BIOSWITCH CLIC coordinator, FBCD partner	EU H2020 BBI JU funded CSA aiming to bring Europe to the forefront of the bio-based economy by supporting brand owners from different sectors to switch to bio-based approaches.
Engage4BIO CLIC partner	EU Horizon Europe funded CSA co-creating via quadruple helix actor engagement a transferable bioeconomy development framework for better understanding, intensified engagement, (re)-training and skills development in regional bio-based systems.
FRACTION CLIC partner	EU H2020 BBI JU funded RIA developing integrated biorefinery approach to maximise the purity and quality of lignin and hemicellulose side streams in 2nd generation biorefineries for formulation of high added value products, while keeping high quality cellulose as main product.
SUSBINCO CLIC partner	Nationally funded bioeconomy project focused on sustainable bio-based binders and coatings in versatile applications such as fibre-based packaging, gasket materials, wood products, paints, adhesives, sealants, and abrasives.
TREASoURcE CLIC partner	EU Horizon Europe funded IA aiming to innovatively circulate by refurbishment, reuse and recycling currently burned, exported, landfilled or dumped plastics, batteries and biobased side and waste streams via territorial and regional demonstrations of systemic solutions and their replication to deploy circular economy.
4Recycling open innovation ecosystem CLIC coordinator	An open innovation ecosystem facilitating cross-sectoral co-operation and preparing collaborative RDI projects targeting at solving the Plastics Challenge. 70+ participating organisations, including 21 universities and RTOs, ~50 private sector companies (large international companies to SMEs and start-ups), public bodies, funding agencies and industrial associations.
GreenE2 open innovation ecosystem CLIC coordinator	An open innovation ecosystem creating a cross-sectoral network for global business in Finland. 130+ participating organisations, including 13 universities and RTOs, 100+ private sector companies (ranging from large international companies to SMEs and start-ups), public bodies, funding agencies and industrial associations.
AgriFoodX5.0 LIC coordinator	A new interdisciplinary project that aims to strengthen cluster cooperation, improve cluster management capacities and facilitate the exchange of best practices and knowledge to strengthen cluster management capacities and ensure the highest quality services for cluster members. The international initiative aims to integrate Industry 5.0 values into the agri-food sector.

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4. The current state of innovation ecosystems

The current state of the innovation ecosystems is the most important part of the report where each of the partners evaluated individually their bioeconomy innovation ecosystem including information on what typical challenges are faced by regional SMEs with respect to innovation support, typical exercises, and procedures used, examples of good practice and successful initiatives, examples of mistakes to avoid, as well as gather to share current support and access-to-finance programmes and activities available within the regions. The collected data and knowledge were exchanged between the partners and will be used as a baseline for further tasks and activities provided for in the project. Additionally, this part of the report helps to evaluate the general overview of the current state of innovation ecosystems of the BioBoost partners and will help to decide which are the most promising and which practices or initiatives might be adaptable in other regions. This activity will also allow the partners to obtain the perspective of whether, taking into account the specificity of the regions, chosen approaches can be replicable.

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4.1. Denmark - Food & Bio Cluster Denmark (FBCD)

1. What **typical challenges are faced by SMEs** in your country/region?	2. What are **typical exercises and procedures used on innovation ecosystems** in your country/institution?	3. Please provide the **examples of good practice and successful initiatives** in your region/ country/ institution?	4. Please provide a few **examples of mistakes to avoid/ obstacles/ barriers** and briefly describe?	5. Please provide information on support and access-to-finance **programmes available** within the region/ in your country/ institution on the national and the international level:
Knowledge about funding opportunities.	National and international funding programs with incentives to support innovations among SMEs.	Collaboration projects (FFBI, GCO, Innovations Kraft etc.) where SME's collaborate with one more SME's + a knowledge institution and maybe a large company.	Heavy workload regarding reporting and registration related to co-funding	EEN services
Acces to knowledge institutions.	Matchmaking events, good practices visits, international fair visits, etc.	H2020 projects, e.g. agroBRIDGES regarding short food supply chains.	De minimis limits, specially within the fish and seafood industry	Crowd funding
Lack af business models.	Acces to incubator environments.	Beyond Beta, accelerator program designed to guide more mature startups. The program supports the Danish startup ecosystem from initial idea to investment and scale by providing founders with the right network, knowledge and 1:1 sparring.	Project activites and writing proposals are often considered complicated by many SMEs	International, national and regional funds
Lack of skills. Often the SME's are specialised and do not have the competences to do e.g. bookkeeping, management etc.	Acces to facilitated specialised thematic network, e.g plantbased, food safety, sustainbale packaging, seafood, climate impact etc.	Local incubator environments.		Danish Cluster support programs

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Barriers towards internationalisation.	Round tables, thematic conferences, workshops, webinars etc.	Thematic networks (e.g. sustainable packaging, food saftetyr, climate impact, digitalisation etc.)		Venture capital
Lack af human ressourses, often caused by lack of or low earnings.		Matchmaking, e.g. through EEN.		

