

Project idea form - small projects

Version 2.1

Registration no. (filled in by MA/JS only) _____

Project Idea Form

Date of submission 01/06/2025

1. Project idea identification

Project idea name	Unlocking Bio-Based Potential: Advancing Forestry Side Stream Utilization Through Industrial Pilots and Regulatory Road Mapping
Short name of the project	UnlockingBBP
Previous calls	yes ☒ no ☐
Short name of the previous project	CEForestry
Seed money support	yes ☐ no ☒

2. Programme priority

3. Climate-neutral societies

3. Programme objective

3.1. Circular economy

4. Potential lead applicant

Name of the organisation (original)	Sveriges Lantbruksuniversitet (SLU)
Name of the organisation (English)	Swedish University of Agricultural Sciences (SLU)
Website	www.slu.se



Country SE

Type of Partner Higher education and research institution

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Which organisation(s) in the planned partnership take part in a project within the Interreg Baltic Sea Region Programme for the first time? Please list the respective partners.

- 1) Krakowska Interdyscyplinarna Szkoła Doktorska (KISD); In English Krakow School of Interdisciplinary PhD Studies.
- 2) Mikrobiotech Sp. z o.o.; AGH Junior; Zespół Szkół nr 1 imienia Adama Mickiewicza w Lublińcu (school)

5.1 Specific challenge to be addressed

The project will engage a diverse ensemble of stakeholders to ensure broad-based expertise, local relevance and lasting impact. At its core are rural bio-SMEs and micro-enterprises—such as Biolat, SilvExpo, Sibiotech, UAB Krekenavos agrofirma and Biohifas—that convert forestry and agricultural side-streams into high value-added ingredients for food, cosmetics and textiles, thereby driving new employment opportunities in small towns. Complementing these businesses are under-35 innovators, university spin-outs and vocational students organized through youth branches of the World Bioeconomy Association and regional incubators, who will enrich the project with cutting-edge ideas and fresh talent. Local and regional governance bodies—including municipal councils, wastewater utilities and county-level forest, agriculture and environmental agencies—will streamline permitting, coordinate infrastructure and guide policy alignment. Sectoral clusters and industry associations such as Biocluster Finland, Policy Area Bioeconomy BSR, SME Innmost, Latvijas Finieris and SCA Pulp & Paper will provide technical support, networking and standards harmonization, while farmers' cooperatives, workers' associations and consumer-rights institutes (e.g. the State Food and Veterinary

Service and the Institute of Consumer Rights) will ensure that new bio-products meet community needs and achieve market acceptance. This multi-actor consortium will collaboratively strengthen cross-county competencies and pave the way for sustainable rural development.

5.2 Focus of the call

This project aims to support rural areas by developing business opportunities within the circular bioeconomy sector, delivering major benefits to the forest industry, end users, forest owners and companies, authorities, and society at large. By utilizing forestry side streams not only for energy but also for the development of extracts used in products such as functional foods, industrial chemicals, and cosmetics, the project fosters the creation of high value-added products. Locating extraction facilities near raw material sources—such as forests—can stimulate rural economies and generate job opportunities. The availability of these intermediate products promotes the growth of downstream manufacturing businesses, building a comprehensive value chain from raw materials to final products. The project framework enables comparison of different operational process alternatives, supporting a more holistic and efficient use of forest biomaterials. This contributes to the advancement of a new bioeconomy and increases the competitiveness of forest industry through innovative and optimized process technologies with strong commercial potential. The project seeks to attract young people by involving students as a key target group, as many are not yet familiar with these emerging career opportunities. To address regulatory barriers that often hinder the development of bio-based businesses, the project will also engage with authorities to explore ways of simplifying legal requirements.

6. Transnational relevance

The project partnership creates a basis for transnational green growth by developing the forestry side stream value chain from raw materials to products.

Regulatory processes and upscaling from lab scale to pilot scale in the bio-based industry are very expensive and can prevent investments to startups although the global bio-based business potential is very promising. This challenge is common in all BSR countries and by tackling the challenge, the project can promote the growth of bio-based industries located often close to raw materials in rural areas. The Baltic Sea region faces environmental, economic, and social challenges that no single country can solve alone. Issues such as the impacts of climate changes cross-national borders and require joint solutions.

