Rural BioUp

Grow local, go global

RuralBioUp Replication Manual

September 2025

Funded by the European Union

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About the RuralBioUp project

September 2025

RuralBioUp is a three-year Horizon Europe initiative (October 2022 – September 2025) with the primary goal of supporting innovators to scale up inclusive, small-scale bio-based solutions in rural areas. To achieve this, the project establishes nine multi-actor regional hubs across six EU countries (France, Romania, Czechia, Ireland, Latvia, and Italy).

Each hub brings together farmers, foresters, clusters, policymakers, companies, business support organisations, civil society groups, and other regional bioeconomy actors, guided by regional facilitators and hub contact points. Together, these stakeholders codesign and implement nine Action Plans, covering a total of 18 value chains, with a commitment to support at least 1,000 innovators through training, mentoring, networking events, study visits, and coaching.

The hubs also aim to measure and enhance economic, environmental, and social impact, and to develop strategies that ensure the sustainability of the hubs beyond the project's duration. Additionally, the project features RuralSpot, a one-stop digital platform providing regional data on biomass availability, business models, technologies, market applications, nutrient recycling, soil improvement, and funding options.

About the authors

All authors are part of the team at the Centre for Social Innovation (ZSI) in Vienna, Austria, which serves as the methodological and analytical core of this work.

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Executive Summary

The **RuralBioUp Replication Manual** is a practical guide for stakeholders aiming to establish regional bioeconomy hubs that foster sustainable innovation, collaboration, and economic development in rural areas. Rooted in the experience and insights of the RuralBioUp project, a Horizon Europe initiative spanning six EU countries, this manual presents a step-by-step approach to designing and implementing bioeconomy support structures adapted to local conditions and needs.

Bioeconomy hubs serve as central platforms that bring together diverse stakeholders from the public sector, private industry, academia, and civil society. Their purpose is to accelerate the adoption of bio-based solutions, strengthen regional value chains, and enable the inclusive and sustainable use of biological resources. The manual offers practical tools, frameworks, and real-life examples from the nine RuralBioUp regional hubs to inspire and support similar efforts elsewhere.

Key components of the manual include:

- **An overview of the bioeconomy and its regional relevance**, highlighting the role of hubs in aligning EU policy goals with local action.
- **A definition and conceptual model of bioeconomy hubs**, distinguishing them from other support structures such as clusters.
- **Guidance on co-creation and stakeholder engagement**, including best practices for inclusive participation, trust-building, and shared decision-making.
- **A stepwise roadmap** for setting up a hub from defining a shared vision, developing a governance structure, and mapping stakeholders, to piloting services and evaluating outcomes.
- **Practical tools and methods** such as the logic model, stakeholder mapping, strategic action planning, and monitoring & evaluation templates.
- **Lessons learned** from the RuralBioUp hubs on managing diversity, sustaining engagement, and translating vision into action.

This manual is designed for a broad range of users including regional policymakers, innovation facilitators, researchers, entrepreneurs, and civil society organisations who see the bioeconomy as a lever for rural transformation. It encourages users to adapt, combine, and evolve the proposed methods according to their own regional context, existing networks, and strategic goals.

In an era where sustainability and regional resilience are more important than ever, **bioeconomy hubs** offer a tested model for driving place-based innovation that aligns environmental, economic, and social value. This manual aims to make the creation of such hubs more accessible, impactful,and scalable.

Introduction

Why a replication manual?

This **Replication Manual for regional bioeconomy hubs** serves as a comprehensive guide for stakeholders looking to establish a support structure that drives innovation, collaboration, and sustainable economic growth in the bioeconomy sector. It highlights the strategic role of bioeconomy hubs in promoting bio-based solutions, reinforcing bioeconomy value chains, and fostering cross-sectoral collaboration. Even in regions where support structures exist, a dedicated hub strengthens coordination, unlocks new value chains, maximise economic, environmental, and social benefits.

RuralBioUp's international scope provides examples of cross-regional learning methods within the EU while demonstrating its alignment with national and EU bioeconomy strategies. Good practices and lessons learned from RuralBioUp provide stakeholders with practical resources to navigate challenges, replicate successful models, and scale impact effectively.

This manual presents one specific approach to establishing a bioeconomy support structure, offering a structured framework that can be adapted to different regional contexts. However, there are multiple ways to build and organise such hubs, and stakeholders are encouraged to mix, modify, or further develop these methods based on local needs, existing initiatives, and emerging opportunities.

Who can use this manual?

A bioeconomy hub serves as a central platform that drives the sustainable development of the bioeconomy while offering specific benefits for a wide range of stakeholders:

- **Businesses (SMEs, start-ups, producers, processors, farmers, and foresters):**
  Hubs offer access to new business models and income streams through bio-based solutions and valorisation of by-products. They facilitate innovation, practical knowledge transfer (e.g. study visits), visibility, networking, and access to funding opportunities.

- **Research institutions and universities:**
  Hubs enable real-world application of research, foster collaboration with practitioners, and contribute to education and skills development for the next generation of professionals.

- **Policymakers and public authorities (regional, national, EU):**
  Hubs support the integration of bioeconomy into regional development strategies and serve as a bridge between policy and practice. They help identify local potentials and foster cross-sectoral coordination and stakeholder dialogue.

- **NGOs and associations (e.g. farmers' or industry associations):**
  As multipliers, they amplify communication, connect members to collaborative projects, and help raise awareness and impact across communities.

- **Local communities and citizens:**
  Hubs improve rural quality of life by promoting sustainable practices, preserving local heritage, and encouraging responsible use of natural resources.

In summary, this manual can be relevant for all stakeholders who see a bioeconomy hub as an instrument for driving economic, social, and ecological transformation of rural areas.

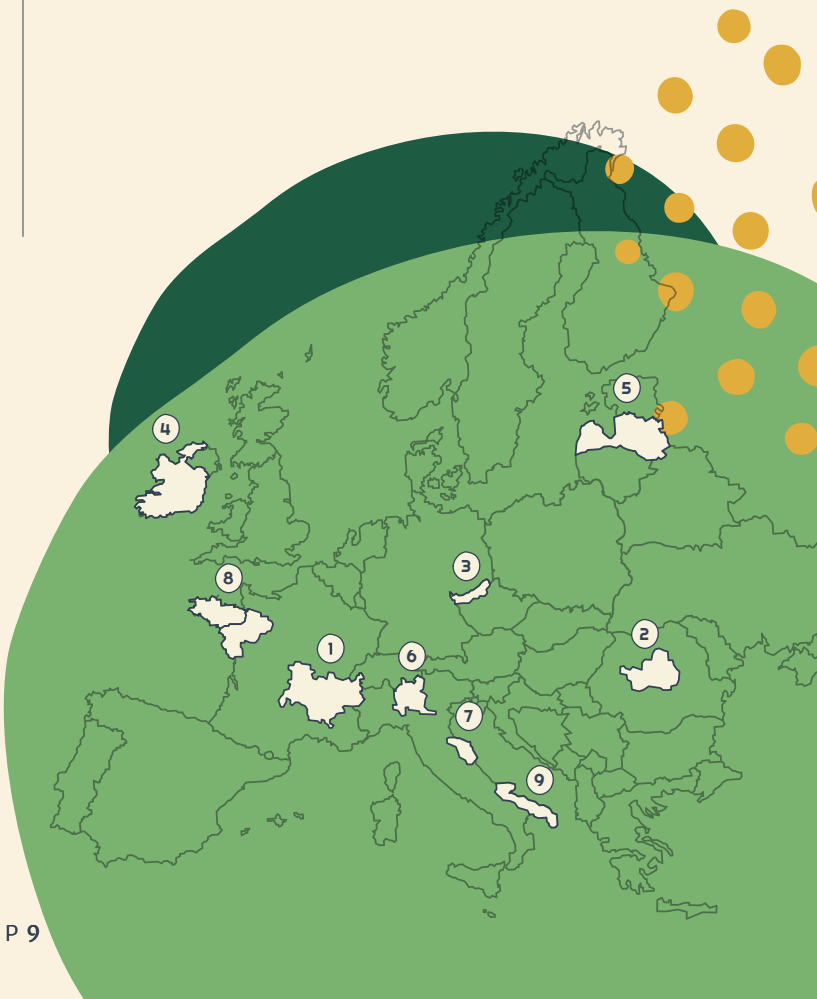
The Bioeconomy in Europe: Regional Roles and Relevance

The European bioeconomy is central to the EU's vision of a sustainable, circular, and climate-resilient society. The 2018 EU Bioeconomy Strategy (European Commission, 2018) defines it as the production and conversion of renewable biological resources ranging from crops and forests to microorganisms into food, materials, bioenergy, and bio-based products. This systemic approach bridges agriculture, forestry, fisheries, aquaculture, biotechnology, and related services, reflecting a concerted push toward resource efficiency and environmental sustainability.

Aligned with the European Green Deal, the Circular Economy Action Plan, and climate and biodiversity goals, the bioeconomy plays a pivotal role in reducing greenhouse gas emissions and cutting fossil fuel dependency. By enabling circular resource use and biomass valorisation, it supports sustainable land use, waste reduction, and the development of resilient regional economies.

The deployment of bioeconomy strategies at regional levels is vital. The RuralBioUp project serves as a prime example: through the establishment of **nine regional hubs across six EU countries**, it supports small-scale, inclusive bio-based innovations tailored to rural areas.

This regionalised approach not only nurtures entrepreneurial ecosystems in rural communities, but also promotes ecological stewardship, local value chains, and regional economic diversification. Tailoring the EU bioeconomy narrative to local strengths and needs while equipping stakeholders with tools like RuralSpot turns regional hubs into engines of sustainable innovation, advancing Europe's bioeconomy ambitions.



1 Auvergne-Rhône-Alpes Region, **France**
2 Centru Region, **Romania**
3 Charles Spa Region, **Czechia**
4 **Ireland** (The hub operates nationally with a focus on County Tipperary)
5 **Latvia** (The Latvian hub is a national initiative with stakeholders from all over the country)
6 Lombardia, **Italy**
7 Marche, **Italy**
8 Pays de la Loire & Bretagne Region, **France**
9 Puglia Region, **Italy**

Place-Based Bioeconomy Approaches

The work carried out across the RuralBioUp regional hubs underscores the importance of developing bioeconomy through place-based approaches that reflect the specific needs, resources, and opportunities of each region.

Each hub has addressed different aspects of bioeconomy ranging from biofertilisers, bioenergy, and biomass valorisation to agroforestry, dairy, forestry, and wood processing demonstrating how diverse and adaptable the sector is.

This diversity of focus has allowed regions to mobilise local actors effectively, support innovation within existing value chains, and create tailored strategies for sustainable growth. Through stakeholder engagement, training programs, study visits, matchmaking events, and regional cooperation, the hubs have built strong, active networks and laid the groundwork for long-term impact. By anchoring these efforts at the regional level, the project ensures that bioeconomy development is both locally relevant and scalable across Europe.

Bioeconomy Matters: Sustainability, Resilience, and Innovation

The circular bioeconomy (CBE) offers a powerful pathway to enhance sustainability, strengthen economic resilience, and promote social inclusion by maximising the use of biological resources and minimising waste. Emerging from the broader bioeconomy concept which originated in the 1990s and rose to political prominence after 2000 (Hausknost et al., 2017). Bioeconomy marks a transition toward circular, bio-based systems that lessen reliance on fossil fuels, improve resource efficiency, and support societal well-being (Bianchi *et al.*, 2024).