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4.2. Finland - CLIC Innovation OY (CLIC)

1. What **typical challenges are faced by SMEs** in your country/region?	2. What are **typical exercises and procedures used on innovation ecosystems** in your country/institution?	3. Please provide the **examples of good practice and successful initiatives** in your region/ country/ institution?	4. Please provide a few e**xamples of mistakes to avoid/ obstacles/ barriers** and briefly describe?	5. Please provide information on support and access-to-finance **programmes available** within the region/ in your country/ institution on the national and the international level:
Knowledge of funding instruments	Annual ProjectBooster, reseachers pitch for the companies	Start up sauna facilities at Aalto University campus	Lack of knowledge in funding reporting	Business Finland Funding
Timing in market penetration	Workshops on current themes, such as market shaping activities	SLUSH event	IPR - how to clarify the IPR issues	The Centres for Economic Development, Transport and the Environment
Lack of sales people	RDI roadmap creation and updates	SME´s from same field have shared learnings and failures	Applying funding	Finnvera
Value chain actors missing from the value chain especially in circular economy solutions	Annual event or forum to gather people together	Aaltoes is a active student-run entrepreneurship society	How to carry	Growth financing from private equity investors
Management of the sustainable growth (people, economy and technology)	Creating rules for the ecosystem (open innovation ecosystem)	Startuplifers connects talented Nordic tech, design and business students and graduates with the best startups in the San Francisco Bay Area	Negative economy in rapid growth is hindering recruiting	(Entrepreneur loan)
Patenting	Market shaping activities	Junction organizes a wide variety of tech events around the year around the world, as well as online		Crowd funding

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		Kiuas is the leading startup accelerator and co-founder matchmaker in Finland		Venture capital
		Helsinki Incubators - Helsinki University offering support for entrepreneurial path		

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4.3. France - Bioeconomy for Change (B4C)

1. What **typical challenges are faced by SMEs** in your country/region?	2. What are **typical exercises and procedures used on innovation ecosystems** in your country/institution?	3. Please provide the **examples of good practice and successful initiatives** in your region/ country/ institution?	4. Please provide a few **examples of mistakes to avoid/ obstacles/ barriers** and briefly describe?	5. Please provide information on support and access-to-finance **programmes available** within the region/ in your country/ institution on the national and the international level:
Access to funding opportunities	National framework conditions, including favorable support measures and incentives	Monitoring of funding opportunities, webinars, targeted fundings for SMEs	Heavy workload or processes	AgriO label, Innotech, I-demo, 1ère usine, I-lab, PIA4
Lack of knowledge on innovation ecosystem	Matchmaking events, Collaborative webinar with other organisations			International delegations
manque exemples européens de succès pour accélérer les projets	Expertise, perceptions, and resistance to change amongst stakeholders, SMEs, and start-ups Local industrial value-chains maturity affecting the expansion of bioeconomy solutions			
Availability of industrial sites				

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4.4. Lithuania - Lithuanian Innovation Centre (LIC)

1. What **typical challenges are faced by SMEs** in your country/region?	2. What are **typical exercises and procedures used on innovation ecosystems** in your country/institution?	3. Please provide the **examples of good practice and successful initiatives** in your region/ country/ institution?	4. Please provide a few e**xamples of mistakes to avoid/ obstacles/ barriers** and briefly describe?	5. Please provide information on support and access-to-finance **programmes available** within the region/ in your country/ institution on the national and the international level:
Access to finance: SMEs in Lithuania might find it difficult to access finance from traditional sources like banks due to lack of collateral or credit history. This can limit their ability to invest in new technologies, equipment, or R&D activities needed to transition towards a more sustainable and digitalized business model.	The Lithuanian government has implemented several initiatives to improve access to finance for SMEs.	There are various public or private finance options such as grants, loans, and equity investments. The Lithuanian Business Angel Network (LitBAN) and venture capital firms like Practica Capital and Startup Wise Guys are some examples of organizations that provide funding to early-stage SMEs, also public funding is available for R&D projects developed by different SMEs in terms of size and maturity level.	When introducing business support instruments related to finance, it's important to consider the diversity of SMEs' funding needs and the range of financing options available. Business support organizations should provide clear and accessible information eligibility criteria, and the application process, as well as guidance on how to prepare a strong business case.	Crowd Funding Loans Aviete InoStartas, InoPažanga and InoBranda are part of the 2022-2030 Economic Transformation and Competitiveness Development Programme, these measures enable researchers to participate in R&D projects in companies, launch pilot production of newly developed products and prepare them for the market.