Transnational cooperation allows countries around the Baltic Sea to pool resources, share knowledge, harmonize regulations, and coordinate actions. Platforms like the HELCOM (Helsinki Commission) show how regional agreements can set common targets, monitor progress, and encourage joint projects. Without cooperation, national efforts risk being fragmented or even undermined by the actions (or inactions) of others.

By working across borders, Baltic Sea countries can build resilience not only for the environment but also for the wellbeing of their societies and future generations.

The multidisciplinary project partners from BSR countries will be critical to be able to proceed with the aim of the project together.



Harmonizing regulatory approaches for novel forestry-derived food ingredients across BSR countries is essential. KTU will support transnational alignment by developing an EFSA-compliant guidance roadmap for industry, based on Regulation (EU) 2015/2283, to facilitate the authorization of natural preservatives such as spruce needle extracts.

7. Specific aims to be addressed

Building trust that could lead to further cooperation initiatives

The project aims to promote the sustainable and high-value utilization of forestry side streams:

The project seeks to:

1. Develop and optimize extraction processes for selected forestry side stream materials to meet industrial requirements in sectors
2. Test and validate pilot cases in close collaboration with enterprises to reduce technical risks and support the transition from pilot to market-ready solutions.
3. Facilitate dialogue with regulatory authorities to identify bottlenecks and develop a roadmap that simplifies the approval process for bio-based extracts.
4. Support knowledge transfer and risk reduction for enterprises, thereby lowering barriers to market entry and encouraging investment in bio-based innovations.
5. Build trust and foster collaboration among stakeholders—including enterprises, researchers, and public authorities.

The project will contribute to unlocking the economic and environmental potential of forestry side streams in BSR.

Initiating and keeping networks that are important for the BSR

This project aims to strengthen the bio-based economy in BSR. The specific aims:

1. Establishing new connections between enterprises, research institutions, and public authorities to foster cooperation in the development of high-value products from forestry side streams.
2. Creating a platform for ongoing dialogue and knowledge exchange, enabling stakeholders to share best practices, align on industrial needs, and collaborate on regulatory issues related to bio-based extract development.
3. Encouraging long-term partnerships that extend beyond the scope of the project, forming the basis for future cooperation and commercialization efforts.
4. Reinforcing regional innovation ecosystems by linking local actors to broader BSR networks, helping smaller enterprises access expertise, resources, and markets.
5. Building trust and mutual understanding among stakeholders to reduce perceived risks and create a supportive environment for sustainable bio-based business development in BSR.

Bringing the Programme closer to the citizens

“N/A”

Allowing a swift response to unpredictable and urgent challenges
“N/A”

8. Target groups

The project will engage five target groups, each directly affected by bioeconomy challenges. Throughout, the consortium will gather data and insights on existing processes.

Latvia: SMEs (Biolat, SilvExpo, AlternativePlants, Pharmeko Lettland and Sibiotech) will contribute operational data on forestry extract production and bioresource processing. Latvijas Finieris will provide process metrics from industrial plywood manufacturing. The Latvian State Forests and the Ministry of Agriculture will be informed about regulatory roadmap and gathered statistical information. University students and academics will be a direct benefits of the knowledge transfer. Sweden: SCA Pulp and Paper Production and Wibax Chemical Company will supply information on lignocellulosic valorization and chemical synthesis workflows. Municipal wastewater treatment plants will contribute monitoring data on nutrient flows and effluent treatment, helping to map regional operational patterns.

Finland: The Ministry of Agriculture and Forestry will facilitate access to sector-wide statistics and policy reports. Biocluster Finland, the World Bioeconomy Association and Policy Area Bioeconomy (BSR) may help with insights aggregation from their member networks. SME Innomost will share performance data from small-scale reactor trials and control strategies.

