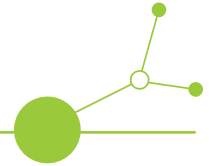


A1.3 Transnational testing of intersectoral cooperation procedures

BIOECO-UP

D.1.3.3 Intersectoral cooperation procedures for bioeconomy value chain design



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Bioeconomy Cluster

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1. Introduction

The bioeconomy plays a central role in the transition towards a more sustainable, circular and climate-neutral economy in Europe. By valorising renewable biological resources and transforming them into food, feed, materials, chemicals and energy, bioeconomy value chains contribute to resource efficiency, waste reduction, rural development and innovation. At the same time, bioeconomy systems are inherently complex and cross-sectoral, as biological resources, by-products and waste streams typically originate in one sector and are processed, upgraded or utilised in another. As a result, effective intersectoral cooperation is a prerequisite for the successful design and implementation of bioeconomy value chains.

Despite its strong potential, intersectoral cooperation in the bioeconomy remains challenging. Actors from agriculture, food processing, forestry, bioenergy, water management, biobased materials and biochemistry often operate in silos, face different regulatory frameworks, market conditions and innovation cultures, and lack structured mechanisms for collaboration. Small and medium-sized enterprises, farmers and local innovators may struggle to identify suitable partners, navigate regulatory requirements or assess the economic and sustainability potential of new bio-based value chains. These challenges highlight the need for clear, practical and transferable procedures that support cooperation across sectors and guide stakeholders through the process of value chain creation.

Deliverable D1.3.3 ‘Intersectoral cooperation procedures for bioeconomy value chain design’ addresses this need by providing a final, validated and user-oriented set of procedures for designing cross-sectoral bioeconomy value chains. The deliverable builds on project deliverables and outputs elaborated within WP1 Circular bioeconomy cross-sector value chains, specifically the deliverable D1.2.1 Draft procedures for bioeconomy intersectoral cooperation and deliverable D1.3.1 Report on transnational testing of intersectoral cooperation procedures. Insights gained through practical application in multiple national contexts were systematically analysed and used to refine, improve and finalise the procedures presented in this document.

The procedures presented in this deliverable are structured around three interlinked dimensions. First, they address why intersectoral cooperation is needed by analysing the systemic nature of bioeconomy value chains, identifying common barriers and challenges and highlighting key lessons learned from stakeholder engagement. Second, they explain how bioeconomy value chains can be designed by introducing a clear, step-by-step methodological framework based on the DDIA approach (Diagnose, Design, Implement, Assess). This framework supports stakeholders in



understanding local bioeconomy potential, designing viable value chains, testing cooperation in practice and assessing sustainability and scaling potential. Third, the deliverable demonstrates how the procedures work in practice by drawing on results from transnational testing, including pilot value chains, hypothetical cross-border concepts and feedback from project partners and stakeholders.

The scope of Deliverable D1.3.3 covers a broad range of bioeconomy sectors, including agroecology, bioenergy, food, forestry, water, biobased materials and biochemistry. The procedures are designed to be applicable at local and regional levels, while also supporting transnational cooperation and scaling where conditions allow. The primary target users of this deliverable are bioeconomy support institutions, industry clusters, innovation agencies, chambers of commerce, agricultural advisory services and other organisations that facilitate cooperation and value chain development. In addition, the procedures are relevant for small and medium-sized enterprises (SMEs), farmers, cooperatives, researchers and public authorities seeking to engage in or support intersectoral bioeconomy initiatives.

To enhance practical uptake, the procedures are complemented by a toolbox containing templates, canvases and supporting instruments, which are included in the annex of this document. Furthermore, the deliverable situates the procedures within the broader bioeconomy ecosystem by highlighting the role of events, platforms, alliances and working groups as enablers of cooperation, knowledge exchange and long-term sustainability beyond the project duration.

By combining strategic context, structured methodological approach and evidence from practical testing, Deliverable D1.3.3 aims to support the development of sustainable and replicable bioeconomy value chains. It provides a common framework that can be adapted to diverse regional conditions while maintaining coherence at the transnational level, thereby contributing to the wider uptake of intersectoral cooperation in the European bioeconomy.

This document draws on the collective experiences and insights gained from stakeholders from seven European countries: Croatia, Czech Republic, Hungary, Italy, Poland, Slovenia and Slovakia. These countries have provided valuable input based on their unique contexts, challenges and successes regarding intersectoral cooperation within the bioeconomy.



2. Intersectoral Cooperation in Bioeconomy Value Chains

2.1. Intersectoral Nature of Bioeconomy Value Chains

Bioeconomy value chains are inherently intersectoral, as they are based on the mobilisation, transformation and valorisation of biological resources that typically cross sectoral boundaries. Primary biomass and bio-based resources are often generated in agriculture, forestry or fisheries, while their processing, upgrading and commercialisation may take place in the food industry, bioenergy sector, chemical industry, construction sector or other manufacturing domains. In many cases, the most promising bioeconomy opportunities emerge from the utilisation of by-products, residues and waste streams, which further reinforces the need for cooperation between sectors that are not traditionally connected.

Bioeconomy value chains frequently follow circular or cascading logics, where resources are used sequentially in multiple applications in order to maximise their value and minimise waste. For example, agricultural residues can be converted into bio-based materials, energy or soil improvers, while food processing by-products can serve as inputs for biochemicals, feed or functional ingredients. Designing such value chains requires coordinated decision-making across sectors, alignment of production and processing capacities and shared understanding of quality requirements, logistics and market demand.

As a result, the development of bioeconomy value chains cannot be effectively addressed within isolated sectoral strategies. Instead, it requires integrated approaches that bring together actors from different sectors, research and innovation systems, public authorities and civil society. Intersectoral cooperation is therefore not an optional add-on, but a structural condition for unlocking the full potential of the bioeconomy.

2.2. Added Value of Intersectoral Cooperation for Bioeconomy Development

Intersectoral cooperation creates added value at multiple levels of bioeconomy development. At the economic level, cooperation enables actors to access new raw materials, technologies and markets, reduce production costs through resource efficiency and create innovative products with higher added value. By connecting resource producers with processors and end-users, cooperation helps to stabilise supply chains and improve the commercial viability of bio-based solutions.

From an environmental perspective, intersectoral cooperation supports circular economy principles by enabling the valorisation of underutilised biomass, residues and waste streams. This



contributes to reduced landfilling, lower greenhouse gas emissions and more efficient use of natural resources. Coordinated value chain design also facilitates the substitution of fossil-based inputs with renewable, bio-based alternatives, thereby supporting climate and environmental objectives at local, regional and European levels.

Social benefits of intersectoral cooperation include the creation of new jobs, particularly in rural and peripheral areas, diversification of income sources for farmers and small enterprises, and strengthening of regional innovation ecosystems. Cooperation across sectors can also increase social acceptance of bioeconomy solutions by involving a broader range of stakeholders, including consumers and local communities, and by addressing concerns related to sustainability, land use and environmental impacts.

2.3. The Role of Stakeholder Diversity and the Quadruple Helix

Effective intersectoral cooperation in the bioeconomy depends on the active involvement of diverse stakeholder groups, each contributing specific knowledge, resources and perspectives. The quadruple helix model, which brings together business, research and education, public authorities and civil society, provides a useful framework for understanding and structuring this diversity.

Businesses and primary producers play a central role in supplying biomass, developing products and bringing innovations to market. Research and education organisations contribute technological know-how, innovation capacity and analytical tools for assessing feasibility and sustainability. Public authorities shape the regulatory environment, provide policy support and can facilitate cooperation through funding instruments and strategic frameworks. Civil society actors, including consumers, non-governmental organisations and local communities, influence market acceptance and help ensure that bioeconomy developments align with societal values and sustainability expectations.

Experience from previous project activities has shown that early and inclusive engagement of these stakeholder groups is critical for building trust, aligning objectives and avoiding conflicts at later stages of value chain development. Structured cooperation formats and clear procedures are therefore needed to manage stakeholder diversity effectively and to translate it into concrete value chain solutions.

2.4. Need for Structured Cooperation Approaches

While the benefits of intersectoral cooperation are widely recognised, many bioeconomy initiatives struggle to move from ideas to implementation due to a lack of structured approaches.



Actors often rely on informal networks, ad hoc contacts or isolated project-based collaborations, which may be insufficient for addressing the complexity of bioeconomy value chains. Common challenges include difficulties in identifying suitable partners, unclear distribution of roles and responsibilities, misaligned expectations and limited capacity to assess economic and sustainability impacts.

These challenges are particularly pronounced for small and medium-sized enterprises, farmers and local innovators, who may lack the resources or experience to initiate and manage complex cooperation processes. Without clear guidance, promising opportunities for bio-based value creation may remain unrealised or fail at early stages.

This underlines the importance of developing practical, step-by-step procedures that support stakeholders throughout the entire value chain design process. Such procedures should help users to understand their local bioeconomy context, identify and engage relevant partners, design viable value chains, test cooperation in practice and assess results in a systematic way. The following chapters build on this rationale by first analysing key barriers and lessons learned and subsequently presenting the final intersectoral cooperation procedures based on the DDIA framework.

3. Barriers, Challenges and Lessons Learned for Intersectoral Bioeconomy Cooperation

3.1. Common Barriers across Sectors

Despite the recognised potential of the bioeconomy and the growing policy support at European and national levels, the practical development of intersectoral bioeconomy value chains is frequently hindered by a range of structural and operational barriers. These barriers tend to occur across sectors and regions, affecting both early-stage initiatives and more advanced bio-based business models.

One of the most frequently encountered barriers is related to regulatory complexity. Bioeconomy value chains often involve materials that fall into grey zones between waste, by-product and secondary raw material classifications. Divergent interpretations of regulations at national and regional levels can create uncertainty, increase administrative burden and delay or prevent implementation. The compliance with food safety, environmental, chemical and product standards further adds to this complexity, particularly when value chains cross sectoral or national boundaries.



Fragmentation of actors and information represents another significant challenge. Bioeconomy stakeholders are often dispersed across sectors and regions, with limited awareness of each other's activities, capacities and needs. Information on biomass availability, processing technologies, market demand and regulatory requirements is frequently fragmented or not easily accessible, making it difficult to identify viable cooperation opportunities.

Infrastructure and logistics constraints also play a critical role. Many bio-based resources are bulky, perishable or seasonally available, which requires appropriate storage, transport and pre-processing solutions. Inadequate infrastructure or long transport distances can undermine the economic and environmental performance of value chains, particularly at small and medium scales.

In addition, market-related barriers remain obvious. Uncertainty regarding demand for bio-based products, price competitiveness compared to fossil-based alternatives and limited access to finance for pilot and scale-up phases can discourage investment and cooperation. These challenges are often compounded by limited experience in business modelling and market analysis among early-stage bioeconomy actors.

Finally, skills and capacity gaps affect the ability of stakeholders to engage in intersectoral cooperation. Designing and managing bioeconomy value chains requires not only technical expertise, but also skills in facilitation, stakeholder engagement, sustainability assessment and project management. Such competencies are not always readily available, especially in rural areas and among small organisations.

3.2. Challenges Specific to Stakeholder Groups

In addition to cross-cutting barriers, different stakeholder groups face specific challenges that influence their ability to participate in intersectoral bioeconomy cooperation.

Primary producers and farmers often have limited time and financial resources to explore new cooperation opportunities beyond their core activities. While they may generate valuable biomass, residues or by-products, they may lack information about potential applications, processing requirements or market opportunities. Concerns about long-term commitment, price stability and contractual arrangements can further limit their willingness to engage in new value chains.