At its core, bioeconomy involves the production, utilisation, and conservation of biological resources, such as plants, animals, microorganisms, and bio-waste to create sustainable products, processes, and services across all economic sectors. It brings together biotechnology, agriculture, forestry, fisheries, food, energy, and health through innovations that reduce environmental impact and promote circular resource use.

In essence, the bioeconomy teaches us how to live with the planet, rather than against it. Regions often have untapped biological assets, skilled communities, and unique environmental conditions that can serve as foundations for bio-based innovation. Adopting a regional innovation system acknowledges that innovation is shaped by and interconnected with the broader socio-economic context of a specific region (Cooke et al. 1997). This approach enables the inclusion of not only technological and economic factors but also social considerations. shaped by and interconnected with the broader socio-economic context of a specific region (Cooke et al. 1997). This approach enables the inclusion of not only technological and economic factors but also social considerations.

To illustrate the core principles of the bioeconomy, the figure below shows the difference of the linear vs. circular bioeconomy. The linear model follows a take–make–dispose pathway, while the circular bioeconomy emphasizes sustainability through reuse, recycling, and innovation-driven production.

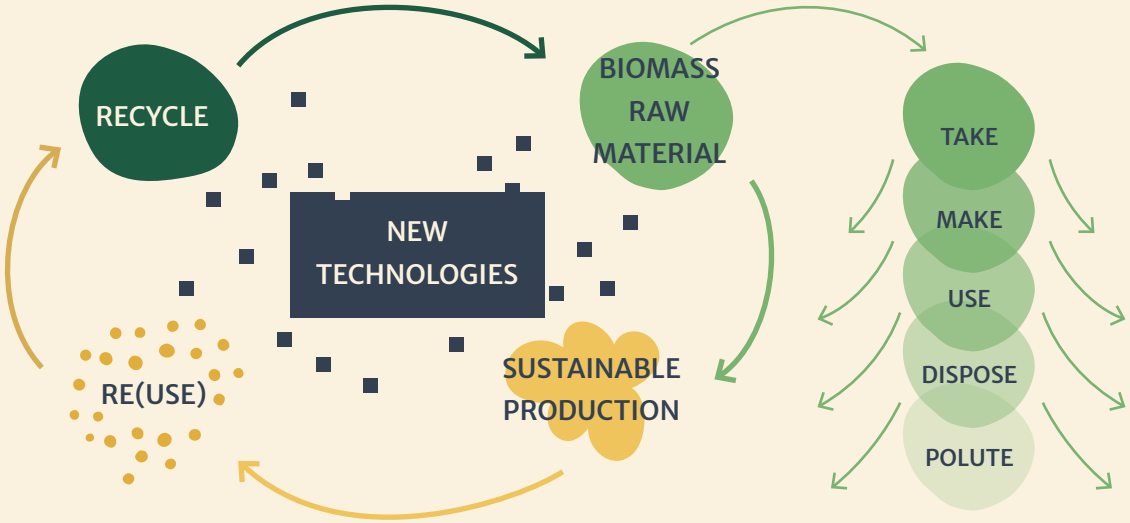


Figure 1: Linear vs. circular bioeconomy, (adapted from Antranikian & Streit 2022)

Introduction to Regional Bioeconomy Hubs

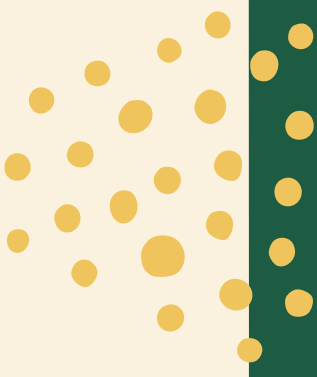
What is a Bioeconomy Hub?

There is no officially established definition of a **bioeconomy hub**, but we can approach a working definition by synthesising elements from existing literature and the RuralBioUp experience.

A **hub** is a centralised, often formalised platform that facilitates **collaboration, coordination, and knowledge exchange** among diverse stakeholders across sectors and regions. In the context of innovation or the bioeconomy, hubs act as **connective ecosystems**, supporting strategy development, capacity building, and policy implementation through **multi-actor engagement**. Unlike clusters, which are typically geographically concentrated groups of firms and institutions in the same industry that thrive on co-location and market dynamics (Porter, 1998), hubs are defined by their functional role - they prioritise systemic connectivity, shared resources, and governance structures over spatial proximity (Toivonen & Friederici, 2015).

After three years of implementation, the hub managers of the RuralBioUp project formulated the following definition of a bioeconomy hub:

A bioeconomy hub is a collaborative space and facilitation tool that brings together diverse stakeholders—such as entrepreneurs, researchers, innovators, policy makers, civil society, media, and other regional actors—across the entire bioeconomy value chain. Its purpose is to foster dialogue, knowledge exchange, and networking in order to identify synergies, share best practices, and co-create solutions to regional and cross-regional challenges and opportunities in the bioeconomy. Through training, consulting, and strategic collaboration, bioeconomy hubs aim to build capacity, influence policy, and support the effective and sustainable use of renewable biological resources. They contribute to the development of functioning bioeconomy systems that align with broader goals such as regional development, climate neutrality, and the European Green Deal. The implementation differs highly from the regional identified opportunities, chances, and cultural working modes.



Further reading:

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Hausknost, D., Schriefl, E., Lauk, C., & Kalt, G. (2017). A Transition to Which Bioeconomy? An Exploration of Diverging Techno-Political Choices. Sustainability, 9(4), 669. view here.

Porter, M.E. (1998). Clusters and the New Economics of Competition. Harvard Business Review.

Toivonen, T., & Friederici, N. (2015). Time to Define What a "Hub" Really Is. view here.

Hub Snapshots

We set up 9 Regional Hubs
in 9 regions in 6 EU countries.

1 Auvergne-Rhône-Alpes Region, France

Hub geographical area

The Regional Hub covers all entire Auvergne-Rhône-Alpes Region.

Mission

- Provide information on bioeconomy and biobased solutions.
- Create a network of local stakeholders in the region.
- Develop collaboration between and within value chains.
- Contribute to capacity building and skills development of local actors.

Value Chains

- Food plant-based by-products.
- Non-food plant-based by-products.

Economic sectors, clusters involved

- Research.
- Institutions.
- Upstream companies.
- Processing companies.
- Distributors.

Regional Facilitator

Vegepolys Valley

Explore the Auvergne-Rhône-Alpes Hub

2 Centru Region, Romania

Hub geographical area

The hub operates at the regional level in Centru Region, in the centre of Romania.

Mission

- Sustainable transition towards the use of natural wood materials/products, sustainable management of biological resources, wood resources and the use of renewable energy.
- Drafting of local strategies for sustainable management of forest resources and of agricultural wood residues.
- Improvement of the existing sustainable business models and of entrepreneurship in the field of wood and agricultural wood residues processing.

Value Chains

- Forestry, wood processing industry and biomass manufacturing and recovery.
- Valorisation of biomass from agricultural (vegetable) waste, agroforestry and the greening areas in the countryside.

Economic sectors, clusters involved

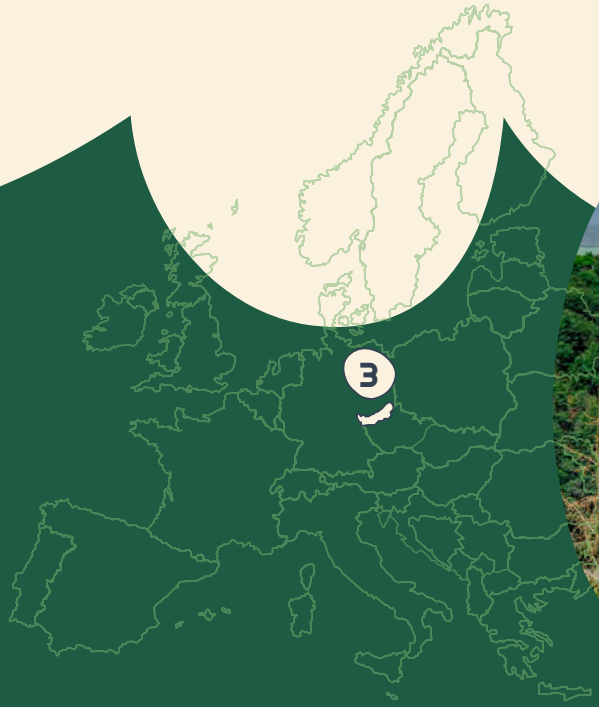
The Regional Hub objective is to involve different types of actors:

- Local SMEs.
- NGOs.
- Business incubators.
- Clusters.
- Local action groups.
- Regional Development Agency.

Regional Facilitator

Institute for Economic Forecasting – Romanian Academy

Explore the Centru Region Hub



3 Charles Spa Region, Czechia

Hub geographical area

The Regional Hub is BIOEAST HUB CZ, a working tool of the BIOEAST initiative of Central and Eastern European countries.

Mission

- To foster a resilient and sustainable circular bioeconomy.
- To unite regional stakeholders, promoting innovation, and facilitating knowledge exchange.
- The Hub as a bridge between the Charles Spa Region and other European regions.

Value Chains

- Hemp.
- Biofertiliser production.

Economic sectors, clusters involved

The Regional Hub objective is to involve different types of actors:

- Research.
- Institutions.
- Upstream companies.
- Processing companies.
- Distributors.

Regional Facilitator

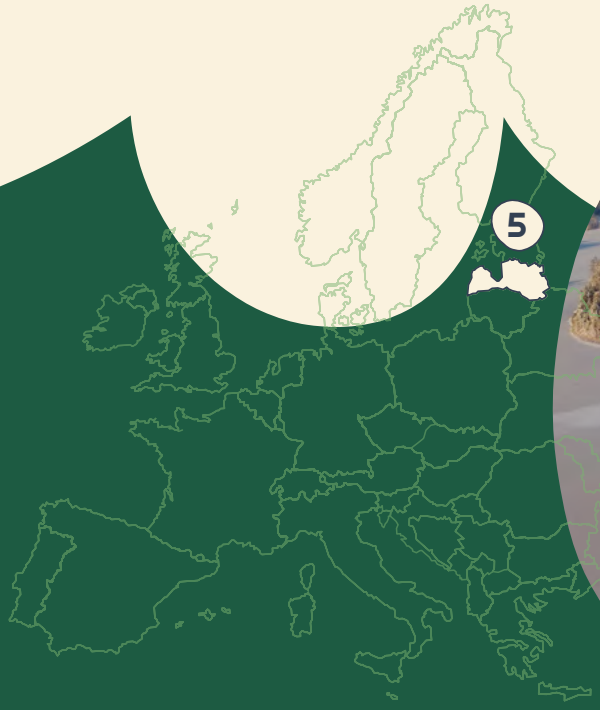
BIOEAST HUB

Explore the Charles Spa Region Hub

4 Ireland

Hub geographical area	The Regional Hub focus is on County Tipperary in the Munster region in Republic of Ireland.
Mission	• Provide information on bioeconomy and biobased solutions for the rural region of Tipperary. • Create a network of stakeholders to grow the bioeconomy in Tipperary. • Collaboration between value chains and project partners.
Value Chains	Utilisation of Dairy production waste.
Economic sectors, clusters involved	The Regional Hub objective is to involve different types of actors: • SMEs. • Biorefinery industry. • Biomanufacturing industry.
Regional Facilitator	**Irish Bioeconomy Foundation (IBF)**

