Network for Innovation in Life Sciences Higher Education

Created in March 2026

Executive Summary

ICA-CoP Bio-Edu Workshop 2025: 'Learning Communities for the Transformation Towards a Bioeconomy'

Background

The ICA Community of Practice for Bioeconomy Education (CoP Bio-Edu) is a Committee of the Board of the Association for European Life Science Universities (ICA). The Committee is a network of individuals that act as educators in the bioeconomy world and has the goal to enhance the quality, offer and diversity of education for the sustainable circular bioeconomy in Europe. Annual workshops organised by CoP Bio-Edu are designed to share experiences and good practices among educational actors to achieve this goal.

The ICA-CoP Bio-Edu Workshop was held 20-21 November 2025 at the Irish College Leuven, Belgium, and brought together representatives from universities, industry, policy and civil society to further develop the concept of Learning Communities (LCs) as key instruments for advancing the transition towards a sustainable bioeconomy. Through the discussion of case studies, perspectives from across the quadruple helix, and policy insights, participants identified essential success factors, common challenges and practical recommendations for strengthening Learning Communities as drivers of change.

1. Shared Understanding: What Is a Learning Community?

During the workshop, LCs were described as dynamic, theme-oriented ecosystems that connect actors from all four helixes to learn together, experiment and implement tangible steps toward a bioeconomy. They are defined by a shared mission, clearly formulated goals and a common language. Participants emphasized the need for openness and a willingness to learn, including the acceptance of failures. Communication must be transparent, trust-building and oriented towards concrete action rather than the mere exchange of knowledge.

LCs are meant to multiply and disseminate insights and solutions, while remaining flexible enough to adapt to the needs of different regions, themes and stakeholder constellations. A central topic of discussion concerned how LCs differ from established formats such as living labs. Unlike living labs, LCs were found to offer more flexibility and a wider perspective, prioritizing continuous learning over fixed outcomes.

2. Insights from Case Studies: What Works – and What Doesn't?

The examples presented during the workshop – among them BioökonomieREVIER, the Urban Living Lab Breda, Smart Green Municipality Forssa, TransBIB and the Greifswald initiatives highlighted recurring patterns. Successful LCs often build on straightforward narratives that resonate with people's everyday lives, such as reduced living costs rather than abstract sustainability goals. They involve civil society early and genuinely, rely on small and focused groups rather than overly large consortia, and operate with clearly defined roles, shared ownership and structured moderation. Regular exchange formats and open data environments also proved beneficial.

However, several challenges emerged across cases. Trust can erode quickly when goals are unclear, political priorities shift or transparency is lacking. Competition among municipalities, companies or academic institutions can hinder collaboration. Motivation may stagnate, and emotional resistance can arise. Moreover, many LCs struggle to secure long-term engagement from companies or local governments, and demographic decline intensifies the difficulty of retaining talent. The overarching insight was unmistakable: without a shared vision and continuous communication, Learning Communities dissolve rapidly.

BioökonomieREVIER **(Bürgewald, Rhenish area, Germany)**

The Initiative BioökonomieREVIER aims to transform the Rhenish region after the lignite phase-out in 2030 into a bioeconomy model region. For this purpose, diverse actors collaborate while focusing on climate-neutral value chains, future-proof jobs and inclusive learning spaces to advance regional transformation. Key findings of this case show the importance of clear and accessible communication and strong coordination to manage different expectations.

Source: Bioökonomie Revier

Source: Urban Living Lab Breda

Urban Living Lab Breda **(Zandberg, Breda, Netherlands)**
The collaborative platform Urban Living Lab Breda uses a community-based approach to advance local bioeconomy transitions in a neighbourhood with poorly insulated housing. Therefore, a Neighbourhood Energy Plan is implemented that includes pilot projects on biobased insulation. The case demonstrates that working with residents requires patience, as building trust takes time and consistent support from authorities is often inconsistent.