Small and medium-sized enterprises and processors frequently operate under tight margins and face capacity constraints that limit their ability to invest in innovation and experimentation. For SMEs, the risks associated with developing new bio-based products, complying with regulatory



requirements and scaling up production can be significant. Access to finance, technical support and suitable partners is therefore a critical issue.

Research and innovation organisations contribute essential knowledge and technological solutions but may encounter challenges in aligning research objectives with market needs and timelines. Differences in language, expectations and incentives between researchers and businesses can hinder effective cooperation if not properly managed.

Public authorities and support institutions play a key role in shaping the enabling environment, yet they often face institutional silos and fragmented responsibilities across policy domains such as agriculture, environment, industry and innovation. Limited coordination can reduce the effectiveness of support measures and complicate the implementation of integrated bioeconomy strategies at regional level.

3.3. Lessons Learned from Stakeholder Engagement and Round Tables

Experience from stakeholder engagement activities and round tables conducted during earlier project phases has generated valuable lessons for designing effective intersectoral cooperation procedures.

A key lesson is the importance of early and inclusive engagement. Involving relevant stakeholders from the very beginning helps to identify realistic opportunities, build trust and avoid misalignment of expectations. Early engagement also allows potential regulatory, technical or market-related obstacles to be identified and addressed before significant resources are invested.

Another important lesson concerns the need for clear communication and common objectives. Intersectoral cooperation brings together actors with different backgrounds, terminologies and priorities. Clearly defined goals, transparent communication and shared understanding of roles and responsibilities are essential for maintaining commitment and momentum throughout the value chain design process.

Flexibility and adaptability have also emerged as critical success factors. Bioeconomy initiatives often operate in dynamic environments characterised by evolving regulations, market conditions and technological developments. Cooperation procedures must therefore allow for iteration, learning and adjustment rather than rigid, linear planning.

Finally, stakeholders highlighted the value of building on existing initiatives and networks. Leveraging established relationships, clusters, platforms and regional strategies can reduce



transaction costs, accelerate cooperation and increase the likelihood of long-term sustainability. Rather than starting from scratch, effective intersectoral cooperation often builds on and connects existing activities in new ways.

3.4. Implications for the Design of Cooperation Procedures

The barriers, challenges and lessons identified above underline the need for structured, yet flexible procedures that support stakeholders throughout the bioeconomy value chain design process. Such procedures must be capable of addressing regulatory uncertainty, stakeholder diversity and resource constraints, while remaining accessible to actors with varying levels of experience and capacity.

In response to these needs, the project developed and refined a step-by-step methodological framework based on the DDIA approach (Diagnose, Design, Implement, Assess). This framework translates the identified lessons into practical guidance, supporting users in understanding their local bioeconomy context, designing viable intersectoral value chains, testing cooperation in practice and assessing outcomes in a systematic manner. The following chapter presents the final intersectoral cooperation procedures and explains how the DDIA framework can be applied in practice.

4. Intersectoral Cooperation Procedures based on the DDIA Framework

4.1. Overview of the DDIA Approach

The intersectoral cooperation procedures presented in this document are based on the DDIA framework, which consists of four interconnected steps: Diagnose, Design, Implement and Assess.

The DDIA framework provides a clear, logical and practical structure that guides stakeholders from the initial understanding of the local bioeconomy context through to the evaluation of value chain performance and scaling potential. It was developed to support intersectoral cooperation by addressing the complexity of bioeconomy, stakeholder diversity and sustainability requirements. Importantly, the framework is designed to be flexible and adaptable, allowing users to tailor the depth and scope of activities to their specific context, resources and objectives.

The procedures presented in this chapter represent the final, refined version of the methodology. They build on the initial draft procedures and incorporate insights gained through transnational testing in seven EU countries: Croatia, Czech Republic, Hungary, Italy, Poland, Slovenia and



Slovakia. Feedback from project partners and stakeholders was used to improve clarity, usability and applicability, particularly for small and medium-sized enterprises, farmers and regional support institutions. The DDIA framework thus serves both as a practical guide for value chain creation and as a common reporting and learning tool, facilitating comparability and knowledge exchange across regions.

4.2. Step 1: Diagnose - Understanding the Environment for Bioeconomy Value Chain Creation

The objective of the Diagnose step is to build a comprehensive understanding of the local or regional context in which bioeconomy value chain is to be developed. This step enables facilitators and stakeholders to identify opportunities and constraints at an early stage and to focus efforts on the most promising and feasible value chain options.

Key activities of 'Diagnosis' include:

1. **Collection of data on local bioeconomy resources.** This involves identifying available biological resources, residues and by-products, as well as their quantities and seasonal availability. The relevance of these resources should be assessed from environmental, economic and social perspectives, including their suitability as inputs for bio-based products.
2. **Assessment of skills, infrastructure and market conditions.** The analysis should cover existing skills and capacities required for resource production and processing, availability of infrastructure such as storage, transport and processing facilities and current market conditions for both raw materials and potential bio-based products.
3. **Identification of potential stakeholders.** Relevant actors along the value chain should be mapped, including producers, processors, technology providers, distributors, end-users, research organisations and public authorities. Understanding their needs, capabilities and interests is essential for effective cooperation.
4. **Identification of gaps.** Based on the collected information, missing links in existing or potential value chains should be analysed, with particular attention to:
 - Resource gaps (assess raw material availability and gaps in the supply chain)
 - Infrastructure gaps (examine transportation, storage and processing capacities)



- Skill gaps (evaluate the workforce's capacity and training needs)
- Technology needs (identify opportunities for innovation, digitalization or automation)

5. **Identification of opportunities for value chain creation.** Drawing on the previous analyses, opportunities for creating or strengthening bioeconomy value chains should be identified and prioritised. Priority should be given to sectors and applications where local resources or expertise offer a competitive advantage and where alignment with regional development strategies, including Smart Specialisation Strategy, can be ensured.

Experience from testing confirmed that while the Diagnose step can be resource-intensive, it is critical for reducing risks at later stages and for focusing cooperation on realistic and impactful value chain concepts.

4.3. Step 2: Design - Designing Bioeconomy Value Chains

The second step translates diagnostic findings into specific value chain concept. Its objective is to define how the identified resources, stakeholders and processes can be combined into a viable and sustainable bioeconomy value chain.

Key activities of 'Desing' include:

1. **Stakeholder engagement planning.** A structured plan for engaging relevant stakeholders should be developed, ensuring inclusive participation and effective communication. Engagement methods may include interviews, discussions, meetings, telephone inquiries and desk research, depending on the context and resources available.
2. **Market analysis.** Such analysis is essential for assessing demand, competition and potential barriers to entry for bio-based products. This includes analysing current and projected demand, identifying competing products and market players and considering pricing strategies that reflect production costs and consumer willingness to pay.
3. **Value chain design.** The flow of bio-based resources from production through processing, logistics and sales should be mapped and described. This includes defining roles and responsibilities of stakeholders, assessing technology options, optimising processes and ensuring product quality and compliance with relevant standards.



Testing showed that this step benefits from close interaction between technical, market and regulatory perspectives, and that iterative refinement is often necessary to align value chain design with practical constraints and opportunities.

4.4. Step 3: Implement - Testing Intersectoral Bioeconomy Value Chains

Objective of this step is to test the bioeconomy value chain. Implementation generally begins with pilot projects that test the feasibility of the designed business model. These pilot projects are crucial, as they serve as initial trails for the business strategies and value chains developed in the design phase. They allow testing in real-world settings, identifying potential risks, providing valuable data and insights that can inform larger-scale implementation. Pilot projects should be carefully planned and monitored, with clear objectives, timelines and metrics for success. They should also be designed to be adaptable, allowing for real-time adjustments based on feedback, market changes or unforeseen challenges.

Within the implementation step, the partners proposed (theoretically described) practical connection between two business stakeholders, the one who is producer of primary bio-based material (or bio-based waste material) and another who is producer of bioeconomy product with higher added value using primary bio-based material. The level of technology or the scale of the stakeholder did not matter here. The focus could have been on large corporations with complex production, small enterprise or single person entrepreneurs.

Experience from the testing confirmed that pilot implementation plays a crucial role in building trust among partners and translating conceptual designs into actionable cooperation.

4.5. Step 4: Asses - Ensuring Continuous Improvement

The final step of the DDIA framework aims to evaluate the outcomes of the value chain design and testing process. Assessment serves both to determine the viability of the specific value chain and to generate feedback for continuous improvement of the procedures.

Key activities of 'Assessment' include:

1. **Assessment of procedure of value chain creation.** Users assess the usefulness, clarity, practicality of the procedures and supporting tools, identifying which elements were most beneficial and which may require adjustment. This includes reflection on challenges encountered when applying the DDIA framework.



2. **Assessment of sustainability aspects of value chain creation.** Economic, environmental and social impacts of value chain are evaluated, including value creation, resource efficiency, environmental benefits and social effects such as job creation and regional development.
3. **Assessment of transnational aspects of value chain creation.** The potential for replicating or scaling the value chain across regions or borders is considered, taking into account resource availability, logistics, regulatory conditions and market opportunities.

This assessment step ensures that intersectoral cooperation does not end with pilot implementation, but contributes to learning, replication and long-term impact.

5. Validation of Intersectoral Cooperation Procedures through Transnational Testing

5.1. Methodological Approach to Testing

The intersectoral cooperation procedures presented in this deliverable were validated through transnational testing carried out by project partners in seven countries. The testing phase aimed to assess the applicability, usability and effectiveness of the DDIA-based procedures in diverse national, sectoral and institutional contexts, while also identifying areas for refinement and improvement.

The methodological approach was fully aligned with the DDIA framework described in Chapter 4. Project partners applied the four steps – Diagnose, Design, Implement and Assess – at national level, using common guidance and reporting templates developed within the project. This ensured a harmonised approach across countries, while allowing flexibility to adapt the procedures to local bioeconomy conditions, stakeholder landscapes and policy environments.

The testing built on data and insights generated in earlier project activities, including mapping of bioeconomy potential and stakeholder engagement. Partners acted as facilitators of intersectoral cooperation, engaging relevant business stakeholders, research organisations and support institutions. The testing phase was designed not only to generate pilot value chains, but also to function as a learning process, providing structured feedback on the strengths and limitations of the procedures themselves.



5.2. Overview and Key Insights from the Testing Phase at National Level

As part of the testing phase, seven pilot bioeconomy value chains were developed and assessed at national level. These pilots covered a wide range of sectors, resource types and innovation models, demonstrating the adaptability of the intersectoral cooperation procedures across different bioeconomy contexts.

Insight Box 1: Practical Scope of National-Level Testing

The national testing focused on the design and pilot-scale validation of small-scale bioeconomy value chains based on locally available bio-based resources and side streams. The tested value chains included, among others:

- *valorisation of agricultural and livestock residues (e.g. sheep wool, crop-related by-products) into organic fertilisers and soil-enhancing products*
- *upcycling of food and beverage processing by-products, such as brewers' spent grain, bakery residues, fish processing waste and fruit pomace, into higher-value food ingredients, fertilisers or functional materials*
- *development of bio-based materials, including hemp-based insulation, bio-resins and fibre-based products for construction, packaging and horticultural applications*
- *cascading use of biomass, where a single raw material stream was processed into multiple outputs with increasing added value, maximising resource efficiency.*

Across all pilots, value chains typically linked primary producers or processors of bio-based raw materials or waste streams with actors transforming these inputs into higher value bio-based products. The pilots ranged from simple bilateral cooperation models to more complex multi-actor value chains, reflecting different levels of technological maturity and organisational complexity.