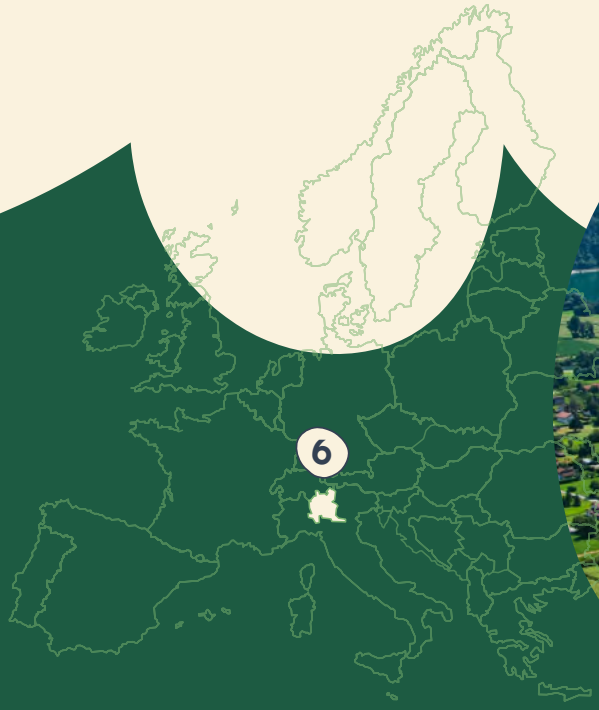
Explore our Ireland Regional Hub



5 Latvia

Hub geographical area	The Regional Hub acts on the national level.
Mission	• Facilitate stakeholder collaboration Identify and scale-up success stories. • Contribute to capacity building and skills development.
Value Chains	Waste and by-product usage Agroforestry system.
Economic sectors, clusters involved	The Regional Hub objective is to involve different types of actors: • Clusters. • Institutions. • Fostering Associations. • Agriculture sectors.
Regional Facilitator	Latvian State Forest Research Institute "Silava"

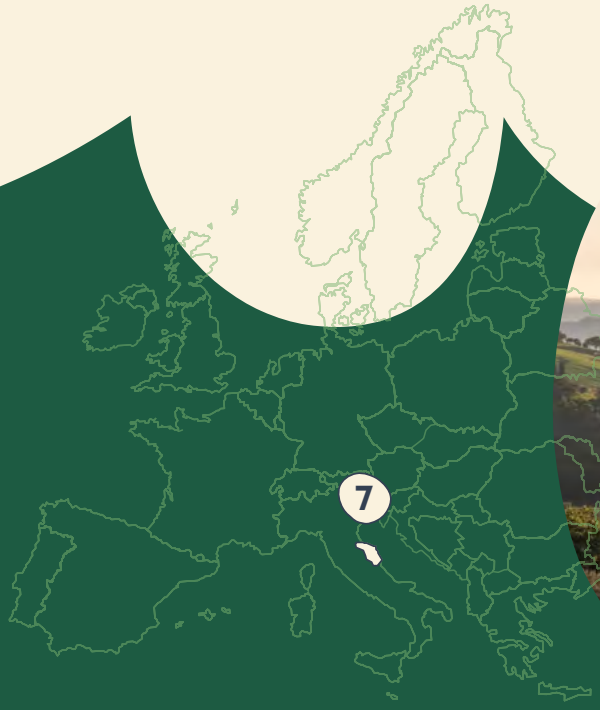
Explore our Latvia Regional Hub



6 Lombardy Region, Italy

Hub geographical area	The Regional Hub will covers the entire Lombardy region.
Mission	• Promote environmental sustainability by fostering cooperation among stakeholders. • Encourage collaboration and networking between actors from different sectors to strengthen shared resources, foster new connections, and create synergies. • Facilitate the exchange of best practices and showcase successful case studies from comparable contexts as models for the region. • Support the bioeconomy transition by raising awareness and promoting innovation in high-value biomass valorisation and bio-based solutions.
Value Chains	• Agri-food sector. • Biomass valorisation into high value-added products.
Economic sectors, clusters involved	• Pharma and cosmetic. • Polymers and textile. • Building and construction. • Food and feed. • Fine and bulk chemicals.
Regional Facilitator	Lombardy Green Chemistry Association

Explore our Lombardy Regional Hub



7 Marche Region, Italy

Hub geographical area

The regional hub focuses on the Marche region.

Mission

- Create a working group composed of qualified stakeholders in the Bioeconomy sector.
- Facilitate collaboration and dialogue between experts in different fields.
- Support the development of Bioeconomy in rural areas through knowledge transfer and dissemination of good practices.
- Ensure that the actors of the Hub continue to work together after the end of the RuralBioUp project.

Value Chains

- Biofertilisers and bioactive compounds.
- Agrivoltaics and bioenergy.
- Hemp and minor crops.

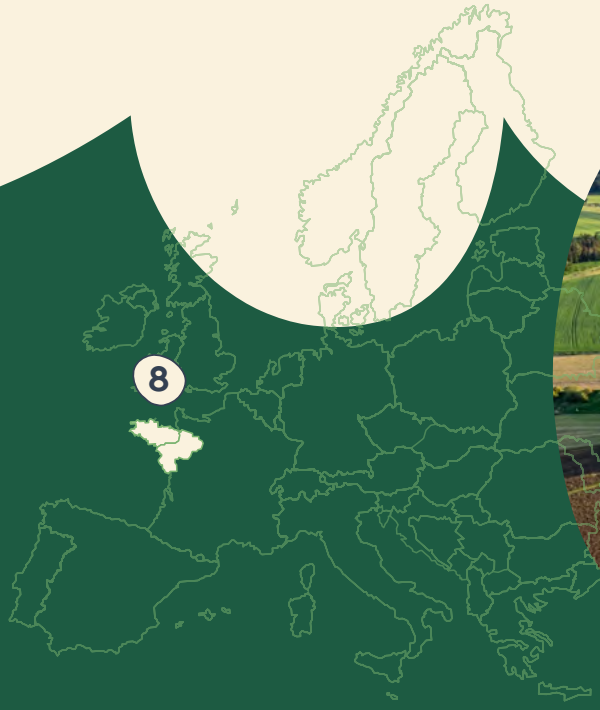
Economic sectors, clusters involved

A synergy between the Marche Region and RuralBioUp is agreed upon among parties with the aim to support the development of coming Operational Groups funded by PEI Agri programme (Measure 16.1 of the ERDF Funding programme – Marche Region 2021-2027)

Regional Facilitator

ITABIA – Italian Biomass Association

Explore our Marche Regional Hub



8 Pays de la Loire & Bretagne Region, France

Hub geographical area

The Regional Hub area is the west part of France.

Mission

- Provide information on bioeconomy and biobased solutions.
- Create a network of local stakeholders in the region.
- Develop collaboration between and within value chains.
- Contribute to capacity building and skills development of local actors.

Value Chains

- Food plant-based by-products.
- Non-food plant-based by-products.

Economic sectors, clusters involved

- Research.
- Institutions.
- Upstream companies.
- Processing companies.
- Distributors.

Regional Facilitator

Vegepolys Valley

Explore our Pays de la Loire & Bretagne Regional Hub

9 Puglia Region, Italy

Hub geographical area

The Regional Hub area is the south of Italy.

Mission

- Establish a permanent Technical Table on the Bioeconomy in Puglia to support regional decision-makers with expert advice.
- Ensure the continuity and legacy of the project by embedding its outcomes into institutional frameworks and stakeholder networks.
- Foster the development of innovative projects within existing Operational Groups, leveraging the activities of the RuralBioUp.

Value Chains

- Biofertilisers and bioactive compounds
- Agrivoltaics and bioenergy.
- Hemp and minor crops.

Economic sectors, clusters involved

- Building Local Connections: The project helped local groups work together, forming partnerships that will continue even after the project is finished.
- Sharing Knowledge: Hundreds of farmers and innovators learned useful new skills at workshops and meetings.
- Guiding New Groups: Our experts advised new local teams, helping them form and develop creative ideas.

Regional Facilitator

SPRING

Explore our Puglia Regional hub

Investing in Involvement: Why Co-Creation creates value

What is co-creation?

Co-creation is a collaborative process in which diverse stakeholders work together to develop solutions, services, strategies, or innovations that reflect shared goals and local realities. In the context of bioeconomy hubs, co-creation means moving beyond consultation to actively involve stakeholders from across sectors business, academia, government, and civil society in shaping the hub's vision, priorities, and activities.

Unlike traditional top-down planning, co-creation values the lived experiences, practical knowledge, and insights of all participants. It fosters mutual learning, trust, and shared ownership, which are essential for building long-term commitment and ensuring that the hub's outcomes are relevant, inclusive, and sustainable.

Key Principles of Co-Creation in Bioeconomy Hubs

- **Inclusiveness:** Engage a diverse mix of stakeholders representing different roles, regions, and interests.
- **Transparency:** Clearly communicate goals, expectations, roles, and decision-making structures.
- **Empowerment:** Give stakeholders real influence, not just a seat at the table.
- **Iterative learning:** Co-creation is not a one-time workshop, but an ongoing, adaptive process with space for reflection, feedback, and adjustment.
- **Shared value creation:** The process should generate benefits for all involved from economic, social, environmental, or knowledge based.

Benefits of Stakeholder Engagement in Bioeconomy Hubs

Co-creation methodologies, which engage stakeholders from the quadruple helix—government, industry, academia, and civil society—offer a dynamic approach to developing context-specific, innovative solutions in regional settings.

This collaborative process enhances innovation capacity, strengthens stakeholder relationships, and can lead to more sustainable and inclusive development.

- **Improved decision-making:** Stakeholders offer contextual and tacit knowledge, increasing relevance and feasibility.
- **Enhanced ownership and buy-in:** Co-design fosters commitment and reduces resistance.
- **Risk detection and resilience:** Early engagement helps to identify hidden challenges and increases adaptability.
- **Enhanced legitimacy:** Inclusive processes build trust, especially when incorporating underrepresented groups.
- **Shared value creation:** Co-production in rural areas enhances social capital and community resilience.

However, implementing co-creation methodologies also presents challenges, including managing power imbalances, aligning conflicting interests, ensuring meaningful participation, and navigating complex coordination across sectors.

From our experience, the greatest challenge lies in keeping stakeholders engaged throughout the process, convincing them to dedicate time despite demanding workloads and tight schedules, and ensuring they receive clear returns on their contributions and tangible personal or organisational benefits.

Co-creation should always be benefit-orientated: co-creation should serve clear benefits rather than being pursued as a goal in itself! It is therefore important to work out the concrete benefits within the framework of your hub and to pursue them consistently.

From Participation to Power: Building Meaningful Co-Creation

One effective way to motivate stakeholder engagement is by granting them genuine decision-making power. According to scholars such as Arnstein (1969) and more recent frameworks of participatory governance, co-creation is most impactful when it moves beyond consultation toward true collaboration or citizen control, where stakeholders influence key decisions. This **redistribution of power** not only fosters a sense of ownership and accountability but also enhances stakeholders' intrinsic motivation, as they see their input shaping outcomes.

Citizen participation in democratic processes requires the **redistribution of power**. Each hub must define how much decision power stakeholders are given in the hub creation process. Who has power when important decisions are taken? Which decisions are top-down or bottom-up (priority topics, goals, KPIs, etc.)? **Be clear about the purpose of participatory approaches** as an essential first step towards **managing expectations** and guiding implementation. You must be **explicit** about who will be involved, and why, when, and how. At all times, all participants should receive **full and clear** information about the aims of research and its likely impacts.