Smart Green Municipality Forssa **(Forssa, Häme, Finland)**
An example for a strong foundation regarding greener societies in the Nordic region is the Smart Green Municipality Forssa. Its biobased circular economy is strengthened through the collaboration of different actors and across sectors that support sustainable development and education. A shared vision and continuous learning with community engagement help make this possible.

Source: HAMK Häme University of Applied Sciences

3. Why Do We Need Learning Communities? – Quadruple Helix Perspectives

From an industry perspective, LCs offer access to innovation, skilled talent, neutral intermediaries, risk-sharing arrangements and pathways to scale-up. Yet companies often underestimate the central role of human capital and therefore need early and meaningful involvement, concrete challenges to work on, clear value propositions and dedicated contact persons.

Policy actors view LCs as important bridges between strategic goals, local practice and evidence-based policymaking. They require clear impulses, compelling narratives, measurable impacts and well-structured platforms for participation.

Civil society, finally, is essential for legitimacy, acceptance and local anchoring and shifts from being passive observers to active co-creators, who have a seat at the table to shape the transition towards a bioeconomy in a way that reflects their own values and concerns.

The role and perspectives of universities, which meanwhile increasingly act not only as educational institutions but also as knowledge and innovation actors, is elucidated specifically in section 6 as their potential role as neutral facilitators and initiators of LCs is growing.

In general, the effective involvement of all partners requires understandable and relatable communication as well as authentic opportunities for participation.

4. Contribution to Policy Processes

LCs can significantly support policymaking by providing practice-based evidence for strategies and legislation, identifying barriers – whether technical, market-related or societal – at an early stage, and promoting greater coherence across policy sectors. They also help accelerate innovation and market uptake.

EU Bioeconomy Strategy emphasises scaling innovation from early-stage research to market-ready solutions, creating lead markets, ensuring sustainable and resilient biomass supply, fostering global partnerships, and strengthening education, skills and re-/upskilling. In this context, the European Commission has also highlighted the importance of strengthening platforms for learning and stakeholder networking in the bioeconomy, comparable to existing initiatives in the circular economy domain.

5. Success Conditions and Pitfalls for Learning Communities

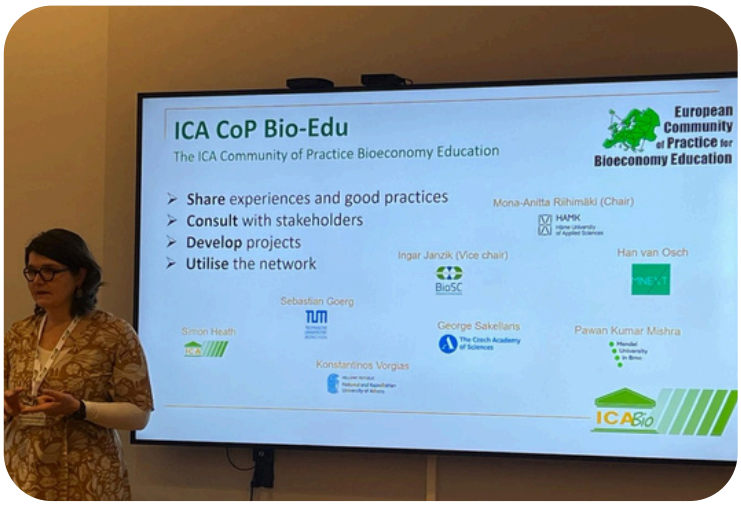
According to workshop participants, LCs thrive when they operate with clearly defined goals, roles and responsibilities. They require a shared narrative and accessible communication, strong intrinsic motivation, active listening and trust-building, as well as transparent handling of emotions and interests.

Neutral facilitation or moderation is crucial, as is the use of AI-supported tools for preparing knowledge and matching stakeholders. Successful LCs combine quick wins with long-term impact and involve the right individuals rather than only their organizations. Regular reflection and adaptation cycles are essential.