Across all national contexts, the testing confirmed that the DDIA-based intersectoral cooperation procedures provide a logical and intuitive structure for guiding stakeholders from opportunity identification to concrete value chain concepts. Partners reported that the clear sequencing of steps helped structure discussions, manage expectations and maintain focus throughout the cooperation process.



While the overall logic of the procedures proved robust, the testing phase also highlighted differences in how individual steps were perceived and applied, depending on stakeholder capacity, data availability and maturity of the local bioeconomy ecosystem.

The **Diagnose step** was identified as influential phase for the success of value chain design. Comprehensive mapping of available bioeconomy resources, stakeholder roles and existing gaps helps avoid unrealistic concepts and focus on value chains grounded in local strengths. At the same time, the step is perceived as resource-intensive, particularly in regions where baseline data on bioeconomy potential is fragmented or not readily accessible. This highlights the importance of facilitation capacity and access to pre-existing regional data sources.

During the **Design phase**, stakeholder engagement plays a central role in identifying viable cooperation models. The procedures support early dialogue between actors from different sectors, enabling clarification of technical requirements, constraints and market expectations before moving towards implementation. This is particularly valuable in cases involving the valorisation of by-products, where differing perceptions of material value and risk often exist between producers and processors.

The testing (**Implement phase**) further demonstrated that the procedures are suitable for different scales of operation. While some pilot value chains approached market-ready solutions, others focused on proof-of-concept or early-stage innovation. In both cases, the procedures provided sufficient flexibility to accommodate varying ambition levels without compromising methodological coherence.

Insight Box 2: Practical Testing without Full-Scale Implementation

The Implement step shows that meaningful validation of intersectoral cooperation can be achieved even without full industrial deployment. Theoretical or pilot-scale testing allowed partners to identify technical bottlenecks, logistical constraints and cooperation challenges early on, generating valuable learning at relatively low risk. This confirms the usefulness of the procedures for early-stage value chain exploration and strategic decision-making.

A recurring cross-cutting issue identified during testing was regulatory complexity, particularly regarding the classification of materials as waste or by-products and compliance with sector-specific standards. While regulatory analysis was not the primary focus of the procedures, partners emphasised that early consideration of regulatory frameworks is essential for ensuring the feasibility of designed value chains.



Across described pilots, regulatory requirements were frequently identified as factors that can delay or limit implementation, especially in food, feed and fertiliser-related value chains. The testing highlighted the need to integrate basic regulatory screening into the design phase, even when value chains are developed at a conceptual level.

The **Assess step** enabled partners to reflect not only on the sustainability performance of the value chains, but also on the usability of the procedures themselves. Overall, the procedures were considered easy to follow and adaptable, even for small-scale initiatives and SMEs. At the same time, partners noted that some analytical elements may be demanding for actors with limited experience or resources, suggesting that simplified entry points could further enhance accessibility.

From a sustainability perspective, the value chains (theoretically) demonstrated positive environmental impacts through improved resource efficiency, waste reduction and substitution of fossil-based inputs. Economic benefits were most evident where feedstocks were locally available and underutilised, while social benefits included diversification of rural income sources, local job creation and increased awareness of circular bioeconomy practices.

Finally, the testing phase confirmed the relevance of the procedures for exploring transnational cooperation. While physical cross-border transport of raw materials is often constrained by logistics and cost, the procedures proved particularly valuable for identifying opportunities for knowledge exchange, technology transfer and replication of value chain concepts in different regional contexts.

6. Sustainability and Transnational Value Chain Potential

This chapter synthesises the broader sustainability impacts and transnational potential of the bioeconomy value chains designed and proposed through the intersectoral cooperation procedures. While the testing phase focused on national-level validation, the results demonstrate clear contributions to economic, environmental and social sustainability, as well as strong potential for replication and scaling across borders.

6.1. Sustainability Impacts of Designed Value Chains

The sustainability assessment conducted during the testing phase confirms that the designed value chains contribute positively to all three pillars of sustainability.



From an economic perspective, the tested value chains demonstrate strong potential to create new revenue streams by valorising underutilised or low-value bio-based resources and side streams. Several pilots showed that materials previously considered waste can become economically viable inputs when integrated into well-designed value chains. Local availability of feedstock emerged as a key factor for economic viability, as it reduces input costs and logistical complexity.

Insight Box 3: Economic Value from Underutilized Resources

Across pilots, economic sustainability was strongest where value chains were based on locally available, low-cost feedstocks such as agricultural residues, food processing by-products or industrial side streams. By transforming these into higher value bio-based products, the procedures supported diversification of income sources and improved resilience of local bioeconomy actors.

Furthermore, all tested value chains demonstrated positive environmental impacts, primarily through improved resource efficiency and waste reduction. The valorisation of by-products and residues contributes directly to circular economy principles by extending material life cycles.

In addition, social sustainability impacts can be observed at local level. The designed value chains can support rural development by creating local jobs, strengthening cooperation between small producers and processors and increasing awareness of sustainable bioeconomy practices.

Insight Box 4: Contribution to EU Sustainability Goals and SDGs

Overall, the tested value chains align with key EU policy objectives, including the European Green Deal, the Circular Economy Action Plan and the Farm to Fork Strategy. At global level, they contribute to several Sustainable Development Goals, particularly SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action) and SDG 8 (Decent Work and Economic Growth).

6.2. Transnational Value Chain Design and Scaling

The testing phase explored also the potential for transnational bioeconomy value chain development. Transnational value chain design is most promising where similar bio-based resources are available in multiple regions, or where complementary capacities exist across



borders. In such cases, cooperation can help achieve critical mass, reduce development costs and accelerate market uptake.

Insight Box 5: Transnational Cooperation Beyond Material Flows

The pilots illustrate that transnational value chains are often more viable when focused on sharing know-how, technologies and business models, rather than transporting bulky or perishable biomass across borders. Licensing, replication and regional adaptation emerged as particularly effective cooperation models.

Regulatory frameworks also play a decisive role. Differences in national regulations regarding waste classification, product standards and certification can complicate cross-border cooperation. Early regulatory screening and alignment with EU-level standards were identified as critical enablers for transnational scaling.

Market considerations, including demand for sustainable bio-based products and willingness to pay, further influence the feasibility of transnational value chains. The procedures encourage early market analysis to ensure that scaling efforts are aligned with real market opportunities.

Knowledge transfer and technology licensing emerged as particularly promising mechanisms for scaling value chains transnationally. Technologies developed or tested in one country could be replicated in another region with similar resource availability, reducing development time and risk.

The DDIA-based procedures support this approach by documenting value chain logic, stakeholder roles and key assumptions in a structured manner, facilitating transferability and adaptation.



6.3. Hypothetical Transnational Value Chains

After national pilots were completed in seven countries, further focus was on the transnational potential. Project partners explored the transnational dimension by developing five hypothetical transnational value chains, combining national pilots into cross-border concepts. The objective was to test the feasibility and potential benefits of these concepts at a theoretical level before any potential piloting in the future.

The formulation of five hypothetical transnational value chains was based on gathered data and identification of potential cross-border synergies (matching a by-product from one country with processing or market opportunity in another). This resulted in the formulation of five hypothetical transnational value chains, whereby for each case, the main stakeholders, resource and process flows, expected products, potential markets and preliminary assessment of technical feasibility, economic/financial viability, environmental impact and social benefits were described. The individual hypothetical transnational value chains are described in deliverable D1.3.1 Report on transnational testing of intersectoral cooperation procedures.



Insight Box 6: Selected Transnational Success Cases

The selected success cases demonstrated how complementary national value chains can be combined into coherent transnational concepts. Both cases showed high potential for replacing fossil-based products, creating new markets for bio-based materials and supporting regional bioeconomy development through scalable, replicable solutions.

Bio-Coated Apple-Cellulose Packaging

The combination of Italian and Slovenian pilot cases scored highly because it links complementary technologies (apple-based cellulose production and tomato-derived bioresin coating) to produce compostable packaging with improved barrier properties. The concept is technically mature, as both components have already been tested at pilot scale and the integration requires only moderate process adjustments. The environmental benefit lies in replacing fossil-based plastic coatings, leading to measurable reductions in packaging-related CO₂ emissions. Economically, the case would address a growing EU market for sustainable food packaging, which is expected to grow by more than 5% annually under the Single-Use Plastics Directive and packaging waste regulations.

Next steps could include joint prototyping to harmonise the coating application process, testing barrier properties according to the EU food safety standards and exploring opportunities for regional pilot launches with SMEs in the food sector.

Hemp-Wool Horticultural Mats

The combination of Czech and Croatian pilot cases pairs two abundant, low-value fibrous side streams into an innovative horticultural product with direct application in agriculture and landscaping. The technical process involves mechanical blending, pressing and natural drying, which can be scaled with relatively low capital cost. The mats offer agronomic benefits by retaining moisture, suppressing weeds and naturally decomposing, thus improving soil health. From an environmental perspective, the mats would replace synthetic plastic mulch films, avoiding microplastic pollution and reducing waste disposal costs. The concept also contributes to soil health restoration, aligning with the EU Soil Strategy for 2030. Economically, the concept can create local jobs in fibre processing and open new revenue streams for sheep farmers and hemp growers.

Further steps could involve producing pilot batches for field trials in vineyards and orchards, collecting farmer feedback and engaging distributors of horticultural supplies to explore commercialization pathways.



7. Enabling Ecosystems for Intersectoral Bioeconomy Cooperation

7.1. Role of Bioeconomy Events, Platforms and Alliances in Value Chain Development

7.1.1. Bioeconomy Events as Matchmaking Spaces

Bioeconomy-related events, such as conferences, workshops and brokerage events, play a key role in facilitating intersectoral cooperation. They provide spaces for matchmaking between stakeholders, validation of ideas and dissemination of good practices. At European and international levels, well established annual events help align strategies, disseminate best practices, showcase innovations and connect stakeholders across sectors and countries. Participation in such initiatives enables stakeholders to stay informed about policy developments, funding opportunities and emerging market trends, while also facilitating the creation of collaborative projects and bio-based value chains.

The overview below presents a selection of major events that are particularly relevant for strengthening intersectoral cooperation in the bioeconomy. Most of the listed events are organised on an annual basis and are presented in chronological order, with dates indicated where available.

- **BIO360 Europe**
 - **Dates:** 11-12 February 2026
 - **Location:** Nantes, France
 - **Details:** BIO360 Europe is a major international exhibition and conference covering the full bioeconomy value chain, including bioenergy, bio-based materials, biochemical products, circular economy solutions, and CO2 removals. It is strongly business-oriented, with technology showcases.

- **BIOKET 2026**
 - **Dates:** 17-19 March 2026
 - **Location:** Fribourg (Granges-Paccot), Switzerland
 - **Details:** BIOKET is an annual international conference and exhibition focused on Key Enabling Technologies (KETs) and innovations applied to biomass valorization. It provides a platform for professionals, researchers, and industry leaders to share knowledge on advanced technologies that convert biomass into high-value products, foster sustainable practices, and build global partnerships



- **CBE JU Stakeholder Forum 2026**
 - **Date:** 24 March 2026
 - **Location:** The Square, Brussels, Belgium
 - **Details:** Hosted by the Circular Bio-based Europe Joint Undertaking ([CBE JU](#)), this forum will focus on "Driving Impact - Bio-based innovation for a competitive, sustainable Europe" and explore how to scale up bio-based innovations, support market uptake, ensure better access to finance, create green jobs and ultimately drive sustainable economic growth.