So, you need to define **levels of involvement** of different stakeholders in the hub creation process. Whom do you "only" keep informed along the process, who do you consult, and to whom do you delegate actual decision power? These might all be legitimate steps, but they need to be honest and transparent.

Increasing stakeholder influence on the research

	INFORM	CONSULT	INVOLVE	COLLABORATE	SUPPORT
Promise made to stakeholders by researchers	We will keep you informed.	We will keep you informed, listen to and acknowledge your concerns and aspirations and provide feedback on how your input influenced the research.	We will work with you to ensure your concerns and aspirations are directly reflected in the research and we will provide feedback on how your input influenced the research.	We will include you as an equal partner in designing and conducting the research.	We will provide advice and assistance as requested to help you design and conduct your research.

Figure 2: Stakeholder engagement options (adapted from the i2S Stakeholder Engagement Options Framework, modified from the IAP2 Public Participation Spectrum; Bammer, 2021) **read more**

As previously noted, the diversity of stakeholders in co-creation processes represents both a significant challenge and a great opportunity. The **diversity wheel**, originally developed by Lee Gardenswartz and Anita Rowe, is a practical framework for recognising and managing diversity in teams. It combines five interconnected diversity segments: demographic, cognitive, disciplinary, functional, and institutional diversity. In stakeholder engagement it can be used to design project strategies that account for diverse stakeholder perspectives, ensuring more inclusive participation and more responsive outcomes.

The goal of diversity management in your hub is to create conditions that enable and motivate all stakeholders to realise their full potential. Ask yourself questions such as:

- Which potential stakeholder groups do we address? Which ones are overlooked?
- How can we make sure that all stakeholder groups may contribute equally to the results?
- How can we deal professionally with the numerous individual concerns and needs of our stakeholders?
- How do we create a culture in which people feel comfortable, treat each other with respect, and enjoy working?

As we discuss our diversity goals, this HEAD Wheel model provides an excellent framework for understanding the different dimensions involved, take a look

The **Responsible Research and Innovation (RRI)** approach and guiding principles can also help you to structure co-creation in a way that is both inclusive and responsive to societal challenges. It is a framework that aims to align research and innovation processes with the values, needs, and expectations of society. It emphasises inclusiveness, transparency, anticipation, responsiveness, and reflexivity throughout the innovation lifecycle. The Figure 2 here shows the key elements of the Research & Innovation (R&I) system, the possible key stakeholders involved, and the guiding principles to take into account.

Plan reflection loops and continuous learning

Co-creation is an iterative process that involves continuous learning, feedback, and adaptation. It acknowledges that solutions evolve and improve over time through cycles of ideation, prototyping, testing, and refinement. Be well prepared! Co-creation processes should emphasise continuous learning and evaluation. This involves reflecting on the outcomes, assessing the effectiveness of the process, and using feedback to inform future iterations and improvements.

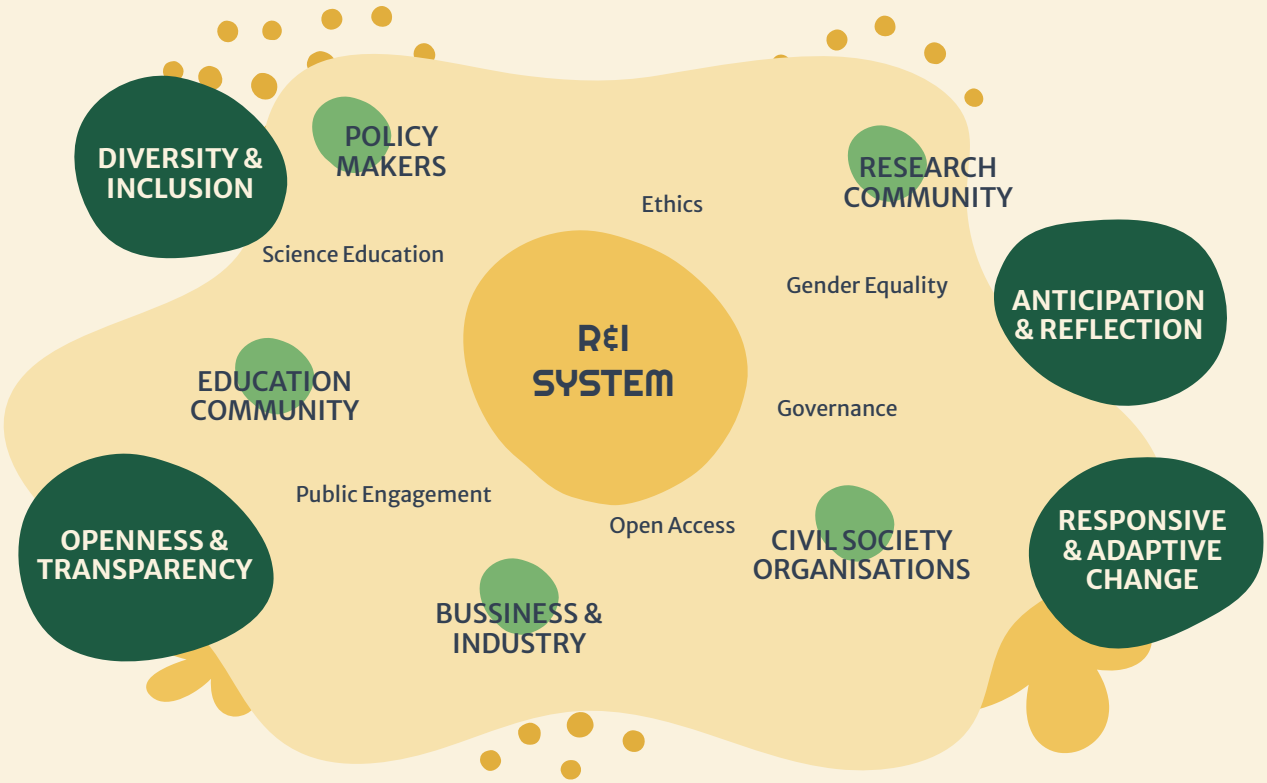


Figure 3: Key elements of the RRI Tools concept (Marschalek, I., Schrammel, M., Unterfrauner, E., & Hofer, M. (2017))

The role of the co-creation facilitator

The facilitator plays a central role in enabling effective and inclusive co-creation processes. As a neutral guide, the facilitator ensures that the process is structured, focused, and responsive to participant needs while fostering a safe and collaborative environment.

Key responsibilities include:

- **Process design:** Facilitators structure the co-creation journey by selecting methods and tools that promote creativity, inclusion, and purposeful interaction.
- **Creating a safe, inclusive space:** Psychological safety is essential. Facilitators build trust by encouraging diverse voices, active participation, and mutual respect.
- **Guiding and moderating:** They manage time, group dynamics, and conflicts to keep discussions on track and outcomes aligned with objectives.
- **Stimulating creativity:** Using creative facilitation techniques, they inspire innovation and help challenge assumptions.
- **Active listening and reflection:** Facilitators listen deeply, ask reflective questions, and support learning by encouraging shared reflection throughout the process.
- **Documentation and iteration:** Capturing key insights and iteratively adjusting the process based on participant feedback ensures relevance and continuous improvement.

Experience in moderation and knowledge of participatory methods such as the Art of Hosting are valuable assets. Ultimately, the facilitator acts as a catalyst for collaboration, ensuring that all stakeholders feel empowered to co-create meaningful and actionable outcomes.

Some Lessons Learned on Co-Creation from RuralBioUp:

Engaging stakeholders in co-creation is a complex yet essential process, particularly in the development of bioeconomy hubs. Given the broad and interdisciplinary nature of the bioeconomy, ensuring the right mix of stakeholders is crucial for driving sustainable solutions and expanding outreach. One of the most significant hurdles is the sheer diversity of stakeholders involved. Their backgrounds, motivations, and constraints vary widely, making **transparency around expectations** a fundamental requirement. Many stakeholders juggle multiple responsibilities, which means that any engagement effort must respect their time and demonstrate tangible value. **Trust** is the cornerstone of successful collaboration. It creates an environment where stakeholders feel valued, ensuring that their participation is meaningful rather than obligatory. A persistent insight from the RuralBioUp hubs is that stakeholder engagement is not a one-time effort, it requires **sustained commitment**. Many stakeholders, particularly farmers, assess their involvement based on the perceived **return on investment** of their time and effort. This underscores the need for a proactive, strategic approach to engagement, one that emphasises early trust-building and the creation of regional working groups to establish a clear sense of purpose and value.

1

Insight 1: Attitudes Matter – Generational Change is a Lever for Innovation
Many rural stakeholders, especially older farmers, were sceptical of bioeconomy practices due to uncertainty, lack of perceived benefit, and time constraints. Yet younger generations showed more openness to long-term, sustainable approaches.

Practical Tip: Foster intergenerational dialogue and emphasising continuity, not disruption. Support hands-on and peer-to-peer formats such as “farmers train farmers” and study visits and highlight tangible benefits withreal-world examples.

2

Insight 2
Tangible Incentives Motivate Engagement
Stakeholders want to know: "What's in it for me?" Without clear benefits, engagement drops. Financial incentives, visibility, networking, and funding insights proved to be effective motivators. Participants are more likely to engage when they clearly understand the benefits and what is expected of them. Confusion about the purpose and outcomes of hub activities can hinder involvement and limit the success of your initiatives.

Practical Tip: Provide a clear outline of the hub's purpose, goals, and expected outcomes early on. Communicate the tangible benefits of participation, such as funding opportunities, visibility, and networking. This clarity will help participants understand the value of their involvement and encourage active engagement in your bioeconomy initiatives.

3

Insight 3
Co-Creation Builds Ownership and Trust
Stakeholders are more committed when they have a say in shaping the hub. Inclusive planning builds trust and encourages long-term involvement.

Practical Tip: Start with co-design workshops to define shared goals. Use participatory methods to ensure all voices are heard, from farmers to researchers.

4

Insight 4
Clear Vision Anchors Participation
Hubs that lacked a well-communicated vision struggled with stakeholder confusion and disengagement. Clear expectations and differentiation from other structures (e.g., clusters) are essential.

Practical Tip: Share a simple overview of the hub's goals, benefits, and activities. Revisit and update this vision collaboratively as the hub evolves.

5

Insight 5
Simplicity and Flexibility Enable Participation
Overly complex tasks, questionnaires, or unclear formats led to disengagement. Stakeholders preferred short, direct, and flexible engagements.

Practical Tip: Personalise communication. Use short emails, offer flexible scheduling, and reduce bureaucracy. Make participation as easy as possible.

Curious about the lessons we learned?
You can find them all in our six fact sheets.

Methods, Toolbox

RRI Tools for different actors:

- **RRI Toolkit:** Prisma project
- **Guide** for science engagement organisation
- **Cards** for fostering RRI conversation
- **Roll and RRI Dice** practical activity
- A practical **guide** to RRI

Further reading:

Brown, J. (2005). The World Café: Shaping Our Futures Through Conversations That Matter. Berrett-Koehler Publishers.

Hansen, H., Ropo, A., & Sauer, E. (2018). "Aesthetic Leadership and the Co-Creation of Meaning." Leadership, 14(2), 151–175. Sanders & Stappers, 2008.