Common pitfalls with a more internal focus include unclear ownership, insufficient political connection, and a failure to recognize emotional, interest-based or power-related dynamics. More externally induced pitfalls like bureaucratic delays and limited access to modern educational technologies can impede progress, and extra overall pitfall is that the LCs frequently end once the funding for a project runs out.

6. Role of Life Science Universities

Life science universities have the potential to become central drivers of LCs. They can initiate LCs, when problems and relevant stakeholders have been identified, act as neutral facilitators between industry, policy and society by contributing their ability to initiate co-creative processes, and provide access to talent, research capacities and real-world laboratories.



They can make use of LCs to shape curricula and create microcredentials and lifelong learning opportunities, and anchor LCs within regional innovation ecosystems. To fulfil this role, universities need to reduce internal hierarchies, move beyond project dependency especially with respect to funding often going along with misaligned time horizons and recognize community-building as an important academic contribution.

7. Actionable Recommendations for Building and Sustaining Learning Communities

At the outset of an LC, participants stressed the importance of defining a clear and shared goal before applying for funding. Relevant stakeholders – including those not yet aware of the problem – should be identified early. Committed individuals must be engaged, and a thorough preparation phase is needed to align expectations, boundaries and roles. Building trust and developing a shared language are essential, as is establishing professional and neutral facilitation. AI tools can help create a common knowledge base at the beginning. In this way most pitfalls should be overcome: the stakeholders should be committed and feel responsible during and at the end of the project period so that they stay connected, also when they have to pay themselves for their involvement.

For long-term sustainability, transparent processes and decision-making are vital, alongside continuous adjustment of goals. LCs should combine quick wins with strategic actions and maintain long-term anchoring in regions through municipalities, universities and companies. Strong participation of students and young professionals can further enhance sustainability. Systematically documenting failures and lessons learned is important, as is developing new KPIs that capture aspects such as trust, participation and the intensity of mutual learning.

8. Conclusion

The workshop demonstrated clearly that LCs can be a powerful tool to enable cross-sector collaboration, accelerate innovation and foster societal acceptance. Their success depends not primarily on funding or technical tools, but on clear goals, genuine learning processes, continuous facilitation, shared language, trust and committed individuals. Looking ahead, the core message is simple: do not search for a topic first – begin where a real shared problem exists. Bring the right people together, make learning visible and enable meaningful transformation.

How can this be implemented in the transition to bioeconomy? This transition is rarely a simple swap of one material for another; it is a fundamental shift in how societies produce, consume, and value biological resources.

Besides this, the bioeconomy is, even more than other sectors, depending on the chain from producer to consumer. Bringing the actors together in an LC is essential to realise the shift that the bioeconomy needs. The way to achieve this shift is rather systemic than just technical; it is complex, interconnected, and has no single right answer. LCs can act as a connective tool that makes such a massive transition possible, because they prioritize the human infrastructure over the physical hardware.

9. Next steps

Building on the outcomes of the ICA-CoP Bio-Edu Workshop 2025, next steps include strengthening the role of life science universities as neutral facilitators of LCs, contributing insights to European-level dialogue on stakeholder collaboration platforms, and continuing the ICA-CoP Bio-Edu workshop series as a coordination space to support collaboration among quadruple helix actors and advance the transition towards a sustainable bioeconomy.

Updates on upcoming activities of the ICA COP Bio-Edu can be followed on the dedicated ICA website.

Acknowledgement

The Summary Outcomes were prepared by Ingar Janzik (Forschungszentrum Jülich GmbH and Bioeconomy Science Center, Germany), with support from the corresponding authors Han van Osch (Avans University of Applied Sciences, The Netherlands & Dutch Biobased Knowledge Network) and Mona-Anitta Riihimaki (Häme University of Applied Sciences, Finland). Comments and reviews from ICA CoP Bio-Edu members were taken into account.

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