- **Annual BIOEAST Bioeconomy Conference**
 - **Typical Dates:** 22-23 April 2026
 - **Location:** Zadar, Croatia
 - **Details:** Organized under the BIOEAST Initiative, this conference brings together stakeholders from across the Central and Eastern European (CEE) macro-region and beyond to discuss and refine regional research and innovation priorities for the bioeconomy, identify strategic gaps, and foster collaboration among policymakers, researchers, industry and civil society. Participants will hear about BOOST4BIOEAST project progress and discuss new horizons for the BIOEAST Initiative. They will have opportunity to gain firsthand knowledge on the status of national bioeconomy action plans and their alignment with the renewed EU Bioeconomy Strategy, to engage with Thematic Working Groups and network.

- **European Biomass Conference and Exhibition (EUBCE 2026)**
 - **Dates:** 19-22 May 2026
 - **Location:** The Hague, Netherlands
 - **Details:** This is the world's leading annual event/platform dedicated to biomass research, technologies, and industries, bringing together over 1,500 experts from academia, industry, and policymaking to explore the latest developments in biomass, bioenergy and the circular bioeconomy.



- **SCAR Bioeconomy & R&I Events**
 - **Typical Dates:** June annually
 - **Location:** varies
 - **Details:** The Standing Committee on Agricultural Research (SCAR) organizes conferences and workshops examining research and innovation cooperation in sustainable food systems, digital and green transformation of agri-food sectors, and bioeconomy development. These events bring together Member State representatives, policymakers, scientists and broader stakeholders to explore best practices and strategic directions.

- **ICABR Conference 2026 (30th Annual Conference)**
 - **Dates:** 7-10 July 2026
 - **Location:** Ravello, Italy
 - **Details:** The 30th International Consortium on Applied Bioeconomy Research (ICABR) Conference explores “The Bioeconomy Transformation in Transition,” covering past successes, current challenges, and future prospects in bioeconomy innovation, policy, and research. The event attracts global experts to exchange cutting-edge insights and shape discourse on biotechnology, agriculture, and sustainable development.

- **EUSDR Annual Forum (2026)**
 - **Dates:** Expected autumn 2026 (exact dates TBC)
 - **Location:** Rotating host country within the Danube Region (TBC)
 - **Details:** The EUSDR Annual Forum is the flagship event of the EU Strategy for the Danube Region. It brings together policy makers, regional and local authorities, and other stakeholders to discuss the EU Strategy for the Danube Region (EUSDR) progress and shape the Strategy’s future in the Danube macro-region.

- **World Agri-Tech Innovation Summit (2026)**
 - **Dates:** 22-23 September 2026
 - **Location:** London, United Kingdom
 - **Details:** The World Agri-Tech Innovation Summit is a high-level event bringing together agribusiness leaders, agri-food corporations, start-ups, investors, and



policy experts to explore agri-tech innovation, sustainable food systems, and climate-smart agriculture.

- **International Forum on Industrial Biotechnology and Bioeconomy (IFIB 2026)**
 - **Dates:** 1-2 October 2026
 - **Location:** Rome, Italy
 - **Details:** IFIB is a well-established international forum focused on industrial biotechnology and bioeconomy, bringing together key global stakeholders to discuss and showcase the latest developments in the emerging economy based on renewable biological resources. The forum also provides valuable networking opportunities, featuring B2B meetings between startups, companies, universities, and public and private research centres.

- **Global Bioeconomy Summit (GBS 2026)**
 - **Dates:** 20-21 October 2026
 - **Location:** The Convention Centre, Dublin, Ireland
 - **Details:** The summit series began in 2015 and has since become the flagship international gathering for the bioeconomy. It is recognized as a leading global forum for bioeconomy policy, innovation, and cross-sector collaboration, the Global Bioeconomy Summit brings together political leaders, policy makers, industry leaders, researchers, investors, and civil society globally to accelerate sustainable, bio-based innovation and solutions.

- **Annual Biocontrol Industry Meeting (ABIM 2026)**
 - **Dates:** 20-22 October 2026
 - **Location:** Basel, Switzerland
 - **Details:** ABIM is the leading global event for the biocontrol industry, focusing on biological plant protection, biopesticides, and sustainable agriculture. It convenes industry leaders, regulators, researchers, and innovators from around the world.



- **ECOMONDO - The Green Technology Expo (2026)**
 - **Dates:** 3-6 November 2026
 - **Location:** Rimini, Italy
 - **Details:** ECOMONDO is one of Europe's largest trade fairs dedicated to green technologies, circular economy, waste management, bioenergy, water, and sustainable agriculture. It attracts a wide range of public authorities, companies, and research organisations. The 29th edition promises to exceed all expectations with a program full of innovations, visionary projects, and unmissable opportunities for companies, start-ups, researchers, innovators, and policymakers. The event also includes workshops and panel discussions.

- **Pitch Perfect and Boost the European Bioeconomy (2026)**
 - **Dates:** 30 November - 1 December 2026
 - **Location:** Brussels, Belgium (or hybrid)
 - **Details:** The 'Pitch Perfect and Boost the European Bioeconomy' event is a two day event of intense cross-border and cross-sectoral pitching, matchmaking and networking, with the aim to link industry to innovative (biobased) technologies, innovators to investors and to create new partnerships for the future and the further development of innovative, cross-border and cross-sectoral industrial value chains in the biobased economy.

- **ECCP - Clusters Meet Regions**
 - **Dates:** Multiple editions throughout 2026 (TBC)
 - **Location:** Various EU regions
 - **Details:** Clusters Meet Regions is an EU initiative under the European Cluster Collaboration Platform (ECCP). The events connect clusters and policymakers at the local, regional, and national levels, to strengthen regional value chains, including bioeconomy, circular economy, and green transition priorities.



7.1.2. Bioeconomy Platforms and Alliances as Knowledge and Cooperation Hubs

Digital platforms and collaborative alliances serve as central hubs for knowledge sharing, partner search and dissemination of tools and resources across the bioeconomy. By linking actors across regions and sectors, these platforms support replication of value chain concepts and enable strategic matchmaking and coordination at European and global levels. They also help to mobilise projects and funding opportunities and sustain long-term ecosystems for innovation and investment in bio-based solutions.

The overview below presents selected platforms and alliances that are essential in strengthening intersectoral cooperation and advancing sustainable bioeconomy systems.

- **Bio-based Industries Consortium (BIC)**
 - **Link:** <https://biconsortium.eu/>
 - **Details:** The Bio-based Industries Consortium is a major European industry-led non-profit association representing actors across the full bio-based value chain. BIC aims to position Europe's bio-based industries as leaders in a sustainable, circular bioeconomy by facilitating innovation, investment, networking and market uptake of bio-based products and solutions. BIC has a large membership of industry players, SMEs, research organisations and technology providers, and actively participates in the Circular Bio-based Europe Joint Undertaking (CBE JU), a key public-private partnership for funding and scaling bioeconomy innovations in Europe.

- **CEE Bioeconomy Stakeholder Forum**
 - **Link:** Currently, CEE Bioeconomy Stakeholder Forum communicates via BIOECO-UP project webpage (<https://www.interreg-central.eu/projects/bioeco-up/>). After project closure, the Forum will be integrated under the umbrella of BIOEAST and the BIOEAST HUBs Coordination Body will be responsible for the future coordination of CEE Bioeconomy Stakeholder Forum.
 - **Details:** The Central and Eastern European (CEE) Bioeconomy Stakeholder Forum aims to serve as a key platform for fostering transnational cooperation, facilitating the development of bioeconomy value chains and enhancing the market integration of bio-based products across the macro-region. The Forum brings together the BIOECO-UP countries and the BIOEAST countries by coordinating the exchange of bioeconomy-related information and project outcomes. The Forum supports



bioeconomy stakeholders by providing a space for knowledge sharing, discussion of emerging trends and identification of opportunities for the development of sustainable, cross-sectoral bioeconomy value chains.

- **Circular Bioeconomy Alliance (CBA)**

- **Link:** <https://circularbioeconomyalliance.org/>
- **Details:** The Circular Bioeconomy Alliance is a multi-stakeholder platform that aims to accelerate the global transition to a nature-centric circular bioeconomy. It brings together diverse partners, including scientists, investors, community groups and institutions, to develop pilot projects, living labs and knowledge resources that demonstrate scalable, sustainable bioeconomy systems. The alliance emphasises systemic transformation, inclusive partnerships and cross-sector alignment to rethink how biological resources are used and managed across local and international contexts.

- **European Bioeconomy Alliance (EUBA)**

- **Link:** <https://www.bioeconomyalliance.eu/>
- **Details:** The European Bioeconomy Alliance is a cross-sector coalition of prominent European organisations representing agriculture, forestry, bioplastics, renewable energy, processing industries and other sectors active in the bioeconomy. EUBA's mission is to mainstream the bioeconomy in EU policy, raise awareness among decision-makers and stakeholders, and advocate for policy coherence and investment frameworks that support the transition to a circular and resilient bioeconomy. The alliance engages in policy dialogues, position papers and joint calls to action to shape favourable conditions for bio-based value chains.

- **European Bioeconomy Clusters Alliance (EBCA)**

- **Link:** <https://eurobioclusters.eu/>
- **Details:** The European Bioeconomy Clusters Alliance brings together leading national and regional innovation clusters across Europe to accelerate the transition to a circular and sustainable bioeconomy. Founded in 2025 through a Memorandum of Understanding signed by clusters from 14 EU Member States, EBCA fosters cross-sector collaboration, knowledge transfer and co-creation of projects and funding opportunities. The alliance's strategic focus is on strengthening value chains,



boosting industrialisation of bio-based ideas and advocating for supportive policy frameworks.

- **European Cluster Collaboration Platform (ECCP)**

- **Link:** <https://www.clustercollaboration.eu/>
- **Details:** The European Cluster Collaboration Platform is an EU-level digital hub that supports cluster organisations and their members to enhance competitiveness, innovation and international cooperation. ECCP provides tools for partner search, matchmaking, events, and knowledge exchange, and hosts a large database of clusters and networks active in various sectors, including bioeconomy-related clusters. Its resources help stakeholders find relevant partners across regions and value chains and access capacity-building activities and best practices in cluster and ecosystem development.

- **The European Bioeconomy Network (EuBioNet)**

- **Link:** <https://eubionet.eu/>
- **Details:** The European Bioeconomy Network is a proactive alliance of around 160 EU-funded projects and initiatives focused on bioeconomy promotion, knowledge sharing and stakeholder engagement. By aggregating project resources, communications and events, the network maximises joint impact, facilitates mutual learning across initiatives, and increases awareness of sustainable bio-based practices. It works closely with the European Commission and the CBE JU to align project outcomes with strategic bioeconomy goals and support coordination of community activities.

- **World Bioeconomy Association**

- **Link:** <https://bioeconomyassociation.org/>
- **Details:** The World Bioeconomy Association is a global non-profit organisation dedicated to promoting the bioeconomy as a pathway to sustainable development and economic transformation. It brings together stakeholders from science, industry, policy, civil society and international organisations to foster knowledge exchange, public awareness and collaboration across regions and sectors. WBA supports policy dialogue, monitors bioeconomy developments worldwide, and facilitates global cooperation through networking activities and strategic forums, contributing to the alignment and scaling of sustainable bio-based solutions.