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Limited market size: Bioeconomy SMEs may face limited demand for their products or services within Lithuania. For example, a small bioplastics manufacturer may struggle to find enough customers domestically to sustain growth. This can make it challenging for SMEs to achieve economies of scale and compete with larger, more established companies	The Lithuanian Innovation Center provides SMEs with market intelligence services, such as market analysis and business matchmaking, to help them expand their customer base beyond Lithuania. The center also offers networking events and workshops to help SMEs build relationships with potential partners and customers.	Export development programs: provide SMEs with support to develop their export strategies and access new markets. For example, the Export Academy. Matchmaking events: bring together SMEs and potential customers or partners to facilitate new business relationships and access to new markets. For example, LIC organizes regular matchmaking events for SMEs in the bioeconomy sector.	A barrier to successful implementation may be a lack of awareness among SMEs about available market research and networking resources, or a lack of expertise to help SMEs understand and adapt to new markets.	the Export Academy EEN services Financial support to participate in business fairs and expos
Regulatory compliance: The bioeconomy industry is subject to a range of complex regulations related to environmental protection and sustainability. For example, bio-based products may need to meet specific requirements related to biodegradability or compostability. SMEs may struggle to comply with these regulations, which could limit their ability to grow and expand.	The Innovation Agency and other business support entities offer regulatory support services to SMEs, such as assistance with product certification, and environmental compliance.	Innovation agency offers guidance on environmental and social regulations that affect SMEs, they also administrate the measure that allows companies to co-finance the certification process.	Assuming that compliance with regulations is only a legal issue; failing to integrate sustainability considerations into business strategy and operations.	EXPO CERTIFICATE LT MEASURE - promotes the internationalisation of enterprises by financing investments for the certification of products intended for export. A maximum amount of EUR 100,000 per project and a minimum of EUR 5,000.

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Skills shortage: The shortage of skilled workers can make it difficult for SMEs to recruit and retain employees with the necessary skills for digitalization and green transition. For example, a small manufacturing firm may need to hire an ICT specialsits, engineer or data analyst to implement an digital solutions or manage an energy-efficient solutions, but there may be a limited pool of qualified candidates in Lithuania.	Innovation ecosystems providse SMEs with access to skills development programs, such as training courses, mentorship programs, and internship opportunities.	The Vocational Education and Training system provides training and skills development programs for workers in key sectors, including ICT, biotechnology, and green technologies. There are programs where clusters can hire Vocational schools or Universities to reskill and upskill the employees of cluster members.	One mistake to avoid is providing one-time or ad-hoc training opportunities without a comprehensive approach to ongoing skills development.	
Digitalization: The bioeconomy industry is becoming increasingly digitalized, with the use of technologies such as precision agriculture and data analytics. SMEs that lack the necessary skills or resources to implement these technologies may struggle to remain competitive in the industry.	The Lithuanian Innovation Center provides SMEs with support and guidance on digitalization, including assistance with developing and implementing digital strategies (also co-developed national digitalisation strategy 2030), training on digital tools and technologies, and access to resources such as cybersecurity experts.	The ministry of economy and innovation will launch a national instrument to support digital transition of various sectors. The initiative will promote the development of digital competences in high productivity computing, artificial intelligence, cyber security through investments into digital innovation hubs.	A lack of awareness among SMEs about available digital technologies or a lack of access to resources and expertise to develop and implement a digital strategy.	Increase energy efficiency in industrial enterprises, up to 145 000 Eur to SMEs.

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4.5. Poland - National Centre for Research and Development (NCBR)

1. What **typical challenges are faced by SMEs** in your country/region?	2. What are **typical exercises and procedures used on innovation ecosystems** in your country/institution?	3. Please provide the **examples of good practice and successful initiatives** in your region/ country/ institution?	4. Please provide a few e**xamples of mistakes to avoid/ obstacles/ barriers** and briefly describe?	5. Please provide information on support and access-to-finance **programmes available** within the region/ in your country/ institution on the national and the international level:
Lack of Funding (Knowledge about funding opportunities / instruments): Access to finance is a significant challenge for SMEs in Poland. The Bioeconomy sector requires substantial investment in research and development, pilot-scale testing, and commercialization. SMEs often face difficulties in obtaining the necessary capital to support their projects.	Innovation Challenges: The national or EU Calls aimed at identifying and rewarding innovative ideas and solutions that can solve specific problems.	Matchmaking events on-line and on-site, regional and Pan-European	The lack of national/ regional/ institutional policies	CoBioTech, CO-FUND ICRAD, SUSFOOD, BIOENERGY, ACENET, AGRI FOOD (ERA-NET)
Limited Market Opportunities: The Bioeconomy sector is still developing in Poland, and SMEs may face challenges in finding customers or markets for their innovative products and services. Low level of the international cooperation. The	Regional engagement: Boosting local industrial value-chains.	BioBoost project - Boosting innovation agencies for bioeconomy value chains	The low level of the international cooperation	National Funds

