Project idea form - small projects

Version 2.1

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

Project Idea Form

Date of submission *05/06/2025*

1. Project idea identification

Project idea name	Integrated Functional Biochar and Phytoremediation Systems for Cleaner Rural Waters
Short name of the project	IFBIO
Previous calls	yes ◯ no ◉
Seed money support	yes ◯ no ◉

2. Programme priority

	2. Water-smart societies

3. Programme objective

	2.1. Sustainable waters

4. Potential lead applicant

Name of the organisation (original)	*Itä-Suomen yliopisto*
Name of the organisation (English)	University of Eastern Finland
Website	*www.uef.fi*
Country	FI

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.

University of Eastern Finland (UEF)
Gdańsk University of Technology (Gdańsk-Tech)
Vilniaus Gedimino technikos universitetas (VILNIUS TECH)
UEF, Gdańsk Tech, and VILNIUS TECH will implement the results as project partners. Local community actors—including village associations, farms, small WWTP operators, and joint water area associations—will co-develop, test, and apply the nature-based solutions in Finland, Poland, and Lithuania

5.1 Specific challenge to be adressed

Rural communities in the Baltic Sea region face water quality problems caused by agricultural runoff and discharges from small wastewater treatment plants (WWTPs). These challenges harm biodiversity, limit recreational use, and reduce the ecological and social value of local water bodies.

This project responds by co-developing and piloting nature-based solutions—such as biochar filters and floating wetland systems—in direct collaboration with local actors. In Finland, a floating biochar island will be installed at a eutrophic pond in Lake Höytiäinen in cooperation with the joint water area association, village association, and local NGO Pro Höytiäinen. In Poland and Lithuania, similar pilot systems will be co-designed and tested with municipal utilities and rural stakeholder groups.

While the core partners—UEF, Gdańsk Tech, and VILNIUS TECH—receive project funding, local actors participate through in-kind contributions and their own operational resources. These include land, infrastructure, and labour for pilot implementation, ensuring shared ownership and long-term benefit. The project builds practical, community-led capacity to address water pollution—aligned with real

needs, not academic interests.

5.2 Focus of the call

The project strengthens the cohesive development of small rural communities by empowering local actors to co-design, implement, and maintain cost-effective, nature-based water treatment systems. In each partner country, the pilots are implemented with community-based associations, small farms, and local utilities, addressing site-specific water pollution issues.

By combining local knowledge, volunteer effort, and scientific support, the project creates place-based solutions that remain in use beyond the project period. It also builds lasting links between citizens, municipalities, and researchers, fostering long-term capacity to tackle environmental challenges in rural regions.

6. Transnational relevance

The project addresses shared challenges in rural water quality across the Baltic Sea region. All partner countries face similar pressures from nutrient runoff and small WWTP discharges, but climate, land use, and local governance vary.

By implementing coordinated pilots in Finland, Poland, and Lithuania, the project enables cross-learning and method harmonisation. For example, longer growing seasons in Poland and Lithuania support testing of plant-based systems beyond what is possible in Finland. Differences in biochar availability, municipal capacity, and local community structures also offer valuable insights for mutual learning.

Transnational cooperation ensures scalable, adaptable, and climate-resilient nature-based solutions with broader relevance beyond national contexts.

7. Specific aims to be adressed

Building trust that could lead to further cooperation initiatives

The project fosters trust through practical cooperation between academic institutions, municipalities, small enterprises, and local communities. By involving stakeholders from different sectors in joint pilots and problem-solving, the project builds shared understanding and confidence. This approach lays a strong foundation for long-term collaboration in water protection, circular economy, and local innovation. It also enhances the ability of local actors to initiate future projects together.

Initiating and keeping networks that are important for the BSR

The project strengthens and expands existing networks related to biochar use, sustainable land management, and nature-based water treatment. It connects community-based actors with research

organisations and public authorities across the Baltic Sea region. Continuous knowledge exchange through pilot activities and workshops will keep networks active and evolving. The project builds cross-border partnerships that last beyond the project duration.

Bringing the Programme closer to the citizens

Citizens are not just recipients of results—they are active co-developers. Village associations, water area owner groups, and local farmers help design and operate the pilot systems. Their knowledge and commitment shape the outcomes and create strong local ownership. However, local actors rarely have the capacity to develop knowledge-based solutions alone. The project bridges this gap by combining their practical experience with the scientific and technical support of universities. Through this collaboration, the programme becomes visible and meaningful at the grassroots level, fostering trust in EU-funded cooperation.

Allowing a swift response to unpredictable and urgent challenges

The project offers practical tools that help rural areas react quickly to sudden water quality problems caused by heavy rain, flooding, or other climate-related events. The purification systems—such as biochar filters and plant-based structures—are low-cost and easy to install, even in remote areas. Because they rely on local materials and simple methods, they can be adapted and deployed fast when needed. Eutrophication and nutrient pollution create local environmental crises that require timely action. The project enables quick deployment of floating islands and biochar-based filters using local materials and simple methods. Communities can act without waiting for complex permits or large infrastructure. This fast, adaptive response model helps small actors protect their water resources when and where it matters most.

8. Target groups

The project brings together key actors from rural communities, small businesses, research institutions, and local governance who are directly affected by nutrient runoff and water quality issues. These groups are well positioned to co-develop and apply nature-based and knowledge-based purification systems tailored to local conditions.