7.1.3. Bioeconomy Working Groups

Thematic working groups play a crucial role in enabling intersectoral cooperation by providing structured spaces for dialogue, coordination and co-creation among stakeholders. They support the alignment of research, innovation, policy and implementation agendas by focusing on specific thematic, regional or value-chain challenges within the bioeconomy. Through regular exchanges, joint analyses and coordinated actions, working groups help translate strategic objectives into concrete initiatives, foster mutual learning and contribute to the design and scaling of integrated bioeconomy value chains.

The overview below highlights selected working groups that are particularly relevant for strengthening cooperation across sectors and governance levels in the bioeconomy.

- **SCAR Bioeconomy Strategic Working Group**

SCAR Bioeconomy Strategic Working Group operates under the Standing Committee on Agricultural Research and supports coordination among EU Member States on bioeconomy-related research and innovation. It provides strategic advice to policymakers, promotes alignment of national and European bioeconomy strategies, and facilitates exchange of best practices and policy experiences. The SWG addresses cross-sectoral linkages between agriculture, forestry, food systems, industry and the circular economy, contributing to more coherent and impact-oriented bioeconomy governance.

- **BIOEAST Thematic Working Groups**

The BIOEAST Initiative has established several Thematic Working Groups to support coordinated bioeconomy development in Central and Eastern Europe and beyond. These working groups bring together policymakers, researchers, industry representatives and other stakeholders to identify regional needs, define research and innovation priorities, and support implementation of national and macro-regional bioeconomy strategies. The thematic focus enables targeted collaboration along specific value chains and sustainability challenges.

The BIOEAST Thematic Working Groups include:

- **Agroecology:** Promoting sustainable farming systems, biodiversity and resilient food production models.
- **Bio-based materials:** Supporting development and market uptake of sustainable bio-based products and materials.



- **Bioenergy:** Addressing sustainable biomass use, energy transition and integration with other bioeconomy sectors.
 - **Education:** Strengthening skills, training and capacity building for bioeconomy development.
 - **Food Systems:** Fostering sustainable, circular and resilient food value chains.
 - **Forestry:** Enhancing sustainable forest management, wood-based value chains and ecosystem services.
 - **Freshwater:** Addressing bioeconomy opportunities related to freshwater ecosystems, aquaculture and water management.
- **PA8 Working Group on Circular Economy and Bioeconomy**

The PA8 Working Group operates within Priority Area 8 of the EU Strategy for the Danube Region (EUSDR) and focuses on strengthening cooperation on circular economy and bioeconomy topics across the Danube macro-region. The group brings together public authorities, regional actors, clusters, research organisations and projects to exchange knowledge, coordinate initiatives and support pilot actions. Its activities contribute to linking regional value chains, fostering innovation ecosystems and supporting sustainable economic development through circular and bio-based solutions.

Insight Box 7: Enabling Ecosystems as Multipliers of Intersectoral Cooperation

Bioeconomy events, platforms, alliances and working groups act as critical multipliers for the uptake of intersectoral cooperation procedures. While events primarily support matchmaking and idea validation, platforms and alliances provide continuity, coordination and access to partners. Working groups further enable long-term alignment of policy, research and innovation agendas. Together, these elements create favourable conditions for replicating and scaling bioeconomy value chains beyond individual projects and regions.

7.2. BIOECO-UP Toolbox: Practical Solutions to Enhance Intersectoral Cooperation

To equip stakeholders with practical, easy-to-use tools that support them throughout the process of designing and implementing intersectoral cooperation within the bioeconomy, the annex of this document contains selected tools - practical solutions how to enhance intersectoral cooperation. These tools are specifically crafted to complement the step-by-step guidelines provided earlier, offering concrete resources that stakeholders can rely on at each stage of their journey. Whether stakeholders are just beginning to explore potential partnerships across different sectors or are in



the midst of developing integrated value chains, these tools help streamline efforts, enhance collaboration and ensure that the initiatives are both effective and sustainable.

The toolbox builds on and expands the set of practical tools originally introduced in the annex of Deliverable D1.2.1 Draft procedures for bioeconomy intersectoral cooperation. While the initial toolbox focused primarily on early-stage cooperation design and stakeholder mobilisation, the tools presented in the annex of this document extend the toolbox towards implementation support, risk management and market-oriented cooperation.

The original set of tools introduced in D1.2.1 established a foundation for intersectoral cooperation by supporting stakeholders in:

- Defining and aligning SMART objectives with bioeconomy strategies
- Identifying and analysing relevant stakeholders using structured stakeholder mapping tools
- Planning and managing stakeholder engagement through a Stakeholder Engagement Plan
- Formalising cooperation through a Memorandum of Understanding (MoU)

Based on insights from the testing phase and practical experience gained during pilot implementation, several additional tools were identified as relevant. These tools address challenges that typically arise during implementation, coordination and scaling of intersectoral bioeconomy value chains. As a result, three complementary tools are presented in the annex of this deliverable.

- Conflict resolution tool - supporting structured and transparent management of conflicts arising from diverging interests, operational constraints or regulatory interpretations in intersectoral cooperation.
- Monitoring and risk assessment tool - enabling continuous tracking of progress, early identification of risks and adaptive management across different stages of cooperation.
- Off-take agreement template - providing a practical contractual framework to reduce market uncertainty, support investment decisions and strengthen long-term cooperation between producers and buyers.

Each tool is designed to be intuitive and adaptable, allowing it to be tailored to the specific context of stakeholders' cooperation. By using these tools, stakeholders can simplify the complex process of intersectoral cooperation, making it more manageable and ensuring that key steps are not overlooked. The overall objective is to empower stakeholders to create meaningful, impactful collaborations that drive innovation and sustainability within the bioeconomy.



Detailed information on the individual tools is provided in the annex of this document.

7.3. Ensuring Long-term Uptake Beyond the Project

Ensuring the long-term uptake of intersectoral cooperation procedures requires anchoring them within existing frameworks and structures that extend beyond the project's lifetime. The procedures are most effective when applied by actors with facilitation capacity and strong links to regional stakeholders, such as clusters, innovation hubs, development agencies and other networks. These actors are well positioned to act as intermediaries between policy objectives, research and innovation activities and market-oriented implementation, thereby supporting the continued use and adaptation of the procedures in diverse contexts.

Clusters and support institutions play a particularly important role in sustaining intersectoral cooperation processes. As neutral facilitators with established trust among businesses, research organisations and public authorities, clusters can integrate the procedures into their regular activities. Clusters systematically support companies and other stakeholders in identifying cooperation opportunities, structuring value chain concepts and addressing implementation challenges.

The long-term relevance of the procedures is further reinforced by their alignment with key European policy frameworks. The EU Green Deal provides the overarching strategic direction for climate neutrality, resource efficiency and sustainable growth, all of which are directly supported by the development of circular, bio-based value chains. The Circular Economy Action Plan emphasises the need to close material loops, valorise waste and by-products and foster cross-sectoral innovation, objectives that are addressed through the intersectoral cooperation procedures presented in this deliverable. Similarly, the EU Bioeconomy Strategy highlights the importance of sustainable biomass use, innovation across value chains and regional bioeconomy development, providing a clear context for the application and scaling of the procedures.

The transferability of the intersectoral cooperation procedures represents a key element of their long-term impact. Rather than being tied to specific pilot cases or territorial conditions, the procedures are designed as a modular and adaptable framework that can be applied across sectors, regions and cooperation formats. The DDIA structure provides a clear logic that can be understood and reused by different actors, while the toolbox offers practical instruments that can be selectively applied depending on the needs and capacities of stakeholders. This makes the procedures suitable for replication in future activities and use by organisations seeking to strengthen intersectoral cooperation without extensive methodological development.



8. Conclusions

This document presents the development and validation of intersectoral cooperation procedures for bioeconomy value chain design, representing one of the outcomes of BIOECO-UP project. Building upon earlier conceptual work and further strengthened through pilot testing and transnational peer review, the procedures were refined into a structured step-by-step guide supporting stakeholders in designing, implementing and assessing cross-sectoral bioeconomy initiatives.

The application of the DDIA (Diagnose-Design-Implement-Assess) framework across diverse national contexts demonstrated the adaptability and relevance of the procedures. Despite differences in national conditions, such as resource availability, stakeholder maturity and regulatory environments, the testing phase confirmed that the overall logic of the framework is transferable and capable of guiding stakeholders through the process of identifying opportunities, designing cooperation models and assessing sustainability impacts.

The framework goes beyond theoretical guidance by integrating practical instruments, structured templates and contractual examples that respond to challenges encountered during pilot implementation. By combining methodological guidance with operational tools, the procedures provide support for various stakeholders seeking to initiate or strengthen intersectoral bioeconomy cooperation.

At a strategic level, the procedures support the transition towards a circular, resource-efficient and climate-neutral economy, thus contributing to broader European objectives. By facilitating cross-sectoral valorisation of biological resources, industrial side streams and innovative bio-based solutions, the framework strengthens regional bioeconomy ecosystems and promotes the creation of sustainable value within territories.

Looking beyond the lifetime of the project, the transferability of the procedures is supported by their modular structure, practical orientation and alignment with European bioeconomy and circular economy strategies. The step-by-step approach can be adapted to different governance levels, sectoral combinations and stages of innovation. As a result, the procedures provide a flexible and evidence-based foundation for stakeholders seeking to develop and scale intersectoral bioeconomy value chains in diverse regional contexts.



9. Literature Sources

European Commission (2018). *A sustainable Bioeconomy for Europe: Strengthening the connection between economy, society and the environment*. Available at: https://knowledge4policy.ec.europa.eu/publication/sustainable-bioeconomy-europe-strengthening-connection-between-economy-society_en.

European Commission (2019). *The European Green Deal*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52019DC0640>

European Commission (2020). *A new Circular Economy Action Plan: For a cleaner and more competitive Europe*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0098>

United Nations (2015). *Transforming our world: the 2030 Agenda for Sustainable Development*. Available at: <https://sdgs.un.org/2030agenda>



Annex: Toolbox: Practical Solutions to Enhance Intersectoral Cooperation

A. Tool: SMART Objectives Alignment Framework^{1, 2}

The trouble with not having a goal is that you can spend your life running up and down the field and never score.

Bill Copeland, American Historian, Poet and Author

This tool is designed to help stakeholders create SMART (Specific, Measurable, Achievable, Relevant, and Time-Bound) objectives that are not only clear and actionable, but also aligned with broader national and global bioeconomy strategies. Having clarity in your goal-setting enables you to concentrate your efforts and resources on what is the most important and provides the motivation and focus you need to be successful.

Instructions:

➤ **Define specific objectives:**

Begin by clearly defining the objective you want to achieve. It should be specific enough that anyone involved understands what needs to be accomplished. When drafting your goal, try to answer the five "W" questions: What do I want to accomplish? Why is this goal important? Who is involved? Where is it located? Which resources or limits are involved?

Example: "Increase the use of bio-based materials in local manufacturing by 20%."

➤ **Ensure objectives are measurable:**

It is important to have measurable goals, so that you can track your progress, stay motivated and know when the objective has been achieved. You may do so by identifying key performance indicators (KPIs) and set quantifiable criteria for success. A measurable goal should address questions such as: How much? How many? How will I know when it is accomplished?

Example: "You might measure your goal to increase the use of bio-based materials in local manufacturing by 20% by tracking the percentage increase in bio-based materials used in local manufacturing by monitoring procurement records."