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need to build a recognizable and trustworthy brand and national bioeconomy innovation ecosystem.				
Limited access to resources, knowledge and experienced specialists: SMEs have limited access to resources such as specialized equipment, laboratories, and skilled personnel (often caused by low earnings), business models, management knowledge/experience.	Incubation and Acceleration Programs: Support programs to provide startups with the resources and guidance (mentorship, networking opportunities, funding, and access to specialized equipment or facilities) they need to develop their ideas and bring their products or services to market (f.ex. Farm to Fork).	Part Finder - NCBR matchmaking on-line platform	Low understanding the legal and regulatory framework	Venture Capitals
Regulatory and administrative barriers: the need for coherent regulations of the multidisciplinary bioeconomy sector, which will enable synergies between sectors. SMEs may struggle to comply with regulations, overregulation of access to funding opportunities / instruments, patenting.	The offices supporting Technology Transfer by facilitating the transfer of technology and knowledge from academic institutions / innovations agencies to industry. Actions aimed at filling the gap between research and commercialization, leading to new business opportunities and economic growth.	INNOGLOBO is a programme designed to enable entities from Poland to establish research and development cooperation with foreign partners from those countries of the world with which Poland maintains diplomatic relations, and the NCBR does not regularly organize bilateral competitions. As part of the competition, applicants have the opportunity to obtain funding for the implementation of international projects with different budgets, relating to various R&D thematic areas among other bioeconomy thematic areas.	The low awareness of policymakers and decisionmakers	Bridge Alfa

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		Requirements for the competition applications include participation in the project of at least one foreign partner and entering the thematic scope of the project into the current List of National Smart Specializations.		
Insufficient Networking Opportunities: SMEs often struggle to establish valuable connections with other companies, research institutions, and stakeholders. This can limit their ability to form partnerships, cooperate internationally, access knowledge, and take advantage of new opportunities.	National and international funding programs	Biostrateg - ("Natural environment, agriculture, and forestry") is a strategic research and development programme prepared by the NCBR. The programme covers five strategic problem areas, following the priority directions of research currently conducted in the European Union and the world: food security and food security; Rational management of natural resources with particular emphasis on water management; Counteracting and adapting to climate change, with particular emphasis on agriculture; Protection of biodiversity and sustainable development of agricultural production space; Forestry and wood industry.		Bilateral cooperation
Public awareness of the goals and importance of bioeconomy	Matchmaking events, workshops, webinars.			EEA and Norway Funds (NMF, MF EOG)
				FENG programme (2021-2027)

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4.6. Poland - Unimos / AgroBioCluster (UNI)

1. What **typical challenges are faced by SMEs** in your country/region?	2. What are **typical exercises and procedures used on innovation ecosystems** in your country/institution?	3. Please provide the **examples of good practice and successful initiatives** in your region/ country/ institution?	4. Please provide a few e**xamples of mistakes to avoid/ obstacles/ barriers** and briefly describe?	5. Please provide information on support and access-to-finance **programmes available** within the region/ in your country/ institution on the national and the international level:
Technical/technological barriers linked to financial limitations, lack of tech - nical resources readily available that could easily upgrade and adopt digital technologies	Bottom-up and top-down synergy building with non-competitive clusters and industries at regional level	DIGICLUSTERS (COSME financed European Strategic Partnership for Smart Investments)	Sustainability of projects - not ensuring the continutiy of project and support for SMEs and other stakeholders after the end of the project	Regional cluster support programme implemented by Mazovia Regional Government for clusters
Organisational barriers – connected to people's unwillingness to change and the need to change the innovation management of key business operations, products, processes, organisational structures that require new competen- cies, resources, and collaborations;	Engagement of stakeholders in the process of shaping and implmenting Regional Innovation Strategies (RIS3)	AUMENTA (COSME financed European Strategic Partnership for Going International)	Heavy bureaucracy in the implementation of projects financed from European Union at national and regional level	Operational Programmes for Poland and Mazovia Region financed from the European Union 2021-2027

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Human resource-oriented barriers – linked to lack of qualified employees and lack or insufficient competences, especially digital ones	Boosting inter-project synergies implemented by UNIMOS to benefit local stakeholders	DIGITAL and CIRCULAR HUB, INTERNEXUS, ALLIANCES, AMPLIFICA, ORKIESTRA 21 and ORKIESTRA 22 (Regional projects financed from Mazovia Regional Government)	Political issues and elections that affects longer-term effectiveness	FENG (2021-2027) programme
Insufficient level of internationalization and international expansion	Building culture of cooperation, trust and responsibility for local development	AURORA (COSME Partnership 2020 with ClusterXchange component)		
Insuffient knowledge, experience and skills on navigating through different business and innovation support services		INNORBIT project (H2020)		
Low level of awareness and experience in applying for European funding in international consortia		agroBRIDGES project (H2020) on short food supply chains		
Matchmaking challenges related to finding the right partner for innovation and/or business and/or internationalization		Mazovia Development Forum		
Insuffient level of knowledge on agile generating of new (circular and digital) resilient business models				

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4.7. Slovenia - ICT Murska Sobota (ITC)