Farmers and small enterprises are at the core, as they manage the landscapes where nutrient runoff begins and where workable solutions are most urgently needed. Village associations, joint water area associations, and local NGOs contribute context-specific insight, build community engagement, and help ensure social acceptance. Municipal WWTP operators and utility companies bring technical expertise and operational relevance.

Crucially, while local actors lead pilot implementation, they rarely have the capacity to develop knowledge-based solutions alone. This is why universities and technical experts support method development, monitoring, and harmonisation—always as enablers, not drivers. All target groups are involved throughout the project: from planning and design to field testing and feedback. This structure creates shared ownership and ensures durable results that can be transferred across the Baltic Sea Region.

	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.	Higher education and research institution	Science and technology, Forestry and agriculture	Poland, Finland, Lithuania
2.	NGO	Water and environmental protection, Village associations	Poland, Finland, Lithuania
3.	Local public authority	Municipality	Finland, Poland, Lithuania
4.	Small and medium enterprise	Farmers, biochar producers	Poland, Lithuania, Finland

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 Nutri
PA Bio-economy
PA Hazards

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

The partnership brings together research institutions, rural municipalities, utility providers, small companies, and community organisations from Finland, Poland, and Lithuania. The lead partner, University of Eastern Finland (UEF), coordinates the project and supports pilot development,

monitoring, and method harmonisation. Gdańsk University of Technology contributes wastewater treatment and stakeholder engagement expertise. Vilnius TECH leads the design of phytoremediation systems and floating wetlands.

Karelian Paju Ltd (Finland) supplies functionalised biochar and supports replication in field sites. Pilot sites in Poland involve the Municipality of Starogard Gdański and Jabłowo Utilities Plant. In Finland, local community associations, small farms, and water governance actors will co-develop and maintain pilot systems. Lithuanian community partners are being identified to complement the team.

Universities are the formal project partners receiving funding. All other actors, including farms and local associations, participate through in-kind support and operational budgets. This ensures ownership, place-based solutions, and wide transferability across the Baltic Sea region.

11. Workplan

The project addresses nutrient runoff from rural areas by designing, implementing, and evaluating nature-based purification systems that combine functionalised biochar with phytoremediation plants such as willow, miscanthus, and cattail. These systems aim to reduce nitrogen and phosphorus before discharge into nearby streams, ponds, or lakes. Each country hosts 1–2 pilot sites co-developed with local actors, tailored to national and local conditions:
FINLAND – Liperi, North Karelia (Niinikkolampi site) and Kontiolahti, North Karelia (Kunnasniemi sites) The Niinikkolampi pilot will be implemented and monitored as part of a local lake restoration initiative led by a Water Protection Association (Vesiensuojeluyhdistys), with this project contributing technical expertise, coordination support, and monitoring tools. At Niinikkolampi site, two nature-based solutions will be deployed: (1) floating wetland platform planted with native species and integrated biochar matrix on the eutrophic lake Niinikkolampi, and (2) Biochar edge-of-field filtration for peatland runoff ditches. A second pilot will be fully implemented in project and will be carried out at the mouth of the Kunnasniemi Bay. This will replicate the Niinikkolampi solution and be installed directly with project funding and coordination.
LITHUANIA – Kaunas district, Zapyškis settlement. Two pilots will be performed (1) floating wetland with biochar and wetland plants in an agricultural ditch; (2) biochar-based plant filter for rainwater surface runoff. Installed in areas surrounded by farming land with high nutrient load. Target Groups and involving stakeholders include local public authority (Zapyškio seniūnija) and local community center (Zapyskio bendruomenes centras) which are providing support and outreach. Farmers provide site access and contextual input.
POLAND – Starogard Gdański commune. Actions are aimed for two pilots: 1) Subsurface vertical flow constructed wetland (SVF-CW) with biochar-enhanced media, treating WWTP outflow with high N and P loads and 2) Floating treatment wetland system at Jabłowskie Lake with anchored biochar rafts. Target Groups and involved stakeholders include municipal utility company Jabłowo and WWTP operators, Community participating in lake protection education and commune mayor supporting dissemination and local integration.
In all pilots in the project, local authorities, landowners, farmers, NGOs, and communities are actively engaged as stakeholders. Local landowners and farmers contribute to site selection, installation, and feedback. Municipality and local communities are engaged through awareness-raising events and

workshops. Expected outputs from pilots are monitored demonstration sites in all partner countries, enhanced water quality in pilot areas with biochar-based phytoremediation, and increased awareness and regional replication potential of solutions.

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 XXX*
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

The project builds on existing collaboration among the partners and is informed by earlier research and pilot activities involving biochar and phytoremediation. Several of the involved institutions and organisations have previously worked together, and the concept has been jointly developed through preparatory discussions.
We would appreciate feedback on the following points:

The eligibility of involving a small enterprise (Karelian Paju Ltd) as a full partner in a non-commercial R&D role; The eligibility of preparatory lab work and stakeholder engagement activities in autumn 2026 prior to full implementation;
Whether the planned demonstration scale (up to 500 m² per site) and nature of the pilot actions meet the Programme's expectations; Possibilities to align the project with relevant EU Strategy for the Baltic Sea Region policy areas or flagships.
We are fully committed to adjusting and refining the project based on the Programme's guidance and look forward to your input

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