¹ <https://www.mindtools.com/a4wo118/smart-goals>

² <https://www.linkedin.com/advice/3/how-do-you-align-your-smart-goals-stakeholders>



➤ **Assess achievability:**

Your goal also needs to be realistic and attainable to be successful. In other words, it should stretch your abilities, but still remain possible. Evaluate whether the objective is realistic given your resources, time and existing constraints (How realistic is the goal, based on other constraints, such as financial factors?). Consider what needs to be done to achieve the objective and whether you have the capacity to do so (How can I accomplish this goal? Do I have the capacity to act accordingly?).

Example: “Is a 20% increase realistic given current supply chain capabilities and market demand?”

➤ **Ensure relevance:**

Make sure the objective aligns with your overall business plan and other relevant goals, broader bioeconomy goals, such as national bioeconomy strategies, EU bioeconomy strategy or the Sustainable Development Goals (SDGs), by cross-referencing your objective with other strategies to strengthen the case for support. The objective should contribute meaningfully to the overall mission and be relevant to the stakeholders involved. Questions to be answered: Does this seem worthwhile? Is this the right time? Does this match our other goals? Is it applicable in the current socio-economic environment? Is it aligned with other strategies?

Example: “This objective supports SDG 12 (Ensure sustainable consumption and production patterns) by promoting sustainable resource use.”

➤ **Set time-bound goals:**

Every goal needs a target date, so that you have a deadline to focus on and something to work toward. This part of the SMART goal criteria helps to prevent everyday tasks from taking priority over your longer-term goals. It includes setting deadlines and establishing a realistic time frame for accomplishing smaller goals that are necessary to achieving your final objective (e.g. by identifying any milestones along the way). Possible questions to be answered: When? What can I do six months from now?

Example: “Achieve a 20% increase in bio-based material usage within the next 18 months, with quarterly reviews to assess progress.”



Figure 1: Smart goals visualisation (Source: <https://app.creately.com/d/start/dashboard>)

There are multiple approaches and ways to write SMART objectives. The following sentence structure may be used to assist with the drafting: **[Who]** will do **[what]** resulting in **[measure]** by **[when]**.

After establishing your SMART objectives, document them clearly and share them with all relevant stakeholders, explain their relevance to the vision, mission and values, and how objectives support strategic priorities and outcomes. Objectives should be regularly reviewed and adjusted as necessary to reflect any changes in the broader strategic environment or project circumstances.

B. Tool: Stakeholder Mapping Tools

A crucial step for any form of intersectoral cooperation is identifying, analysing and engaging key stakeholders. This begins with a thorough stakeholder mapping and analysis to ensure that all relevant parties, including government agencies, industry leaders, research institutions, NGOs, and local communities, are engaged. Analysis should assess their interests, capabilities and innovation potential of each to identify the best opportunities for cross-sectoral innovation and collaboration.



1) Understanding stakeholders and the significance of their engagement

➤ Clarifying the concept of a stakeholder

Before diving into the process of stakeholder mapping, it is important to first grasp the concept of what stakeholder is. While there are multiple definitions available, the following may be used to guide your understanding:

“We use the term ‘stakeholders’ to mean any group of people, organised or unorganised, who share a common interest or stake in a particular issue or system; they can be at any level or position in society, from global, national and regional concerns down to the level of household or intra-household, and be groups of any size or aggregation.”³

Basically, a stakeholder refers to any individual, group, or organization that has an interest in, is affected by, or can influence the outcome of a particular project, decision or policy. In our case stakeholder may be mapped and identified based on a simple question: Who are the individuals/organizations affected by bioeconomy project that we are trying to implement and who can influence it? The Quintuple Helix stakeholder model, as will be presented below, will help to cluster the answer into smaller chunks.

It is also important to differentiate between primary stakeholders (directly involved in the project, such as industry leaders, government agencies, research institutions and NGOs), secondary stakeholders (indirectly affected or interested, including local communities, environmental organizations and investors), and tertiary stakeholders (those with peripheral influence, like the media or public opinion groups).

➤ Why is it important to engage stakeholders?

Engaging stakeholders during the bioeconomy related projects leads to sustainable positive impacts for all actors and contributes to a successful outcome. Collaboration among diverse actors leads to the emergence of innovative approaches, while experts benefit from accessing additional resources, knowledge and skills. Stakeholder engagement throughout a project can lead to higher quality decisions by incorporating more sources of information.⁴ By considering a range of perspectives, engaging stakeholders can lead to a wider set of more creative options.⁵ The benefits for each stakeholder depend on their personal background as well as their engagement and role

³ Grimble, R. and Wellard, K. (1997) Stakeholder Methodologies in Natural Resource Management: A Review of Principles, Contexts, Experiences and Opportunities. *Agricultural Systems*, 55, 173-193.

[http://dx.doi.org/10.1016/S0308-521X\(97\)00006-1](http://dx.doi.org/10.1016/S0308-521X(97)00006-1)

⁴ Reed, M. S. 2008. Stakeholder participation for environmental management: a literature review. *Biological Conservation* 141:2417–2431.

⁵ Richards, C., C. Carter, and K. Sherlock 2004. Practical approaches to participation SERG policy brief no. 1. Macauley Land Use Research Institute, Aberdeen, Scotland.



in the project. Scientific institutions gain a broader base of knowledge and higher quality data through cooperation with the civil society, while the population feels more connected to the project, which contributes to higher acceptance. In addition, the knowledge acquired creates stronger relationship of trust between the population and science.⁶ Capturing the stakeholders, their interests and influences and considering these aspects in the upcoming processes should lead to a successful project.⁷

Engaging stakeholders helps to reduce potential risks and conflicts, such as uncertainty, dissatisfaction, misalignment, disengagement and resistance to change.

After acknowledging the importance of stakeholder engagement, the next step is to understand the Quintuple Innovation Helix Model and identify the stakeholders that should be engaged according to this framework.

➤ What is a Quintuple Innovation Helix model?

The Quintuple Helix Model is a comprehensive framework for innovation that emphasizes the interplay of five key societal subsystems: university, industry, government, public and the environment.

- **University:** This represents the academic sector, which is responsible for knowledge production and innovation.
Exemplary stakeholders: university departments or faculties, teachers, professors, researchers, students, academics, experts as freelancers, other educational institutions.
- **Industry:** This sector applies the knowledge produced by universities to create economic value.
Exemplary stakeholders: industries, companies, services and banks.
- **Government:** This sector creates policies that facilitate the interaction between the university and industry sectors.
Exemplary stakeholders: municipality departments, decision makers, companies owned by the municipality.
- **Public:** This includes the media-based and culture-based public and civil society. It emphasizes the importance of public support for new strategies or policies.

⁶ Durham E., Baker H., Smith M., Moore E. & Morgan V. (2014). The BiodivERsA Stakeholder Engagement Handbook. BiodivERsA, Paris (108 pp).

⁷ Varvasovszky Z, Brugha R. A stakeholder analysis. Health Policy Plan. 2000 Sep;15(3):338-45. doi: 10.1093/heapol/15.3.338. PMID: 11012410.



Exemplary stakeholders: citizen advocacy organizations, foundations, environmental CSOs, professional associations, community groups, local media like newspapers and TV/radio stations.

- Environment: This is the natural environment of society, which should also be seen as a driver for knowledge production and innovation.

*Exemplary stakeholders: government representatives, businesses, scientists, landowners and local users of natural resources.*⁸

It is a theoretical and practical model for the exchange of knowledge, based on these five social subsystems, in order to generate and promote a sustainable development of society. It can be applied to address sustainable goals through the application of knowledge and know-how. It focuses on the social exchange and transfer of knowledge inside the subsystems of a specific local network.

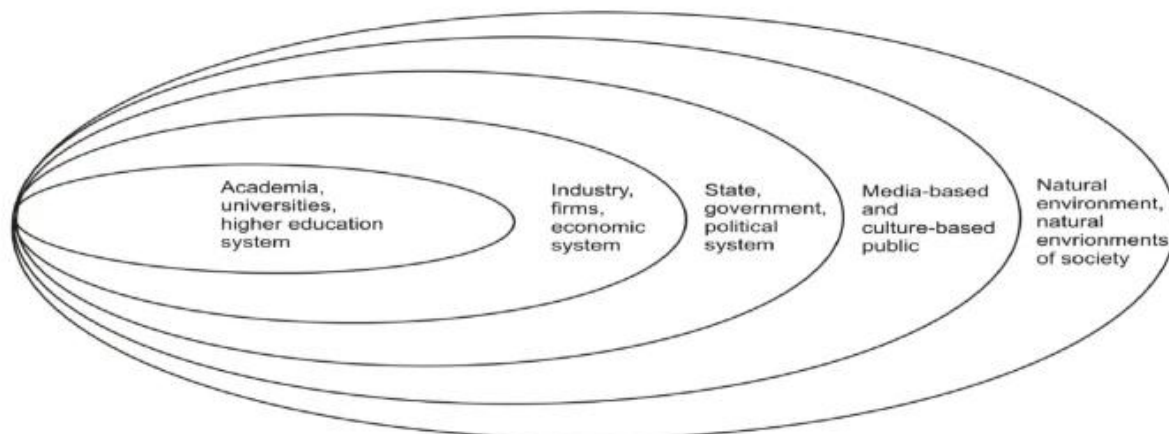


Figure 2: The subsystems of the Quintuple Helix Model. Modified from Etzkowitz and Leydesdorff ([2000], p. 111) and Carayannis and Campbell ([2009], p. 207; 2010, p. 62).

2) Stakeholder mapping

Stakeholder mapping is a strategic process that “identifies the stakeholders and maps out their relative power, influence and interests.”⁹ The goal of this process is to comprehend the roles, interests, influence and relationships of stakeholders to engage them effectively. Through stakeholder mapping, different parties can better understand the priorities, concerns and potential impact of each stakeholder.

⁸ Vogler, D., Macey, S., Sigouin, A. (2017). Stakeholder Analysis in Environmental and Conservation Planning. *Lessons in Conservation*, Vol. 7, pp. 5–16.

⁹ Morgan, P., Taschereau, S. (1996). *Capacity and institutional assessment: Frameworks, Methods and Tools for Analysis*, Canadian International Development Agency, Quebec.



Stakeholder mapping should be done in a cooperative process of various people. Therefore, it is recommended to build a small working group that acts as a core team responsible for initiating and collaborating in the mapping activities. It is recommended to include diverse expertise, networks and experiences within the group to ensure comprehensive consideration of knowledge areas.

We recommend that stakeholder mapping is repeated several times during your project cycle to adapt the group if needed.

Before starting the process of mapping stakeholders, it is important to precisely define the objective of the stakeholders' engagement, i.e. to define why the engagement activity is necessary, what outcomes are aimed for, and the scope and context of the engagement (the engagement might be necessary to gain the support for the project, or to foster collaboration by encouraging joint ventures or partnerships, or to facilitate innovation, or can even aim to mitigate risk).

In the following steps, several tools that can be used for stakeholder mapping are highlighted:

- **Identification:** Within this step the working group is asked to think about different stakeholders that would be useful to engage in the upcoming project steps - the consideration should be made based on quintuple helix approach. To assist you with the identification, the working group should try to answer the following questions: What information is needed to tackle the challenges leading to our SMART objective? Which organizations (from academia, industry sector, public, government, environment) have the necessary information? Who might be affected by our project objectives? Who else could be interested in our project? Who else has the influence to support the objectives of our project? Are there any veto-players important to consider?
- **Structuring and assessing stakeholders:** After having prepared a list of stakeholders, it is recommended to get a better understanding about their relevance and the perspectives they are offering. The following key questions may help us with that: What type of stakeholder is listed? What is the added value of integrating this stakeholder? Does the stakeholder have specific knowledge, information or expertise that could be useful for the project? Does the stakeholder want to be engaged? Is it necessary to provide any incentives to increase the willingness? How much influence does the stakeholder have and who they are influencing? Can problems arise if the stakeholder is not or is less engaged in the project?