Lithuania: FBOs will receive guidance and capacity building for preparing EFSA-compliant dossiers for introducing spruce extracts as natural preservatives in food. It will be essential for the relevant preparation of regulatory roadmap.

Poland: The Interdisciplinary Doctoral School, AGH Junior will compile educational and process-related data, facilitating cross-country comparisons and capacity-building resources.

All target groups will actively collaborate by sharing process data, regulatory insights and sectoral expertise.

Please use the drop-down list to define up to five target groups that you will involve through your project's activities.

Please define a field of responsibility or an economic sector of the selected target group

Specify the countries and regions that the representatives of this target group come from.

1. Small and medium enterprise	Innomost will be active partner of the project by upcycling forest industry side streams and transforming birch bark into high-performing products with minimal environmental impact.	Finland (Kokkola)
2. Large enterprise	SCA active partner in the biocide replacement verifications and one of the world's leading producers of unbleached liner which is used as the outer surface layer of cardboard packaging.	Sweden (Obbola, Umeå)
3. National public authority	Latvia State Forest Department at the ministry of Agriculture is responsible about forest sustainable management in Latvia	Latvia (Riga)
4. Regional public authority	The State Food and Veterinary Service under the Ministry of Agriculture of Lithuania, responsible for official controls and enforcement of legislation in food safety, public health, and animal welfare	Lithuania (Vilnius)
5. Education/training centre and school	They build capacity by integrating project methods into curricula and workshops. Example: AGH Junior (AGH University, Poland) will host training modules based on project findings.	Poland(Krakow)

9. Contribution to the EU Strategy for the Baltic Sea Region

Please indicate if your project idea has the potential to contribute to the implementation of the Action Plan of the EU Strategy for the Baltic Sea Region (<https://eusbsr.eu/implementation/>).

yes ☒ no ☐

Please select which policy area(s) of the EUSBSR your project idea contributes to most.

PA Innovation

PA Bio-economy

PA Education

The MA/JS may share your project idea form with the respective policy area coordinator(s) of the EUSBSR. You can find contacts of PACs at the EUSBSR website (<https://eusbsr.eu/contact-us/>).

☐ If you disagree, please tick here.

10. Partnership

Project partners from Sweden, Finland, Latvia, Lithuania, and Poland bring expertise in forestry, bio-based innovation, food technology, regulation, and rural development.

****PP1: SLU (Sweden)**** – Lead coordinator with Baltic Sea Region project experience (e.g., CEforestry). Together with Umeå University, assesses antimicrobial effects of birch bark extracts for pulp and paper microbes.

****PP2: Centria UAS (Finland)**** – Oversees pilot tests, extraction optimization, student engagement, and collaborates with authorities and NGOs on regulatory barriers to bio-based businesses.

****PP3: University of Latvia (UL)**** – Examines barriers and enablers for circular forestry practices and surveys entrepreneurs' transition readiness.

****PP4: Umeå University (Sweden)**** – Supports KTU and SLU in microbiological analysis of forestry extracts for food and pulp & paper applications.

****PP5: Natural Resources Institute Finland (LUKE)**** – Performs pilot-scale extractions, downstream processing, and analyses raw materials and extracts.

****PP6: Kaunas University of Technology (KTU, Lithuania)**** – Develops and validates forestry-derived meat preservatives, assesses safety, and prepares an EFSA-compliant roadmap to support novel food authorization and regulatory alignment."

****PP7: GreenBack Ltd. (Poland)**** – Develops training materials and conducts market analysis for stakeholder capacity-building and biomass value-chain opportunities.

****PP8: MEERI PAS (Poland)**** – Coordinates techno-economic analyses, oversees scenario modeling, and organizes workshops with industry and policy actors.

This partnership combines scientific, technical, industrial, and regulatory expertise across the Baltic Sea Region. Universities and research institutes ensure rigorous analysis; SMEs drive innovation and market uptake; regulatory specialists facilitate compliance. Coverage from Scandinavia through the Baltics to Central Europe fosters knowledge exchange and regional relevance.

To broaden impact, we will engage industry stakeholders from Estonia and Germany, including large-scale forestry and food processors, as well as EU policy experts to harmonize regulatory frameworks.