Perry-Smith, J. E., & Mannucci, P. V. (2017). "From Creativity to Innovation: The Social Network Drivers of the Four Phases of the Idea Journey." Academy of Management Review, 42(1), 53–79.

Sanders, E. B. N., & Stappers, P. J. (2008). "Co-creation and the New Landscapes of Design." CoDesign, 4(1), 5–18.

Williams, A., & Brown, T. (2005). "Design Thinking." Harvard Business Review, 83(6), 84–92.

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Gabriele Bammer, Stakeholder engagement: Learning from Arnstein's ladder and the IAP2 spectrum, Integration and Implementation Insights, August 30, 2022, view here.

Gaisch, M., Preymann, S., & Aichinger, R. (2019). Diversity management at the tertiary level: An attempt to extend existing paradigms. Journal of Applied Research in Higher Education, 12(2), 137–150. view here.

Marschalek, I. (2018). Public engagement in responsible research and innovation: A critical reflection from the practitioner's point of view. Südwestdeutscher Verlag für Hochschulschriften.

Marschalek, I., Schrammel, M., Unterfrauner, E., & Hofer, M. (2017). Interactive reflection trainings on RRI for multiple stakeholder groups. Journal of Responsible Innovation, 4(2), 295–311. view here.

A Stepwise Journey - the roadmap to success

STEP 1
Building the foundation of your bioeconomy hub

1.1 Defining your vision

Before you start to engage your stakeholders in your hub it is essential that you know where you start from and clarify what you want to reach. As you start to engage with your stakeholder, you will need to re-negotiate goals and tactics, but you should start the process on a solid basis of evidence and self-reflection.

Be realistic in your expectations and definition of goals!

Ask yourself the following questions:

- **What do we want to achieve?**
- **What do we NOT want?**
- **What are our GOALS?**
- **What are our STRATEGIES to reach our goals?**

Further in the process you will challenge your tactics in the light of the shared vision, which you co-create with your stakeholders in your hub. Tactics are the concrete activities you undertake to make your goals and your vision come to life. You will find your allies and assets, but also your opposers and barriers. Finding the common in the controversies is the duty of the hub manager. A useful tool for aligning the hub's core team is Simon Sinek's Golden Circle method. It begins by clarifying the shared "**why**"—the core purpose driving collective action ("why are we embarking on this journey?"), followed by a joint definition of **how** the hub will operate ("what does the journey look like?") and **what** it will deliver ("where do we want to go, and what will be different once we get there?").

The hub core team thereby develops a foundational understanding of the cause driving the hub and the essence of the process before delving into detailed planning.

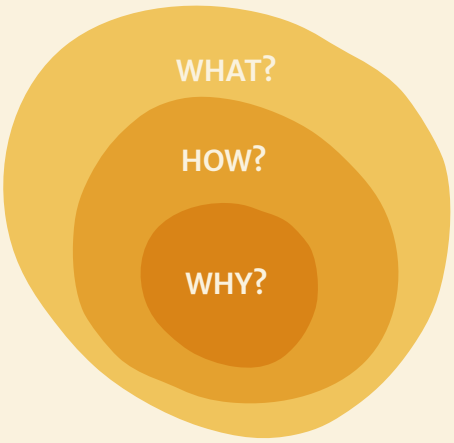

Figure 5: Adapted from Sinek, Simon. Start With Why: How Great Leaders Inspire Everyone to Take Action. New York: Portfolio/Penguin, 2011.

For effective communication with the stakeholders, you want to engage, it is essential to have a clear and compelling change story to tell!

Practical Example from RuralBioUp: In a workshop at the Kick-off Meeting, regional hub managers co-created posters envisioning their "perfect bioeconomy hub."

They reflected on key aspects, defined specific goals, envisioned ideal stakeholder involvement, outlined expected impacts, and formulated a one-sentence vision statement.

1.2 Solid basis of evidence and strategic planning

Base your standards (goals and milestones that you want to reach) on an analysis of the strategic landscape and state-of-the-art of your region. In the end you can measure your results against the initial situation. Look at macro and micro trends and know what happened in the past and why. Economic feasibility, regulatory environment analysis and strategic landscape analysis, tailored for bioeconomy value chains might be part of it.

This may help you to understand dynamics, challenges, and opportunities. Building on what has worked in the past might be very useful. Your strategy does not necessarily need to be innovative, but it needs to be effective. It can be especially valuable to identify existing gaps as these insights can guide the development of targeted actions to address unmet needs ("map & gap" analysis).

Methods that you can apply in this phase are literature review, scenario building, SWOT, PESTLE **analysis** [a framework to evaluate Political, Economic, Social, Technological, Legal, and Environmental factors], good practice analysis, future trends analysis, etc.

Participatory methods such as surveys or stakeholder dialogues can be used to gain insights into the local bioeconomy landscape. Engaging key actors in this way helps to deepen understanding of local dynamics and inform future strategies.

1.3 Develop a Logic Model

A logic model is developed at the beginning of a project to clearly map out the logical connections between resources, activities, outputs, and intended outcomes, ensuring all stakeholders have a shared understanding of how the project will achieve its goals.

There are diverse types of logic models (result chain, logical framework, theory of change, etc.). The idea is **beginning with the "end in mind**," respectively what the future state will look like when the project ends. You can use the logic model as a communication tool with stakeholders and for monitoring goal achievement.

The logic model will help you to define 3-5 strategic objectives!

When you develop your specific goals, you might want to check if they are S.M.A.R.T. - Specific, Measurable, Achievable, Reasonable, Time-bound. We also recommend you to specifically define NON-GOALS, goals that you will not be focusing on immediately.

After creating a logic model for overall project conceptualisation, you should then use dedicated scheduling tools (like Gantt charts) to break activities into appropriate time phases.

Program Action Logic Model (adapted from Eastern Washington University, Office of Grant & Research Development. (n.d.). Logic models. Retrieved 09.25.2025, view here.

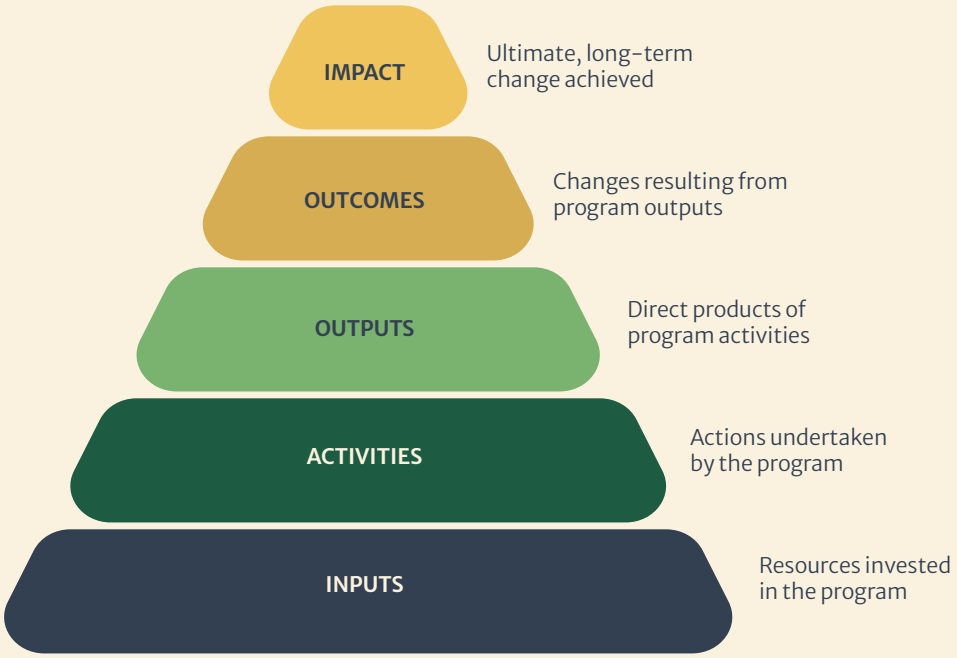

Figure 4: Program Action Logic Model (adapted from Eastern Washington University, Office of Grant & Research Development. (n.d.). Logic models. Retrieved 09.25.2025, from https://inside.ewu.edu/ogrd/proposal-preparation/writing-resources/logic-models/?utm_source=chatgpt.com

1.4 Stakeholder mapping and stakeholder engagement plan

After defining your strategic landscape and formulating a theory of change, the next crucial step is to identify and collaboratively engage stakeholders to co-creating your bioeconomy hub.

Follow the 3Rs:
Right Stakeholder > **WHO?**
Right Message > **WHY and WHAT?**
Right Tools > **HOW?**

Right Stakeholder > WHO?

Ask yourself the following questions:

- **Who are the most important stakeholders for my project along the quadruple helix?**
- **What concerns do they have? What communication measures are needed?**

Finding the right stakeholders is an essential part of any project or initiative. Here are some steps to help you identify and engage with the right stakeholders:

- Define stakeholder roles by linking them directly to project objectives (which stakeholders are most likely to be impacted by or have an impact on the success of the project?).
- Map stakeholders along the quadruple helix – government, academia, industry, civil society.
- Make a stakeholder analysis e.g. via interest-attitude/influence matrices, this ensures focus on critical actors (individuals or groups with decision-making power, access to resources, or the ability to influence public opinion), while compensating power imbalances.

Right Message > WHY and WHAT?

Tailored communication enhances clarity and relevance: Set clear engagement objectives (see chapter '**From Participation to Power: Building Meaningful Co-Creation**'), Understand your audience, including their level of knowledge, expectations, and concerns. Frame co-benefits – highlight social, environmental, economic value to motivate involvement. Use mixed channels (online, offline,..). Test and refine messages in small settings before scaling up.

Stakeholder	Influence	Attitude	Needs, concerns, expectations	Communicartion action
1. ...	small/ medium/ high	- - - / 0 / + + +		
2. ...				
3. ...				

Figure 5 : example of a stakeholder analysis tool

Right Tools > HOW?

There is an abundance of possible tools in co-creation processes. Research tools based on engagement needs – stakeholder type, depth of involvement, feedback mechanisms, etc. Then **evaluate tools for fit**—consider cost, literacy, inclusivity, and technical ability.

Pilot tools, make small-scale tests to improve usability and acceptance. Particularly important is to provide training support for regional facilitators if they are not experienced in doing co-creation activities. Regional facilitators need to know how to identify local stakeholders, run face-to-face and online workshops, use simple language, and adapt methods to different age groups. The training should be able to provide them with the knowledge on how to organise practical visits, build on local networks, and guide different stakeholders toward shared goals.

Online Tools and Resources:
RuralBioUP Handbook "How to build a RuralBioUp Regional Hub"

1.5 Setting up the hub governance structure

Make sure the "concept" of the hub is clear to all involved people. Give clarity on the defining characteristics and fundamental cornerstones of the hub: How does it define itself? How will it work? What is its USP in the region?

Each hub will have its specific structure according to local specificities and needs of stakeholders. A hub in its simplest form consists of committed people who share the same vision – the same "WHY?" – and who meet regularly to contribute to their shared goals. When your vision is in place, agree on a hub governance model.