A stakeholder analysis table with such or modified question can be made to document the answers to these questions and structuring them accordingly.

Stakeholder Analysis Table										
ID	Sector	Organizations name	Contact Details (Name, Surname, contact)	Role of Stakeholders	Project stage: When to involve the stakeholder?		Information: Which information can be provided by the stakeholder?	Influence: Which influence does the stakeholder have on the challenge?	Involvement: Why is it necessary/relevant/beneficial to involve them?	Impacts: How is this stakeholder affected by the project?
1				Decision-makers	Assessment and planning					
				Implementers	Design					
				Coordinators	Implementation					
				Providers of expert knowledge	Operation and Maintenance					
				Funders/Sponsors	Monitoring					
				Lobbyists	Evaluation					
				Mediators						
2				Decision-makers	Assessment and planning					
				Implementers	Design					
				Coordinators	Implementation					
				Providers of expert knowledge	Operation and Maintenance					
				Funders/Sponsors	Monitoring					
				Lobbyists	Evaluation					
				Mediators						

Figure 3: Example of the stakeholder analysis table

Once stakeholders are identified and structured, the working group should assess the stakeholders by considering and visualizing their different levels of interests to be engaged in the project and their abilities to influence the project outcomes. Based on this, the working group could decide whose engagement is likely to be of most value and importance. This can be done with the tool called Stakeholder Interest-Influence Matrix also known as stakeholder grid¹⁰, that helps to visualize the relative influence (on one axis) and level of interest - either positive or negative - (on the other axis). A stakeholder grid can assist a working group by visualizing which stakeholders share similar goals or have similar interests. A stakeholder grid is also useful for identification of unexpected alliances, that is, groups that do not regularly share an interest, but which may join efforts to advocate for a singular position that all share.¹¹ The working group should discuss each stakeholder, in turn, determining their position on the map by rating their relative interest towards the project and the degree to which they can actively influence the project. Answering those questions may assist: Interest - How important it is for that stakeholder to find a solution to the challenges that accompany the SMART objectives? Influence - How much influence the stakeholder has in developing a solution to the challenges that accompany the SMART objectives?

¹⁰ Vogler, D., Macey, S., Sigouin, A. (2017). Stakeholder Analysis in Environmental and Conservation Planning. Lessons in Conservation, Vol. 7, pp. 5–16.

¹¹ Vogler, D., Macey, S., Sigouin, A. (2017). Stakeholder Analysis in Environmental and Conservation Planning. Lessons in Conservation, Vol. 7, pp. 5–16.



Print the following matrix to A2 sheet (or use a flip-chart paper and draw the matrix lines as below).

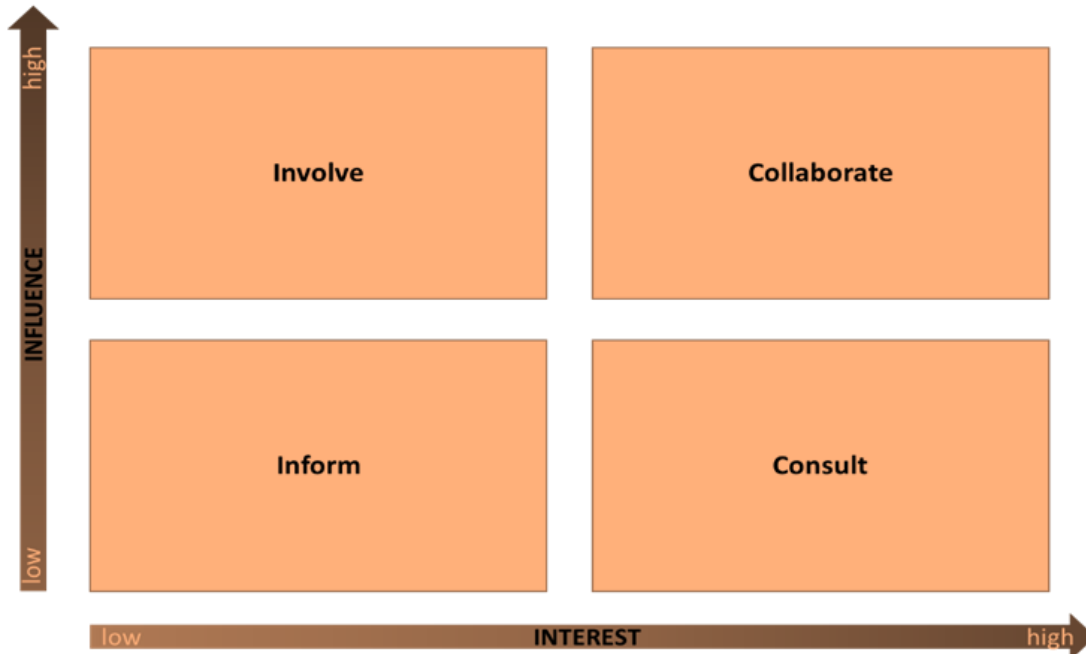


Figure 4: Interest-Influence-Matrix (Source: based on Vogler et al 2017)

Next, write down all the stakeholders you have identified on post-it notes. Collaboratively within the working group position each stakeholder on the matrix according to where they fit, using the two guiding questions above.

3) Deciding on the level of engagement

Based on the completed Stakeholder Interest-Influence Matrix, the working group can decide on the different levels of engagement for the identified stakeholders:

Stakeholders of low interest & low influence: Although stakeholders in this category have the least importance, it is still advisable to maintain some level of communication with them. You can keep them **informed** about project developments through general communications like newsletters, emails or website.

Stakeholders of low interest & high influence: These stakeholders may have a low interest but hold significant influence over the project's challenges. It is crucial to meet their needs and keep them **involved**, well-informed, perhaps through regular meetings. By engaging them more, you might increase their interest, potentially shifting them to the top right quadrant of the matrix, where they can actively support addressing the challenges.



Stakeholders of high interest & low influence: These stakeholders are very interested in the project's theme, but have limited influence. Leverage their enthusiasm by involving them in low-risk areas. Keep them updated and **consult** them on matters that align with their interests.

Stakeholders of high interest & high influence: These are your key players and should be considered as potential initial members of the local task force. Since they are both highly interested in and influential on your challenges and goals, it is essential to **collaborate** closely with them. Engage them in decision-making processes and regularly seek their input and feedback.

The level of engagement should be added to the stakeholder analysis table presented above.

C. Tool: Stakeholder Engagement Plan Template

Establishing effective communication channels and engagement strategies is also critical to guide the systematic involvement of all relevant parties throughout a bioeconomy project. Therefore, it is advisable to set-up a plan - **Stakeholder Engagement Plan** - to specify how to communicate with different stakeholder groups and how to engage them throughout the process of intersectoral cooperation for bioeconomy value chain design, to effectively address the objectives and goals of the bioeconomy project.

Based on the outcome of the use of stakeholder mapping tools, the Stakeholder Engagement Plan identifies the most effective **communication channels for each stakeholder group**. Options may include:

- Digital platforms: e-mail, social media, online forums;
- Traditional media: newsletters, reports, press releases;
- Face-to-face: meetings, conferences, workshops.

Choosing the right communication channels helps maintain clear, consistent and timely communication, which is vital for keeping stakeholders informed, aligned and engaged throughout the project.

Furthermore, the Stakeholder Engagement Plan **plans tailored engagement activities**, i.e. specific actions taken to engage stakeholders, such as:

- Meetings: regular check-ins or strategic discussions;
- Workshops: collaborative sessions to brainstorm and develop solutions;
- Surveys: collecting feedback and insights from stakeholders;
- Conferences: broader discussions involving multiple sectors;



and defines **how often stakeholders should be engaged**, depending on their role and the stage of the project, to remain actively involved without becoming overwhelmed. The following level of frequency may be assigned to the particular stakeholder groups: regularly (ongoing communication for key stakeholders), periodically (scheduled updates or feedback sessions) or as needed (for critical milestones or issues).

Moreover, the Stakeholder Engagement Plan should decide about the responsibility for each engagement activity. This can be done by **assigning a responsible party**, such as project managers (overseeing overall engagement), communication teams (handling public relations and updates), technical experts (leading discussions on specific issues), etc.

Finally, Stakeholder Engagement Plan and its activities should be **regularly assessed** to ensure that it remains effective and responsive to stakeholder needs, and necessary adjustments should be made. Assessment can be made in the form of progress reports, evaluation meetings etc.

We advise that the excel table with such or similar information is created for each bioeconomy project - see template below:

Stakeholder Engagement Plan												
ID	Sector	Org. name	Contact Details (Name, Surname, contact)	Role of Stakeholders	Project stage: When to involve the stakeholder?	Responsible party	Level of Interest	Level of Impact	Level of Involvement	Actions for stakeholder involvement	Frequency of Communication	Preferred communication channel
1				Decision-makers	Assessment and planning							
				Implementers	Design							
				Coordinators	Implementation							
				Providers of expert knowledge	Operation and Maintenance							
				Funders/Sponsors	Monitoring							
				Lobbyists	Evaluation							
				Mediators								
2				Decision-makers	Assessment and planning							
				Implementers	Design							
				Coordinators	Implementation							
				Providers of expert knowledge	Operation and Maintenance							
				Funders/Sponsors	Monitoring							
				Lobbyists	Evaluation							
				Mediators								

Figure 5: Example of the Stakeholder Engagement Plan



D. Tool: Memorandum of Understanding (MoU) on Intersectoral Cooperation within Bioeconomy

To provide a legal foundation for intersectoral cooperation and help secure long-term commitments from stakeholders, and generally to formalize the cooperation between sectors, a formal agreement, often in the form of a Memorandum of Understanding (MoU), should be developed. MoU is a formal document that outlines the terms and conditions under which different sectors of a value chain collaborate. It is essential for intersectoral cooperation, ensuring all parties have a mutual understanding of their roles, contributions, and other obligations. It also establishes resource sharing, confidentiality and intellectual property rights and the mechanisms to resolve disputes, among other key aspects.

Below we provide a template that can be used, amended and adapted to your own specific needs, all for the purpose of formalizing intersectoral cooperation in bioeconomy value chain development.

Memorandum of Understanding (MoU) template:

Memorandum of Understanding on intersectoral cooperation in the field of bioeconomy

This Memorandum of Understanding (MoU) is entered into by and between:

[Party 1 Name], [Party 1 Description], located at [Party 1 Address]

[Party 2 Name], [Party 2 Description], located at [Party 2 Address]

[Additional Parties (if applicable)], [Descriptions and Addresses]

Hereinafter referred to collectively as the “Parties.”

Article 1: Statement of Purpose

The purpose of this MoU is to record the intention of the Parties to cooperate by designing and implementing bioeconomy value chains, contributing to the development of sustainable bio-based solutions across sectors. The Parties acknowledge that they have complementary skills, knowledge, and experience in the fields related to bioeconomy, which could be of mutual benefit.



It is hoped that joint activities between the Parties under this MoU could result in substantial benefits for sustainable bioeconomy development on [choose one or more: on local level/on regional level/on national level/on international level/worldwide.]