1. What **typical challenges are faced by SMEs** in your country/region?	2. What are **typical exercises and procedures used on innovation ecosystems** in your country/institution?	3. Please provide the **examples of good practice and successful initiatives** in your region/ country/ institution?	4. Please provide a few e**xamples of mistakes to avoid/ obstacles/ barriers** and briefly describe?	5. Please provide information on support and access-to-finance **programmes available** within the region/ in your country/ institution on the national and the international level:
Access to funds: Many SMEs struggle to access adequate financing and funding due to dispersion of infomation and lack of time	National funding measures and incentives to support innovations among SMEs.	Different matchmaking events are organized by The public agency of the Republic of Slovenia for the promotion of entrepreneurship, internationalization, foreign investments and technology (SPIRIT) for the uptake of collaboration or finding customers.	Focusing only on one aspect and not providing full support to SMEs. For example SMEs need a whole client journey, from market analysis to funding opportunities, matchmaking and finally help with entrace to new markets.	Co-financing of long-term large research-innovation collaborative programs on the TRL 3-6 scale. (Slovenian Research Agency, Ministry for Ministry of the Economy, Tourism and Sport, Ministry for Higher Education, Science and Innovations)
Advanced skills: lack of digital skills, lack of state of the art know-how	Matchmaking events, good practices visits, international fair visits, etc.	ITC is part of European DIH in Slovenia (DIGI-SI) through its own DIH AGRIFOOD. DIGI-SI will support SMEs in the digitalization process and uptake of innovation, through different incentives (funding clinics, meetup days, demistyfing events on different novel technologies,...)	Introduction on the benefits (economical and social) of the implementation of novel technologies. Often this is left neglected by different business support institutions, on what are real benefits (providing real case examples of introduction of novel technologies)	Small value incentives through vouchers (Slovenian Enterprise fund, Sovenian ECO Found, Ministry for Digital Transformation)

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Human resources: lack of highly skilled staff due to low wages - brain drain	Introduction of the concept Digital Innovation Hub (DIH), where actors provide support to SMEs through Multi-actor-approach. ITC have established the DIH AGRIFOOD for the uptake of digitalization processes in the agri-food value chain.	National funding is available through the Slovenian Research Agency for the co-financing of long-term large research-innovation collaborative programs on the TRL 3-6 scale. This allows cooperation among Reserch centers and SMEs to develop new products and services.	Slovenia is not a big international player, so it is hard to reach private investors and venture capitals. Alot needs to be done in this matter to open up the private funding market and grant access to international market.	EDIH DIGI-SI will co-finance different services for SMEs: testing high-tech equipment, digital skills develpoment etc.
Business models: traditional way of develop products, services, processes, and organizations - lack of design thinking approach		Slovenian Enterprise Fund together with Ministry of the Economy, Tourism and Sport introduced Small value incentives through vouchers which which allows SMEs significantly simplified access to co-financing of individual services through which companies can strengthen their competitiveness and competencies.		The public agency of the Republic of Slovenia for the promotion of entrepreneurship, internationalization, foreign investments and technology (SPIRIT) is having yearly incentives and funding opportunities to enter new markets (visits of international fairs, creation of internationalization strategy, economic delegations to foreign countries)

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4.8. Spain - OnTech Innovation (ONT)

1. What **typical challenges are faced by SMEs** in your country/region?	2. What are **typical exercises and procedures used on innovation ecosystems** in your country/institution?	3. Please provide the **examples of good practice and successful initiatives** in your region/ country/ institution?	4. Please provide a few e**xamples of mistakes to avoid/ obstacles/ barriers** and briefly describe?	5. Please provide information on support and access-to-finance **programmes available** within the region/ in your country/ institution on the national and the international level:
Access to funds: Many SMEs struggle to access adequate financing and funding due to the high cost of borrowing and lack of access to venture capital.	Establishing a culture of innovation to encourage collaboration between companies and institutions encouraging the sharing of ideas and resources.	TOMATIA (Advanced monitoring, algorithms based on AI to estimate performance and assess the quality of tomatoes.)	Not having access to skilled labour: SMEs need to have access to skilled labour in order to be successful. Recruiting and retaining talented employees, providing training and development opportunities.	Spanish Clusters Programme AEI Call "Programa de Agrupaciones Empresariales Innovadoras (AEI) " Financed by the Spanish Ministry of Industry
Lack of qualified personnel: difficulties to get the necessary qualified personnel to help theSMEs´ develop and grow.	Creation of innovation infrastructures that supports collaboration, data sharing and access to knowledge.	SCAPI (Design and construction of a sensor system to monitor in a non-invasive manner different parameters that allow to assess the evolution and quality of crops.)	Difficulties to access to financing: alternative financing options such as crowdfunding, venture capital, and government grants need to be explored.	Aid for the Connected Industry 4.0 initiative / ACTIVA Financing "Ayudas a la iniciativa Industria Conectada 4.0 / ACTIVA Financiación" Financed by the Spanish Ministry of Industry