Questions to consider:

- **Who fits the profile of the hub manager?**
- **What other roles are needed to cover required skills and competences?**
- **Who can give the hub sustainability?**
- **Who can increase visibility of its actions?**
- **Who can increase the impact of its actions?**
- **Which physical and virtual infrastructure will support your activities (demo spaces, collaboration venues, ...)?**
- **How do you organize inter-hub knowledge sharing?**
- **How do you deal with legal matters, such as IPR, data protection, privacy regulations, risk sharing or competition?**

Hub Governance Structure Setup

Define Roles and Responsibility

Decide on Supporting Infrastructure

Clarify Communication and Knowledge Sharing

Agree on Workflow and Decision Making

Further reading:

Stegmann, P., Londo, M., & Junginger, M. (2020). The circular bioeconomy: Its elements and role in European bioeconomy clusters. Resources, Conservation & Recycling: X, 6, 100029. view here.

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McCawley, P. F. (2001). The logic model for program planning and evaluation (CIS 1097). University of Idaho Extension. view here.

Yüksel, I. (2012). Developing a Multi-Criteria Decision Making Model for PESTEL Analysis." International Journal of Business and Social Science, 3(22), 201-210.

STEP 2
Effective communication and outreach strategy

Before initiating any co-creation activities, it is essential to establish a well-planned, professional, and targeted communication and outreach strategy. Clear and engaging information materials are critical to building trust, fostering interest, and securing commitment from stakeholders. Poor or unclear communication can significantly hinder participation and long-term engagement.

At a minimum, you should prepare:

- **Basic information about the bioeconomy:** including what it is, why it matters, and how it is relevant for your region and its various stakeholder groups.
- **Introductory material on the bioeconomy hub:** its objectives, structure, and how stakeholders can get involved.
- **Tailored content for different stakeholder groups:** for example, farmers, students, researchers, policymakers, SMEs, or civil society organisations. Each group may require a different tone, format, or focus.

An online presence from the start is highly recommended. Social media channels or mailing lists can also help reach different audiences and keep them informed.

The materials and messaging should be adapted to stakeholders' expectations, language preferences, and levels of familiarity with the topic. Consider using visual storytelling, infographics, or video formats in addition to written content.

A strong communication foundation sets the tone for meaningful participation and helps build lasting relationships throughout the co-creation process.

Insight 1: Approaches that are direct and rooted in shared interests, utilising established networks, tend to yield the best results.

Insight 2: Collaborating with intermediaries (e.g., agricultural organisations) increases trust towards your bioeconomy activities.

Insight 3: Direct personal interactions, especially proactive field visits, are generally more impactful than emails when engaging locally rooted stakeholders (e.g., farmers).

Insight 4: Emphasis on local development outcomes is a strong motivator for participation.

Further reading:

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Huzzard, T. (2021). Achieving impact: Exploring the challenge of stakeholder engagement. European Journal of Work and Organizational Psychology, 30(3), 379–389.
view here.

Koschmann, M. A., & Kopczynski, J. (2017) Stakeholder Communication. In C. R. Scott, J. R. Barker, T. Kuhn, J. Keyton, P. K. Turner, & L. K. Lewis (Eds.), The International Encyclopedia of Organizational Communication (1st ed., pp. 1–13). Wiley.
view here.

STEP 3
Building the foundation of your bioeconomy hub

Once the foundation is set with a clear vision and hub core team and governance structure in place you want to **move from planning into action**, grounded in co-creation and innovation management practices.

3.1 Develop a Strategic Action Plan

Once the groundwork is laid, it is time to shift from planning to action. This phase should be grounded in **co-creation and innovation management**, ensuring that actions are not only strategic but also locally relevant and feasible.

Design a **co-creation format that fits the specific needs, opportunities, and working culture of your region**. There is no one-size-fits-all solution—what matters is creating a process that is inclusive, practical, and context-sensitive. This could mean a one-day workshop or a series of shorter, iterative workshops; thematic focus groups; bilateral meetings; or even field-based sessions, depending on stakeholder preferences and availability.

The goal is to engage stakeholders meaningfully in defining:

- The hub's **mission, core activities, and target groups.**
- A **clear value proposition** for different actor types (e.g. SMEs, researchers, policymakers, civil society).
- A first set of **service offerings**—such as networking formats, training opportunities, pilot projects, or knowledge exchange mechanisms.

This flexible and locally adapted approach to co-creation helps build **trust, ownership, and long-term engagement**, making it more likely that the resulting Action Plan is both actionable and aligned with real-world regional dynamics.

3.2 Translate workshop outcomes into a strategic roadmap

Roadmaps are visualised strategic plans that describe the journey from the initial situation to desired goals, outcomes, and impacts. It defines your tactics, meaning your concrete activities that make your goals/strategy/vision come to life. It describes major steps, milestones and KPIs, which are needed to reach envisioned goals, and explains – in our case – the relationship between hub activities and its intended effects (results you expect to see for the community). A good strategy does not have to be innovative. It can/should build on what has worked in the past or in other scenarios. Identify potential quick wins to build momentum. Roadmaps can also be used as communication tools for communicating plans to stakeholders or for setting target values in an evaluation process.

3.3 Launch of pilot actions

- Launch small-scale pilot initiatives (e.g., joint workshops, feasibility studies, student projects).
- Ensure pilots are visible, inclusive, and address real needs of the ecosystem.
- Establish an adaptive management framework allowing iteration between steps.

Building a successful bioeconomy hub is not only about strategy and governance—it is about making ideas tangible and engaging for stakeholders. To create momentum and lasting impact, hub managers should combine vision with visible action. Below are some proven approaches that have worked in RuralBioUp hubs and can be adapted to your local context.

1

Show, Do not Just Tell

Action: Study Visits to Demonstrate Innovation.
Bring stakeholders to see bioeconomy in action, in farms, in labs, or inside small enterprises.

How to do it:

- Tailor visits to stakeholder interests (e.g., circular food systems, bio-based products).
- Keep it hands-on and participatory.
- Follow up with reflection and idea-sharing sessions.

2

Co-Create Learning for Local Impact

Action: Co-Designed Training and Capacity Building.
Design workshops based on the real concerns of your local ecosystem, such as regulation, funding, or value chain development.

How to do it:

- Conduct needs assessments through interviews or short surveys.
- Use local language and examples.
- Focus on relevance over theory.

3

Enable Business-to-Business Connection

Action: Matchmaking and sector dialogues facilitate direct exchanges between companies, cooperatives, researchers, and potential funders in focused, small-scale settings.

How to do it:

- Organise short, moderated B2B formats with a clear value chain focus.
- Use facilitation tools to keep conversations productive.
- Document connections and **follow up.**

4

Engage the Public Through Experience

Action: Bioeconomy Showcases and Rural Fairs.
Bring the bioeconomy closer to daily life through exhibits, interactive displays, and public demonstrations.

How to do it:

- Join existing fairs or host local events.
- Combine tech content with stories and products.
- Let people touch, taste, and see the impact.

5

Let Peers Lead the Conversation

Action: Peer Presenters as Trust Builders.
Use relatable local actors; farmers, processors, innovators to tell their story and inspire others.

How to do it:

- Integrate short peer talks into larger events.
- Support speakers with visuals or preparation.
- Celebrate real-world success, not perfection.

Key Strategies for Success

- Ground actions in real needs: Align activities with stakeholder realities, not abstract plans.
- Start small, show results: Launch low-threshold, high-visibility initiatives to build momentum.
- Adapt continuously: Use rapid feedback loops to refine and improve along the way.
- Foster peer exchange: Enable cross-regional and cross-sector learning.

Final Takeaways

- Stakeholder engagement increases when impact is tangible and visible.
- Practical relevance and peer credibility outweigh theoretical frameworks.
- Targeted, visible actions deliver high returns on bioeconomy investment.and cross-sector learning.

Further reading:

Edelenbos, J., & Klijn, E.-H. (2015). Managing stakeholder involvement in decision making: A comparative analysis of six interactive processes in the Netherlands. Journal of Public Administration Research and Theory, 25(2), 519–544.

Soini, K., Mäntysalo, R., & Horlings, L. (2022). Stakeholder participation and resilience in rural social ecological innovation. Frontiers in Sustainable Food Systems, 6, Article 876543.

Wissenburg, M., & Frontiers Climate Consortium. (2025). Enhancing legitimacy through inclusive stakeholder processes in climate action. Frontiers in Climate Action, 2, Article 114.

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Success Case

Demonstrating biobased solutions on the ground through study visits

What was the purpose of the study visits?
Study visits provided participants with the opportunity to showcase examples of biobased solutions on the ground by visiting sites that are implementing these throughout the regions. They allowed stakeholders to discover more about specific biobased solutions and benefits obtained from them. Also, this activity allowed stakeholders to network, exchange best practices and establish collaborations including within value chains.

The Action: Discovering Italy's Bioeconomy was the first study visit of the project which helped set a framework for the other partners to implement. The visit took place in Northern Italy over three days and included visiting the SPRING office in Milan for an introduction to the cluster and the ongoing work in the Italian bioeconomy. The group of 13 Irish stakeholders then travelled to bioeconomy sites in Novara and Turin as well.

Outcomes and impact?
It allowed knowledge exchange among a variety of different stakeholders. It gave an opportunity for stakeholders to cooperate and collaborate on similar value chains and projects. Relevant EU projects and the current state of the bioeconomy in respective regions was discussed. The three-day event was designed to show participants a variety of different companies and organisations with a tour of their facilities to encourage transparent communication between participants and hosts.
Other organisations should replicate study visits as a way to foster and grow their own bioeconomy networks which is vital to promote biobased solutions in their respective regions.

Questions to answer before you start:

- Can you collaborate with another organisation?
- Can you co-locate a study visit?
- Who are the most relevant stakeholders to invite?

Want to learn more?

STEP 4
Co-Create Learning for Local Impact

The EU Bioeconomy Strategy (2018) articulates a long-term vision for a sustainable and circular bioeconomy, placing a strong emphasis on education, training, and skills development as key enablers. To develop training offers, it is essential to collaborate with education and training institutions, labour market actors, and other local stakeholders, and to assess the needs and preferences of learners.

A good way of developing your trainings formats is:

Step 1: Assess local needs – Identify regional gaps in knowledge and skills by analysing local conditions.
Step 2: Co-Design with Users – Ensure training is grounded in real-world challenges and opportunities.
Step 3: Adapt and Improve – Continuously gather feedback and refine learning formats based on experience and stakeholder input.

Here are some further insights for the development of your training activities.

1

Local Adaptation
Why it matters: Locally adapted formats ensure relevance and resonance with regional needs and stakeholder expectations.
How to do it:
- Adjust training content to reflect local bioeconomy conditions (map&gap).
- Engage stakeholders early to validate and localise learning themes.
- Conduct stakeholder consultation to inform learning priorities.

2

Co-Create Learning for Local Impact
Why it matters: Co-created formats increase ownership and relevance, improving participation and learning outcomes.
How to do it:
- Use surveys, interviews, and workshops to assess stakeholder learning needs.
- Involve local actors in planning content, selecting venues, and shaping delivery methods.

3

Tailored, Topic-Specific Training in Local Language
Why it matters: Specific, practical topics are more engaging and applicable; language accessibility broadens reach.
How to do it:
- Offer targeted workshops on funding opportunities, regulation, and business models (or whatever is most interesting to the target group).
- Avoid generic webinars.

Key Strategies for Success

4

Practical and Face-to-Face Learning Formats
Why it matters: Learning by seeing/doing builds stronger understanding and motivation than abstract formats.
How to do it:
- Prioritise study visits, field trips, and site tours.
- Combine presentations with hands-on components.