11. Workplan

The project will promote bio-based business opportunities by enabling the high-value use of forestry side streams (e.g., bark, needles) and supporting regulatory readiness. Five main activities will be implemented, yielding three core outputs: the atlas of production cases, a regulatory roadmap for product implementation, educational tools set.

1. Biomass Characterization - Forestry residues (birch inner bark, pine needles) will be selected and analyzed (HPLC, spectrophotometry) to quantify valuable compounds (shikimic acid, tannins, essential oils).

Deliverable: Report on compound profiles.

2. Extraction & Purification Development - Green extraction methods (subcritical water, enzyme-assisted) and purification workflows will be optimized for maximum yield, purity and scalability.

Environmental metrics (energy, water use) will guide process refinement.

Deliverable: Atlas of production cases.

3. Application Testing & Pilot Deployment - Functional efficacy of extracts will be evaluated as preservatives and biocide alternatives in food, leather, cosmetics and pulp applications. Two pilots will validate scale-up and performance:

- Pilot 1 – Birch Inner Bark: 100 L batches of bioactive concentrates will be produced and tested in leather tanning (SCA), cosmetic formulations (AlternativePlants), and pulp industry biocide trials.”
- Pilot 2 – Pine Needle Extracts: Natural preservative prototypes will be developed to partially replace nitrites in meat products and subjected to food safety studies with UAB Krekenavos agrofirmu under EU standards. Deliverable: Pilot validation report.

Deliverable: Pilot validation report.

4. Techno-economic approach and education - Cost–benefit analyses, market potential studies and stakeholder surveys (Latvia, Sweden, Finland, Lithuania, Poland) will identify economic barriers and enablers for uptake in the BSR forestry sector which will be used to prepare a effective educational tools for target groups.

Output: Education tools that shows how to utilize market opportunities.

5. Regulatory Alignment & Roadmap Development - Workshops and bilateral meetings will be convened with EFSA, national authorities and policy experts to co-create a simplified approval pathway covering novel food dossiers, REACH compliance and cosmetic ingredient registration.

Output: Regulatory roadmap.

Involvement of Target Groups - SMEs, industry partners, government bodies and consumer organizations will be engaged via stakeholder workshops, on-site testing activities and regulatory dialogue. They will contribute expertise, share practical challenges, test solutions and validate outputs.

Use of Final Outputs - Validated extraction protocols, application-ready product concepts and the regulatory roadmap will be directly adopted by companies such as Biolat, Innomost, AlternativePlants, SCA and UAB Krekenavos agrofirma. Government ministries and regulatory agencies will leverage the roadmap to streamline approval of novel bio-based products.

12. Planned budget

ERDF budget (planned expenditure of partners from the EU)	EUR 500,000.00
Norwegian budget (planned expenditure of partners from Norway)	EUR 0.00
Total budget (including preparatory costs)	EUR 500,000.00

13. Project consultation

Please indicate if you wish to have a consultation (online meeting) with the MA/JS to discuss your project idea

yes ☒ no ☐

14. Questions to the MA/JS

Questions related to the content of the planned project *(max.1.000 characters incl. spaces)*

Questions related to budgeting and expenditure *(max.1.000 characters incl. spaces)*

Any other questions *(max. 1.000 characters incl. spaces)*

15. Additional information

KTU researchers have experience in regulatory science and food innovation. The roadmap tool for EFSA compliance will bridge the technological innovation of using forestry residues with regulatory requirements, reducing time to market and regulatory uncertainty for the food industry.

Connection to Previous Projects (Section 1): CEForestry, our ongoing project, is focused on the feasibility of valorizing forestry residues. UnlockingBBP builds upon that foundation by moving into pilot-scale validation, regulatory harmonization, and commercialization readiness, ensuring practical uptake and real-world impact.

Your account in BAMOS+

Please remember that to officially submit your application you need to access our electronic data exchange system BAMOS+. More information about the process of applying for your account in BAMOS+ you will find here:

<https://interreg-baltic.eu/gateway/bamos-account>