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Administrative obstacles (long processes, paperwork…): SMEs in Spain have to face a lot of red tape when it comes to compliance with different regulations, taxes, and other administrative requirements.	Identification and development of talent (recruitment fair) developing their skills and abilities through mentorship and training	EVOCATO (Validation, design and development of a sensor to determine the degree of maturity of avocadoes using techniques that combine digitalization and artificial intelligence.)	Low understanding the legal and regulatory framework: SMEs need to understand the legal and regulatory framework in order to comply with the laws and regulations specially in new markets. usually is complicated and time consuming. Experts need to be consulted to ensure the right steps.	Finance_Industry. Personalized Advice Service "Financia_Industria. Servicio de Asesoramiento Personalizado" Financed by the Spanish Ministry of Industry
Competitivity (with foreign companies and with companies of the same sector) due to the lack of the newest technology	Development of partnerships to to create new products, services and processes in order to develop innovative projects	ENERGIA 4.0 (Decarbonization from production to consumption through the digital transformation of the electricity grid.)	Inadaptation to international markets: SMEs need to have an international strategy if they want to reach potential customers abroad.	Direct financing to entrepreneurs and SMEs through the National Innovation Company, SA (ENISA) "Financiación directa a emprendedores y PYME a través de la Empresa Nacional de Innovación, SA (ENISA)" ENISA depends on the Spanish Ministry of Industry
	Use of public and private funding to support innovation initiatives	VERTEDERO (Development of an intelligent waste management system)		Reindustrialization and Strengthening of Industrial Competitiveness through SGIPYME "Reindustrialización y Fortalecimiento de la Competitividad Industrial" SGIPYME depends on the Spanish Ministry of Industry

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	Development of policies to support and promote innovation, including tax incentives and other incentives	MOSAIC AGRO (Development of a prototype to manage any agricultural operation, obtaining information from sensors.)		
	Creation of mechanisms to support startups (incubators, accelerators and other innovative businesses)	ECOPEST (Innovation, research and development of new technological solutions to improve the use of biocides in urban pest control services, guaranteeing the protection of human health, animal health and the environment.)		
		IAGRI 4.0 (agronomic analysis based on artificial vision techniques and thermal distribution to determine and predict the quality of the crop and the possible appearance of biotic risks.)		

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5. SWOT analysis of the bioeconomy innovation ecosystem project partners

Swot analysis of the innovation ecosystems was an exercise where each project partner evaluated individual strengths, weaknesses, opportunities, and threats of their bioeconomy innovation ecosystem. This analysis will help the partners gain regional perspectives and raise awareness and understanding of the current state of the innovation ecosystems among partners. In addition, it will get familiar project partners and stakeholders with a general overview of the bioeconomy environment and sector-specific environment.

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5.1. Finland - CLIC Innovation OY (CLIC)

Strengths	Weaknesses	Opportunities	Threats
Easy to access to knowledge.	Low or insufficient level of digital skills and techniques to keep up with development and implementation of digital innovations.	Extended use of AI and automation in the food industry can reduce the disadvantages of high labor cost for both skilled and unskilled labor.	Lack of qualified (skilled = chefs, carpenters etc.) labor due to young people's focus of higher education
National support of single clusters within focused sectors, e.g. Food & Bio, Lifestyle & Design, Digitalization etc.	Slow process of payment to SMEs from national funds	Free access to education and supplementary training allows continuously refreshing of knowledge, skills and current practices. Workforce can easily be updated and ready for new opportunities and transitions.	Lack of labor due to low birthrate
Members of the Danish food cluster have access to local branches, which means a short distance to cluster services, Business Service Centers, incubator environments etc.	Development of new business based on food innovation.	Development of new technologies and products within the plant based food area.	Geopolitical changes, e.g. acces to energy, international political sanctions etc.
SMEs have easy access to funding of collaboration with universities, the Danish Research and Technology Organisations and knowledge institutions.			

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5.2. France - Bioeconomy for Change (B4C)

Strengths	Weaknesses	Opportunities	Threats
Ecosystem brand	Lack of visibility to achievements	Internationalisation	Requirements from funding instrument
Communication of the current and coming activities	Industry leader examples	New project partners	Veturi-funded company ecosystems wins the interest of SME´s in open innovation ecosystem
Heterogeniuos team on ideas and decision making	Pandemic time online - people are gaining trust by meeting face to face	Interest of the participating organisations	Lack of market shaping activities
Culture of the working environment must give space for learning and sharing knowledge between colleagues		Playbook training and ecosystem mindset inside companies	
Cooperation with Veturi-funded companies			

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5.3. Lithuania - Lithuanian Innovation Centre (LIC)