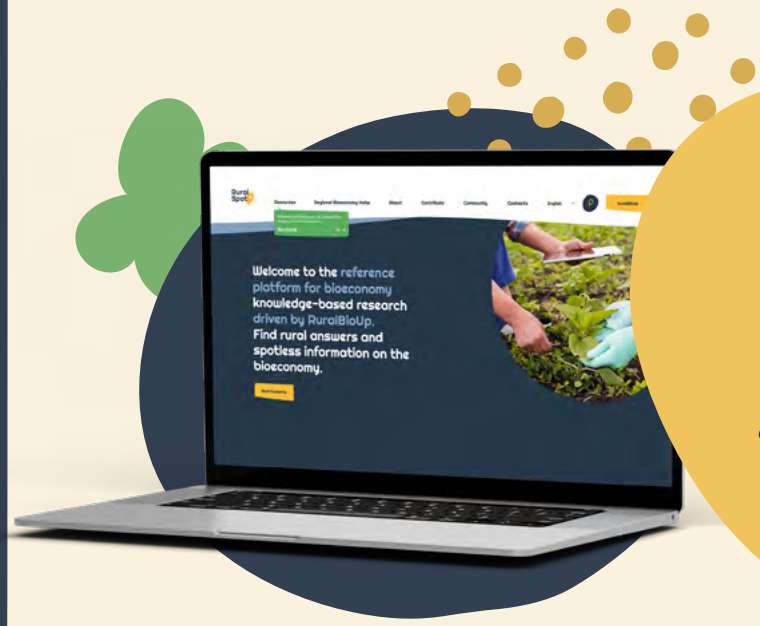
5

Variety of Engagement Formats
Action: Different stakeholders prefer different modes of learning.
Bring the bioeconomy closer to daily life through exhibits, interactive displays, and public demonstrations.
How to do it:
- Use a mix of methods: networking events, conferences, group discussions, online learning sessions,...

- **Mentoring and Coaching Build Capacity:** Regional hubs benefit from structured, ongoing support.
  - Ensure mentoring and training are part of long-term engagement.

- **Transdisciplinary Cooperation is Critical:** Bridging forestry, agriculture, research, policy, and business enhance innovation and sustainability.
  - Design trainings to include and connect actors across value chains.

- **Well-Targeted Trainings Contribute to KPIs:** Stakeholders-specific, demand-driven training leads to better engagement and measurable outcomes.
  - Co-develop curricula based on real-world needs (e.g., laws, funding, by-products).



RuralSpot - Reference platform for bioeconomy knowledge-based research driven by RuralBioUp:

www. ruralspot.eu

Success Case

Bringing the Bioeconomy to Life in Higher Education: How VEGEPOLYS VALLEY Engaged Students Through Real-World Biomass Valorisation Projects

Young generations need to be actively engaged in building the competencies required for a sustainable bioeconomy.

VEGEPOLYS VALLEY – the managing organisation of the French hub - has made higher education a strategic partner in its mission to accelerate sustainable innovation in plant-based industries. By creating opportunities for students to explore biomass valorisation and real-world industrial challenges, the cluster has shown how collaboration between research, education, and business can spark both knowledge and inspiration.

Hybrid Presentation of the bioeconomy & by-products sector to Master's Students
A hybrid session (remote and in-person) was delivered to a group of approximately 15 master's students at SONAS Angers.

The presentation introduced the bioeconomy concept, with a focus on the plant-based sector and the potential of agricultural by-products. Key topics included the constraints associated with biomass recovery and the strategies for overcoming them, with practical insights drawn from the RuralBioUp project. This format enabled interactive discussion and helped contextualise the bioeconomy within real-world cluster dynamics.

Student Supervision Project: Biomass for the Textile Industry
VEGEPOLYS VALLEY also supported a six-month applied research project conducted by four Polytech Clermont engineering students. The project explored the alignment between the needs of the textile industry and the availability of plant-based raw materials, especially within the Auvergne-Rhône-Alpes region. The RuralBioUp project was presented at the outset, offering a framework to understand innovation potential in plant sectors and providing direction for student inquiry.

Presentation to Polytech Clermont Students
To broaden awareness, a dedicated session was delivered to approximately 60 first-year Biological Engineering students at Polytech Clermont. The lecture introduced the role of VEGEPOLYS VALLEY and its key sectors, emphasising value creation from agricultural co-products. Real-world barriers and enabling mechanisms were explored, once again using RuralBioUp as a concrete example of systemic innovation in action.

Reflections and Outcomes
These exchanges have proven highly engaging for students and teaching staff alike. The use of concrete examples from industry and research demonstrates the real-world relevance of the bioeconomy and encourages deeper learning. Educational institutions have expressed strong interest in continuing and expanding this type of collaboration, confirming the value of integrating private-sector expertise into formal education.

Success Factors: What Made This Action Successful, and Why Replicate It?
Close collaboration with teachers and researchers from universities and engineering schools was essential. These links provided a clear understanding of academic programmes and the conditions of student projects, making it easier to identify opportunities for collaboration. This connection enabled companies to propose concrete cases or scientific challenges that students could address through bibliographic research or simple studies. Company visibility and interest in student work were also strengthened through presentations and direct interactions with students.

Further reading:

Wu, J., Yang, Y., Li, Y., & Li, C. (2023).
Co creation in service ecosystems: Integrating stakeholder engagement with value co creation processes. Journal of Service Theory and Practice, 33(2), 157–176.

Methods, Toolbox

- A **guide** for digital co-creation processes
- **Webinars in Bioeconomy**:
- MainstreamBIO project: **Knowledge Centre for Bioeconomy** – European Commission.

Questions to answer before you start:

- **Can you collaborate with another organisation?**
- **Can you co-locate a study visit?**
- **Who are the most relevant stakeholders to invite?**

STEP 5
Developing regional bioeconomy business models

Many rural actors are unaware of the economic value hidden in their bio-resources. Even when ideas exist, support for turning concepts into viable business models is limited. Entrepreneurs need access to networks, funding insights, technical knowledge, and market validation to take the leap. Bridging this gap is key to making bioeconomy both real and profitable.

1

Understand Your Region

Why it matters: Bioeconomy business models only succeed when they match local conditions; biomass types, cultural identity, market access, and regulatory realities.

How to do it:

- Map local bio-resources and by-products.
- Identify key sectors and value chain gaps.
- Talk to local producers, cooperatives, and consumers.

Strategic instruments: Use feasibility studies, stakeholder interviews, and value chain mapping.

2

Adapt, Do not Copy

Why it matters: Replicating successful concepts from other regions without adjusting them often fails. Instead, focus on **adaptation to local supply chains and constraints.**

How to do it:

- Select proven concepts (e.g. bio-based packaging, composting).
- Adapt them to local materials, infrastructure, and demand.
- Engage SMEs early to co-design and test ideas.

Strategic instruments: Business mentoring, local partner matching, testbeds.

3

Make Innovation Visible

Why it matters: Public awareness and trust drive demand. Stakeholders support what they can understand and experience.

How to do it:

- Host product showcases and live demos.
- Participate in fairs, community events, and media outreach.
- Use storytelling to communicate real-life benefits.

Good practice: Involve farmers and artisans in showing off new products and explaining their use.

4

Start Small, Think Circular

Why it matters: Innovation does not need to be high-tech or large-scale to have value. Simple, local solutions can open up entire value chains.

How to do it:

- Support low-risk, small-scale pilots (e.g. turning plant waste into cosmetics).
- Highlight grassroots innovation already happening.
- Document and share results widely.

Goal: Build confidence through early, visible wins.

5

Connect to Ecosystems

Why it matters: Entrepreneurs need access to capital, networks, buyers, and peer support. Hubs are ideal facilitators.

How to do it:

- Organise matchmaking events and roundtables.
- Create a local "bioeconomy directory" of funders, labs, mentors, and test facilities.
- Collaborate with local authorities to align funding and support.

Support mechanism: Include innovation financing in hub strategy (e.g. CAP, Interreg, private capital).

6

Scale with Purpose

Why it matters: Bioeconomy models scale best when they are tied to long-term regional strategies and policy frameworks.

How to do it:

- Integrate business model development into regional bioeconomy action plans.
- Align with sustainability goals (e.g. Green Deal, circular economy, rural resilience).
- Support ongoing evaluation and iteration.

Outcome: A business model that lasts beyond the pilot and generates regional impact.

Final Takeaways

- Bioeconomy innovation works best when it is visible, local, and co-created.
- Small steps build trust—early pilots create momentum.
- Supporting entrepreneurs is key to unlocking circular value chains and rural growth.

Further reading:

Gatto, F., & Re, I. (2021). Circular Bioeconomy Business Models to Overcome the Valley of Death. A Systematic Statistical Analysis of Studies and Projects in Emerging Bio-Based Technologies and Trends Linked to the SME Instrument Support. Sustainability, 13(4), 1899 view here.

Balzarotti M., Re I., Bosco D. Towards a circular bioeconomy for the Lombardy Region. Industrial case studies for biopolymers production, Consorzio Italbiotec 2019

STEP 6
Ensure long-term sustainability

Ensuring Long-Term Sustainability ...
a collaborative endeavour.

Sustainability is not an afterthought but an integral element that should be considered from the outset, with ongoing stakeholder involvement.

1

Secure the Future with Smart Funding
Action: Explore Diverse Funding Avenues.
How to do it:
- Map existing funding programs (e.g. Horizon Europe, regional development funds).
- Engage with funding agencies early to align proposals with their goals.
- Collaborate with experienced partners for joint applications.
- Keep a calendar of relevant funding calls and deadlines.

2

Make the Hub Part of the Bigger Picture
Action: Integrate with Regional Development Plans.
How to do it:
- Analyse current regional strategies (e.g. RIS3, circular economy plans).
- Identify overlapping goals and align hub actions accordingly.
- Engage regional planners and policymakers as co-creators, not just stakeholders.
- Position the hub as a tool for implementing existing policy goals.

3

Grow Together, Not Alone
Action: Foster Strong Partnerships.
How to do it:
- Map key stakeholders across sectors and interests.
- Organise regular roundtables or stakeholder forums.
- Use collaboration tools (e.g. shared project spaces, MoUs) to formalise partnerships.
- Co-create initiatives to build mutual investment.

4

Give the Hub a Backbone
Action: Consider Formalising the Hub Structure.
How to do it:
- Explore different models (e.g. association, cooperative, foundation).
- Assess legal and administrative requirements.
- Involve key stakeholders in the decision-making.
- Start informally and evolve as the hub matures.

5

Turn Local Actors into Local Leaders
Action: Build Capacity within the Region.
How to do it:
- Identify local skills gaps and training needs.
- Offer tailored workshops and mentoring.
- Promote peer learning and knowledge exchange.
- Celebrate local success stories to boost motivation.

6

Work Smarter Through Collaboration
Action: Leverage Synergies with Other Initiatives.
How to do it:

- Identify active projects with shared goals.
- Attend cross-project meetings and matchmaking events.
- Exchange resources (e.g. data, methods, contacts).
- Submit joint proposals when goals align.

7

Shape the Rules that Shape You
Action: Advocate for Supportive Policies.
How to do it:

- Build relationships with policymakers and advisory bodies.
- Provide data and stories that show impact.
- Organise policy dialogues or site visits with decision-makers.
- Join or form advocacy coalitions at regional and national levels.

Further reading:

BioRural Project: Toolkit – Business model footprints.

Success Case

BIOEAST HUB CZ Charles Spa Regional HUB - Sustaining Impact Beyond the Project

The **BIOEAST HUB CZ Charles Spa Regional HUB** is a flagship example of how regional initiatives can achieve lasting impact in the bioeconomy. Emerging as a regional branch of the nationally established **BIOEAST HUB CZ**, it has benefited from strong institutional credibility, access to top-level expertise, and a wide-reaching network of stakeholders. This solid foundation has enabled the HUB to successfully translate national strategies into locally tailored solutions.

What sets the HUB apart is its ability to **sustain momentum beyond the RuralBioUp project.** Thanks to well-embedded sustainability mechanisms, the hub continues to act as a driving force for **education, innovation, and collaboration**. Strategic partnerships with research institutions and industries ensure ongoing knowledge exchange and development.

At the same time, high-profile activities such as **bioeconomy conferences, technology showcases, and community dialogues** build awareness, strengthen regional engagement, and inspire new collaborations.

By combining **national alignment with regional action**, the Charles Spa Regional hub demonstrates a powerful model for creating enduring impact. Its success proves that with the right structure, partnerships, and vision, regional hubs can continue to thrive long after project funding ends, offering a blueprint for other regions across Europe.

STEP 7
Evaluation, optimisation, and scaling

A quick step by step guide to plan and implement the evaluation of your hub activities.

To stay on track and assess what works during implementation, it is essential to establish a monitoring and evaluation (M&E) system from the start.

A key lesson from the RuralBioUp project is that setting up a bioeconomy hub should always include a well-structured, realistic evaluation aligned with available resources and stakeholder capacities.

Without it, tracking progress, measuring impact, or making informed adjustments becomes difficult. Clear indicators enable timely adaptations and support outcome and impact assessment later.

There is no one-size-fits-all approach to evaluation. Depending on your goals, context, and stakeholders, the design can vary significantly. In this chapter, we provide a practical, step-by-step guide to designing an accompanying evaluation. This guide is based on recognised standards for evaluations in the field of research policy by the fteval Platform, the Austrian Platform for Research and Technology Policy Evaluation and draws on best practices from the RuralBioUp experience.

The approach outlined here is intended to be adaptable. You are encouraged to tailor the methods and tools presented to your specific hub context, taking into account your objectives, stakeholders, and available capacities. A good evaluation is not only a reporting tool but also a learning instrument that helps your hub evolve and succeed over time.

Step 1: Evaluation Questions – What are the intended effects?

The first step in the evaluation process is to clarify the **intended effect**s and translate them into **evaluation questions**.

The evaluation aims to assess whether and how specific objectives have been achieved, and what contribution the evaluated measures have made to these goals.

The desired effects typically relate to the quality, efficiency (input vs output), effectiveness (project aims vs outcomes), and appropriateness of a programme, measure, or intervention (societal objectives vs impact). Evaluation questions should therefore examine:

- To what extent defined target objectives were achieved.
- Whether the evaluated activity contributed to solving the underlying societal, economic, or technological challenges.
- Which intended and unintended effects occurred as a result of the intervention.
- How well processes and implementation structures functioned.
- How efficient the intervention was in terms of resource use.

The evaluation questions are directly linked to the intervention logic (see chapter 'Solid basis of evidence and strategic planning – logic model'), which defines the causal assumptions between inputs, activities, outputs, and impacts. This ensures that evaluation questions are aligned with the project's theory of change.

Furthermore, evaluation questions can be tailored to distinct phases of a programme cycle:

- **Ex-ante evaluations** focus on relevance and expected impacts.
- **Mid-term evaluations** assess implementation and interim results.
- **Ex-post evaluations** examine achieved impacts and sustainability.

Step 2: Developing Indicators – How can I see whether the desired effects are achieved?
Each evaluation question should be operationalised through one or more indicators. Indicators should be simple, observable, and relevant. For instance, if a hub aims to foster cross-sectoral dialogue, a suitable indicator might be the number and diversity of participants in hub events. If policy influence is a goal, the number of references to the hub in strategy documents might serve as an indicator.

Checklist for good indicators (adapted from SKala-CAMPUS, 2022):

- ✓ Each objective or evaluation question is linked to at least one indicator.
- ✓ The (quantitative) indicators meet the SMART criteria.
- ✓ The different dimensions of a goal are covered by corresponding indicators.
- ✓ There are no multiple indicators measuring the same thing.
- ✓ Target values are assigned to the indicators (where possible and meaningful).
- ✓ Stakeholders were involved in developing the indicators (where possible and meaningful).

Step 3: Defining Measurement Units – Measurable units for the indicators
Each indicator should then be linked to a specific measurement unit that allows for its observation or quantification. In most cases, this can be done using simple metrics such as counts, proportions, or qualitative assessments. Surveys, meeting records, event logs, and documentation reviews can be used as data sources.

For example, satisfaction can be measured via a short annual stakeholder survey asking participants to rate the quality and usefulness of activities. Collaborative outputs can be tracked through documentation of co-funded projects, working groups, or signed memoranda of understanding.

Step 4: Setting Baselines and Targets
To assess progress, it is helpful to compare current values with a starting point (baseline) and define realistic targets for the future. If no data exists yet, a qualitative baseline can be established (e.g., "currently no collaboration activities in place"). Targets should be proportionate to the hub's scope and maturity. For new hubs, even small gains (e.g. expanding from five to ten stakeholders or launching a first policy brief) can represent meaningful progress.

Step 5: Evaluation Methods
Depending on the indicators and metrics used, the challenges then lie in the methods or the availability of data.

You might want to design a mixed methods approach which combines quantitative and qualitative data to provide a more comprehensive and nuanced understanding of your project's processes, outcomes, and impacts.

Key qualitative evaluation methods:

- Document analysis.
- Expert interviews and focus groups.
- Case studies.

Key quantitative evaluation methods:

- **Online surveys.**
- **Analysis of funding data and monitoring data.**
- **Secondary statistical analyses.**

Of course, many other evaluation methods – input-output analysis, social network analysis, benchmarking,... – do exist.

The Matrixes underneath can help you to plan your evaluation methods.

A thorough estimation of the required effort is essential to assess the feasibility of an evaluation.
Ethical considerations in evaluation
Adhere to ethical standards. This includes ensuring transparency not only in procedures and data handling, but also in the communication of results. Ethical practice also demands impartiality and respect for all participants, alongside responsible data management.

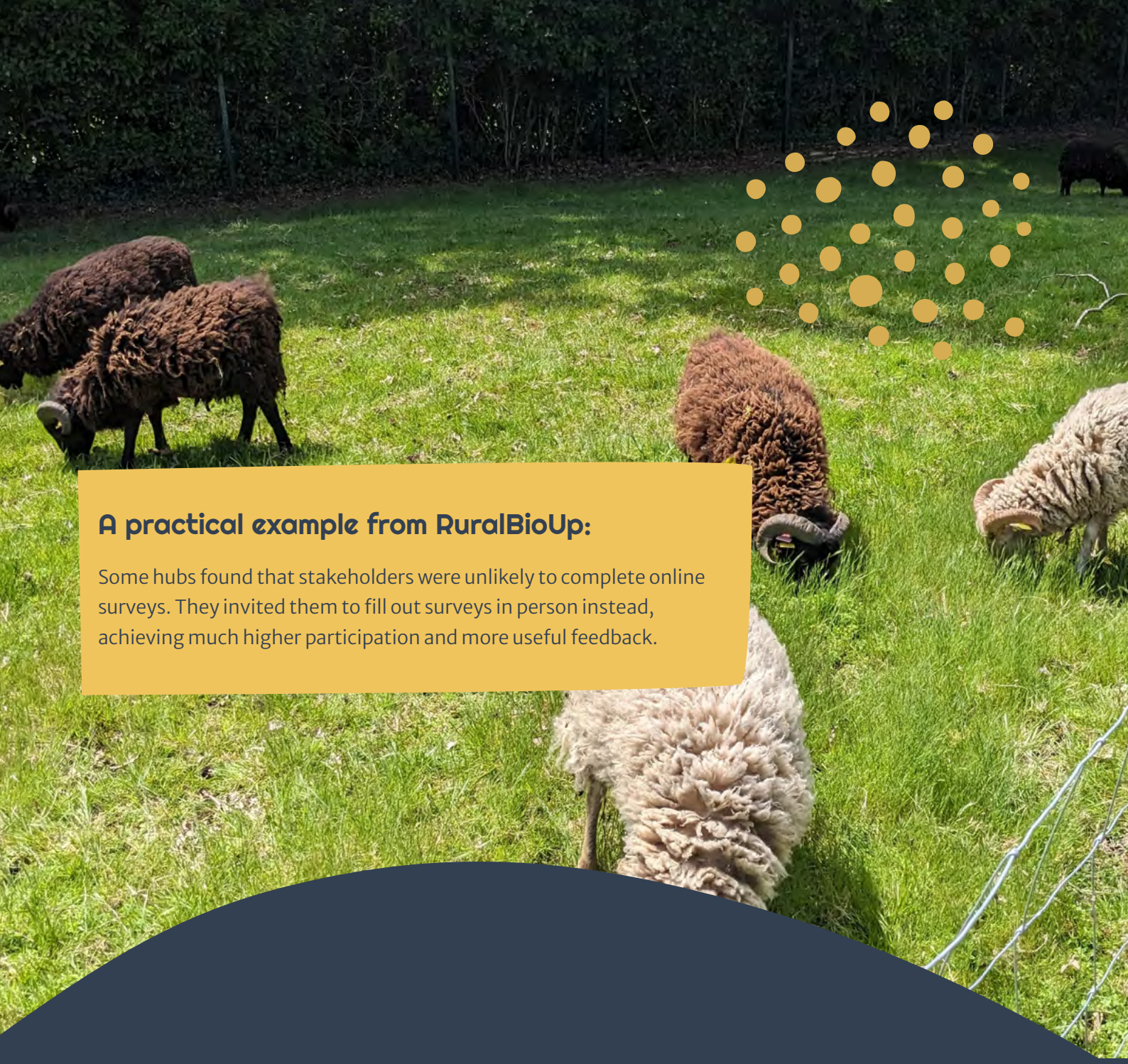
It is recommended to have your evaluation practice reviewed for potential biases by critical peers or external reviewers. Constructive feedback from impartial colleagues can help identify blind spots and strengthen the credibility and fairness of the evaluation.

Evaluation question	Output	Criteria	Indicator	Measurment / Method
	x			
		x	xx	
				x

Figure 6: Matrix Indicators / Methods

	Method 1	Method 2	Method 3	Method 4
Evaluation question	x			
Evaluation question		x	xx	
Evaluation question				x

Figure 7: Matrix Questions / Methods



A practical example from RuralBioUp:

Some hubs found that stakeholders were unlikely to complete online surveys. They invited them to fill out surveys in person instead, achieving much higher participation and more useful feedback.

Online Resources and Tools

- Celik, D., Caneva, S., Ma, C., & Zaror, Y. (n.d.). **Handbook of social innovation in rural bioeconomies**

References:

SKala CAMPUS. (2022). Wirkungs Indikatoren entwickeln: Wofür Wirkungs Indikatoren gut sind und was ihr beachten solltet. SKala Campus. Retrieved July 30, 2025
view here.

RuralBioUp

Grow local, go global

Our Consortium

APRE – Agenzia per la Promozione della Ricerca Europea

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SPRING – Italian Circular Bioeconomy Cluster

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VEGEPOLYS VALLEY – International Plant Cluster

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Want to Learn More?

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