Strengths	Weaknesses	Opportunities	Threats
SMEs are oriented to the global market from the start.	Lack of awareness of digital solution creators about the specific needs of manufacturing companies or other bioeconomy entities	The main focus of the investments under the Programme for the European Union Funds on the intelligent and greener Europe.	One of the competitive advantages – lower production costs – that used to be very relevant for Lithuanian SMEs is not that prominent.
Flexibility of SMEs to adapt their knowledge to various market needs	Small SMEs hardly can compete for the top ICT talents with startups and financial sector.	International cooperation (involvement in COSME and EDIH activities) may widen the view and increase awareness of the possibilities among politicians	Faster progress made by the competitors because of larger scale and financial capabilities.
Digitalization and sustainability are part of the national smart specialisation strategy.	Lack of knowledge and experience within universities how to turn inventions into innovations that are ready to market. Lack of cross-skills education.	Lithuanian policies will prioritize Lithuanian SMEs integration into the high-added value chains	Customers are waiting for the mature products (ecological, organic etc) at a competitive price while technologies aren't ready yet
Significant public funding for digital and sustainable technologies R&D	Low private investments in the region in research and innovation implementation by SMEs.	Enterprise networking enabled by European public funding	Uncertain economic and geopolitical situation might halt private investments
Complementary clusters in the region that have good collaboration relations.	Lack of strong R&D infrastructure for research, development, testing and demonstration for digital solutions	Lack of labour force will require manufacturing SMEs search for technological solutions that could enable productivity increase	Medium-long term limitation of required competencies in the high-tech sectors
	Slow process of public funding procedures and excessive bureaucratic requirements.	EU focus on the short-supply-chains will create a higher demand for new effective business models enabled by Bio or digital technologies	Competition for high-skilled people, and lack of interest in engineering or other technical studies
		Increasing energy prices might spur demand for sustainable energy solutions.	
		There is a growing trend of eco and organic food among consumers, thus solutions that proves the authenticity and quality will be in demand	

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5.4. Poland - National Centre for Research and Development (NCBR)

Strengths	Weaknesses	Opportunities	Threats
Diversified offer source of financing: The relatively broad range of innovative funding instruments on the national and international level.	Regulatory and administrative barriers: Low understanding of the legal and regulatory framework: struggle to comply with regulations, overregulation of access to funding opportunities/instruments, patenting.	The offices support Technology Transfer by facilitating the transfer of technology and knowledge from academic institutions/innovations agencies to industry.	Economic Conditions: Economic downturns or recession, inflation, geopolitical situation can impact funding and investment, reduced growth and job creation.
Regional engagement: Boosting local industrial value chains.	Lack of skills / Limited access to resources, knowledge, and experienced specialists: SMEs have limited access to resources such as specialized equipment, laboratories, skilled personnel (often caused by low earnings), business models, and management knowledge/experience.	Matchmaking events online and on-site, regional and Pan-European, matchmaking online platform (NCBR Part Finder)	Low understanding the legal and regulatory framework
Collaboration: Innovative agencies bring together diverse groups of people with funding, expertise, and infrastructure, which are crucial for supporting innovation and entrepreneurship.	Barriers towards internationalization. Low level of the international cooperation	Venture Capitals, Incubation, and Acceleration Programs: Support programs to provide startups with the resources and guidance (mentorship, networking opportunities, funding, and access to specialized equipment or facilities) they need to develop their ideas and bring their products or services to market (f.ex. Farm to Fork).	Public Perception: Negative public perception of the innovation landscape - public grants and amount of the grants
Knowledge Sharing: National and international cooperation and governmental support foster a culture of knowledge sharing and learning: exchange of ideas and best practices.	Lack of human resources, often caused by lack of or low earnings.	Governmental support funding opportunities/instruments create an innovation ecosystem and enable one to gain knowledge and experience.	Regulatory and administrative barriers: Stakeholders may struggle to comply with regulations, overregulation of access to funding opportunities / instruments, patenting. Too long time from the

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			announcement of Call to the granting funding.
Job Creation: The innovation ecosystem by delivering funding opportunities/instruments creates job opportunities and stimulates economic growth.	Funding Gaps: Despite the availability of funding, there can be gaps in the funding ecosystem, with some stages of innovation being underserved, such as early-stage startups or social enterprises.		Funding opportunities – too much dependency on EU funds
Access to resources: National and international cooperation create an innovation ecosystem and brings access to the resources such as network, knowledge, experience, expertise, and infrastructure.			Global Competition: Global competition may have a bad effect on countries offering smaller resources and opportunities.

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5.5. Poland - Unimos / AgroBioCluster (UNI)

Strengths	Weaknesses	Opportunities	Threats
Cross-industry, cross-cluster and cross-sectoral collaboration at regional and European level	Low level of business-academia collaboration	Availability of EU-funds for 2021-2027 at regional and national level	Geopolitical situation
Access to EU funds through different national, regional and European fundings	Low or insuffient level of digital skills and techniques to keep up with development and implementation of digital innovations	Availability of newest research infrastructure and investments made by companies	Raise of prices and inflation
Circulation of (tacit) knowledge and joint implementation of projects and programmes	Insufficient knowledge on new business models creation and support in its implementation, including digital and circular business models	Access to highly qualified labour force from Ukraine	Dependency on EU funding for development and investments
Clear definition of roles, competences at regional leval that avoid overlaps	Lack of knowledge on coordinating multi-disciplinary teams to generate innovations		
Business and innovation support system			

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5.6. Slovenia - ICT Murska Sobota (ITC)

Strengths	Weaknesses	Opportunities	Threats
Multi-actor and cross-disciplinary collaboration (due to small scale environment this is easier to reach, then in big environments)	Lack of knowledge and experience within universities how to turn inventions into innovations that are ready to market.	Introduction of the concept DIH and EDIH	Economic conditions in the region and also nationwide. Influence of COVID and War in Ukraine got everyone on alert, and they stopped with investments.
Access to funds through different national and EU funding	Low amount of private investments in the region.	Slovenia with its central location in the EU is excellent for involvement in different EU funding programmes (Interreg, Cross-border, Horizon,...)	Global competition. Slovenia is a small country, and it is hard to reach the international market.
By being part of different EU funded projects, the technology and knowledge is easily transferred to the region.	Lack of Universities and strong research centers in the region of Pomurje	Lack of labor resources will trigger investment into digitalization and innovations, especially in the agri-food domain.	Brain-drain, not only from the region but also national, due to better opportunities in neighboring countries (Austria and Italy)
		Excellent research environment nationwide. Lots of undiscovered potential within public Universities.	

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5.7. Spain - OnTech Innovation (ONT)

Strengths	Weaknesses	Opportunities	Threats
Technology is becoming more accessible and cost-effective, allowing for more efficient and widespread collaboration	Companies still struggle to fully leverage the potential of innovation ecosystems as they lack the resources and infrastructures to do so.	Being part of an innovative ecosystem promotes interaction with other actors, increasing their possibilities to develop their businesses (internationalization, export, establishing additional contacts, increasing their client portfolio	Lack of clear definitions and standards for innovation ecosystems can lead to mismanagement and inefficiency
Companies are increasingly investing in innovation ecosystems, with many dedicated resources and programs in place to support them	A lack of clear definitions and frameworks for understanding and managing innovation ecosystems, leading to confusion and inefficiency.	Opportunity to use technology, such as artificial intelligence and machine learning, to better understand and measure the success of innovation ecosystems	Strict structure of the ecosystem that avoids the provision of an adequate assessment to the SMEs
Being part of an innovation ecosystem increases competitivity	Difficulty to measure the success of innovation ecosystems, as outcomes are often hard to quantify	Possibility to participate in specific calls for innovation ecosystems	

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6. Summary

As a result of the cross-country collaboration between different European partners, the general overview of innovation ecosystems is provided with examples of good practices and successful initiatives with numerous typical challenges faced by SMEs, exercises, and procedures used on innovation ecosystems, addressing obstacles and barriers, and available programmes access-to-finance. The collected experience and knowledge provide useful information and give guidelines that could help to develop approaches, investigate and compare their existing innovation support initiatives by providing an opportunity to design and implementation of better practices, and successful methodologies from the partners and from their network members, identify the options, and alternatives that the partners in the consortium have developed and which can be transferred good practices among participating agencies or other organizations. Although the report is a complex overview of the innovation ecosystems, many tasks and activities still need to be carried on.

Therefore, the report will be exchanged between the partners and used as the baseline to design study visits/workshops to adapt and cement the learning in the participating organisations and to assist the consortium members to better assist SME clients within the bioeconomy sector with access to financing and investment as a means of generating growth, and thereby improving competitiveness, profitability, and employment.
Additionally, the report will be used as a basis for the co-design and co-creation of the Design Options Paper - joint strategy and new services development (DOP) in order to achieve the D1.2 Design option paper.

BIOBoost consists of 8 partners from 7 EU countries representing more developed ecosystems with innovation leaders or strong innovators, transition region with the moderate innovator, and less developed Widening countries. The widening countries of the EU are emerging markets that are developing dynamically, but they are still not as developed as countries with higher participation and investment rates in FP7 and H2020 projects and there are significant differences between regions. However, there are many programs supporting the development of bio-economy, grants, or government investments and policies, but their markets have not reached yet the appropriate level of development according to their potential among others by facing many challenges in their regions like limited opportunities, limited resources or the lack of adequate infrastructure. Another of the key skills required of innovation agencies is access to financing. Finance plays a critical role in innovation, allowing SMEs and organisations to carry out research, adopt technologies and develop and commercialize innovations. There are also large differences in investment potential between countries in Europe, with widening countries finding access to finance more challenging.

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Europe needs a strong bioeconomy sector and that can be achieved by facilitating access to funding and financing. This means that innovation agencies must be well-trained and effective and must have access to networks of skilled multidisciplinary experts. Finally, transparent, and well-organized knowledge transfer, especially across widening countries, needs to be assured.

The project contribution:

KPI 2: *Innovation ecosystem relationships* - **Establishment of permanent and wider networks from innovation ecosystem** (IE) representatives' participation in study visits, and connections of networks / owners / members to other regional ecosystems, creating a web of IE2IE-IE2R and IE2IE-IE2B connections (WP1)

Key value propositions of BIOBoost

- BIOBoost integrates partners with complementary sectoral experience and networks, wide geographical coverage, providing optimal cross-fertilisation opportunities, and anchoring learning in all of Europe.
- The project focuses on the bioeconomy, which is a key European focus, vital for future prosperity and sustainability.
- Project activities will benefit society in terms of green, digital, and social transition, while ensuring economic development across Europe, narrowing the digital and bioeconomy divides.
- BIOBoost will build interconnected, inclusive, and more efficient innovation ecosystems based on peer learning and co-development from study visits and staff exchanges.

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