Article 2: Forms of cooperation

Co-operation under this MoU may take the following forms:

[various examples of options that may be included in the MoU are provided here; list in not exhaustive]

- a) information exchange and sharing of data, analysis, best practices;
- b) joint studies on mutually agreed topics;
- c) fostering knowledge transfer and capacity building between different sectors;
- d) promoting sustainable resource use in line with circular economy principles;
- e) organisation of joint seminars, web seminars, and workshops;
- f) jointly developing training and capacity building materials;
- g) developing innovative products and technologies that integrate biological resources;
- h) enhancing market opportunities for bio-based products and processes;
- i) informing each other about relevant activities, outputs, accomplishments and facilitating mutually beneficial interactions; and
- j) any other forms of collaboration which might be mutually agreed.

Either Party may identify and propose collaborative projects to the other. The Parties understand there is no guarantee that any projects, or other initiatives, will arise and/or lead to increased capabilities and outcomes for the other Party. Attachment A provides an initial list of possible joint activities. This list is indicative and may change or expand over time, as agreed between the Parties.

Article 3: Roles and Contributions of Each Party

Each Party agrees to undertake the following roles and responsibilities to support the objectives of this MoU:

[Party 1] will contribute with expertise in [sector/domain], provide [resources/technologies], and lead activities related to [specific role].



[Party 2] will focus on [sector/domain], contributing [resources/technologies] and leading activities related to [specific role].

[Additional Parties, if applicable: Contributions, roles, and specific tasks.]

All Parties agree to collaborate in good faith, share knowledge and communicate regularly throughout the cooperation.

Article 4: Resource Sharing Agreements

The Parties agree to share necessary resources to achieve the objectives of this MoU. This includes:

[Resource Type] (e.g., laboratory facilities, data, raw materials, human resources, etc.) will be provided by [Party].

[Other resource-sharing agreements].

All resources shared will be subject to [specific conditions] and will be used solely for the purposes outlined in this MoU.

Article 5: General Provisions

Legal Obligations: Except for provision of Article 6 (Confidentiality and Intellectual Property Rights), this MoU is not intended to, and does not, create any legal obligation on either Party. The cooperation between the Parties as outlined in this MoU shall not be interpreted as a partnership or any other type of legal entity or personality. This MoU does not create an exclusive relationship between the Parties for the purpose of undertaking any activities described in this MoU, nor does it give either Party the authority to act on behalf of the other Party.

Independent Decision-making Autonomy: No provisions in this MoU are intended to interfere in any way with the independent decision-making autonomy of the Parties with regard to their own respective affairs and operations. The activities of the Parties under this MoU are subject to decisions of their respective governing bodies and their respective applicable regulations, rules, policies and procedures.

Financial Obligations: Nothing in this MoU obliges a Party to expend funds or to enter into any contract, agreement, or other financial obligation. Implementation of activities under this MoU is subject to the availability of funds, personnel and other resources of both parties. Any activity



under this MoU involving the commitment of funds and/or resources shall be handled in accordance with each Party's internal policies, regulations and procedures and may be reflected in a **separate written agreement between the Parties**.

Point of Contact: Each Party will designate a representative to serve as a point of contact for the purpose of implementing this MoU and will share contact details with the other Party and notify them should their point of contact change.

Article 6: Confidentiality and Intellectual Property Rights

This MoU encourages the Parties to exchange information which is already in the public domain. The Parties, however, agree to protect and keep confidential any intellectual property, unpublished materials, trade secrets, and other proprietary or commercially sensitive information of the other Party, and to only use such information for projects and initiatives agreed upon together and in the manner agreed under this MoU. The protection of, and rights to utilise confidential information exchanged must be agreed between the parties on a case by case basis.

The Parties recognize that intellectual property may result from this cooperation. The following principles shall govern the ownership and use of such intellectual property:

- a) Any pre-existing intellectual property brought into the cooperation remains the property of the originating Party.
- b) Intellectual property created as a direct result of this cooperation will be jointly owned by the Parties, unless otherwise agreed.

[Party-specific agreements about intellectual property management].

The validity of this Article will extend beyond the termination of this MoU.

Article 7: Timeline and Milestones

This cooperation will be conducted over a timeline of [number] months/years, commencing on the date as set in Article 9, unless terminated earlier by one of the Parties giving the other three (3) months' written notice. It will automatically be renewed for up to three (3) further periods of [one month/year] unless a Party gives written notice of an intention not to renew at least three (3) months prior to any expiration date. This MoU can be extended beyond [three (3) months/years] with the written agreement of both parties.



The Parties agree to the following key milestones:

[Milestone 1]: [Description of milestone and deadline].

[Milestone 2]: [Description of milestone and deadline].

[Additional milestones, if applicable].

Article 8: Dispute Resolution Process

In the event of any dispute arising out of or relating to this MoU, the Parties agree to the following process:

- a) Mediation: The Parties will first attempt to resolve the dispute through informal negotiation or mediation.
- b) Escalation: If mediation is unsuccessful, the issue will be escalated to the Steering Committee or senior management representatives.
- c) Arbitration: If the dispute remains unresolved, the Parties may seek binding arbitration in accordance with [arbitration rules].

Article 9: Signatures and Dates

This Memorandum of Understanding is signed by the authorized representatives of the Parties and shall be effective upon the date of the last party to sign this MoU, which may be physical or electronic or in counterparts.

SIGNED for and on behalf of the [Party 1],

Signature: _____

Name: _____

Title: _____

Date: _____

SIGNED for and on behalf of the [Party 2],

Signature: _____



Name: _____

Title: _____

Date: _____

[Include additional signature lines as needed for additional Parties.]

Attachment A

version [date]

Potential joint activities

An indicative list of joint activities that may be carried out by the Parties under this MoU is as follows:

e.g. joint meetings,

e.g. promotion and publicity (Parties will include links to each others' websites; exchange newsletter material; conduct joint workshops/seminars; conduct joint study tours),

etc.

E. Tool: Conflict Resolution Tool

Intersectoral cooperation in the bioeconomy brings together stakeholders from diverse sectors such as industry, academia, government and civil society, each with different mandates, values, timeframes and operational logics. While such diversity is a key driver of innovation, it also increases the likelihood of conflicts arising during cooperation processes. These conflicts may relate to diverging objectives, resource allocation, regulatory interpretations, intellectual property rights, risk-sharing, communication styles, or expectations regarding outcomes.

If not addressed in a timely and structured manner, conflicts can undermine trust, delay implementation, reduce the effectiveness of cooperation, and in some cases lead to the breakdown of partnerships. Therefore, conflict resolution should not be treated as an ad hoc or reactive activity, but as an integral part of intersectoral cooperation procedures.



The Conflict Resolution Tool is designed to provide stakeholders with a structured, transparent and practical approach to identifying, addressing and resolving conflicts that may arise during intersectoral bioeconomy initiatives.

The Conflict Resolution Tool can be applied:

- At any stage of intersectoral cooperation (from early design to implementation and scaling),
- In formal partnerships (e.g. consortia, clusters, public-private partnerships),
- In informal or exploratory cooperation settings (e.g. pilot projects, living labs, stakeholder platforms).

The tool is based on a set of core principles that guide effective and constructive conflict resolution in intersectoral bioeconomy cooperation. Conflicts should be identified and addressed at an early stage, as timely intervention helps prevent escalation and reduces negative impacts on collaboration. Wherever possible, resolution processes should involve neutral facilitation to ensure balanced dialogue and fair treatment of all parties. Transparency is essential, meaning that procedures, discussions, and decisions are clearly documented and communicated. The tool also emphasizes respect and inclusiveness by ensuring that all stakeholder perspectives are heard, acknowledged, and taken into account. Rather than focusing on assigning responsibility or blame, the process is solution-oriented, aiming to identify practical and mutually acceptable outcomes. Finally, conflicts are viewed as learning opportunities that can strengthen cooperation frameworks through reflection, adaptation, and continuous improvement.

The tool follows a structured five-step process:

1. **Conflict Identification and Description:** Clearly define the nature of the conflict, the stakeholders involved, and its potential impact on cooperation objectives.
2. **Stakeholder Perspectives and Interests Analysis:** Identify underlying interests, expectations and constraints of each party involved.
3. **Facilitated Dialogue and Option Development:** Organize a structured dialogue to explore possible solutions and compromises.
4. **Agreement and Action Planning:** Agree on a resolution, define concrete actions, responsibilities and timelines.
5. **Monitoring:** Monitor implementation of the agreed solution and assess whether further adjustments are needed.



Conflict Resolution Tool - Practical Template

Section	Key Questions / Fields	Input/ Notes
General Information	Project / initiative name	
	Date conflict identified	
	Stage of cooperation (design / implementation / scaling)	
	Person reporting the conflict	
Conflict Description	Brief description of the conflict	
	Type of conflict (strategic / operational / regulatory / financial / interpersonal)	
	Potential impact on cooperation (low / medium / high)	
Stakeholders Involved	Stakeholder 1 name	
	Sector (industry / academia / government / civil society / other)	
	Role in cooperation	
	Main concerns and interests	
	Stakeholder 2 name...	
	Sector (industry / academia / government / civil society / other)	
Root Causes Analysis	Role in cooperation	
	Main concerns and interests	
	Diverging objectives or priorities	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Communication gaps or misunderstandings	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Regulatory or legal constraints	<input type="checkbox"/> Yes <input type="checkbox"/> No
Resolution Options	Resource or funding-related issues	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Other causes (please specify)	
	Option 1 (description, advantages, risks)	
	Option 2 (description, advantages, risks)	
Agreed Resolution	Option 3 (description, advantages, risks)	
	Selected option	
Action Plan	Rationale for selection	
	Action to be taken	
	Responsible party	



	Timeline / deadline	
	Resources required	
Monitoring	Monitoring date(s)	

F. Tool: Monitoring and Risk Assessment Tool for Bioeconomy Intersectoral Cooperation

Intersectoral cooperation in the bioeconomy is inherently complex, involving multiple sectors, stakeholders, regulatory frameworks, and market conditions. Such cooperation often unfolds in dynamic environments characterized by technological uncertainty, regulatory changes, market volatility, and evolving stakeholder expectations. Without systematic monitoring and structured risk assessment, intersectoral initiatives may face delays, inefficiencies, or failure to achieve intended outcomes.

The Monitoring and Risk Assessment Tool is designed to support stakeholders in tracking progress, identifying emerging risks, and enabling timely corrective actions throughout the lifecycle of intersectoral bioeconomy cooperation. It helps ensure that cooperation remains aligned with strategic objectives, sustainability goals, and agreed roles and responsibilities, while increasing transparency and accountability among partners.

This tool complements conflict resolution mechanisms by providing an early-warning system that can prevent conflicts and implementation challenges before they escalate.

The Monitoring and Risk Assessment Tool can be applied:

- Across all stages of intersectoral cooperation (planning, pilot implementation, scaling, and commercialization),
- In formal and informal cooperation arrangements,
- At project, partnership, or network level.

The tool is based on a set of guiding principles that ensure effective and proportionate monitoring and risk management in intersectoral bioeconomy cooperation. Monitoring and risk assessment efforts should be tailored to the scale and complexity of the cooperation, ensuring that they are neither overly burdensome nor insufficient. Monitoring is understood as a continuous process rather than a one-off activity, enabling stakeholders to track progress and emerging issues over time. The tool emphasizes a preventive orientation, encouraging early identification and management of risks before they escalate. Shared responsibility is a core principle, with all



partners contributing to monitoring activities and risk management according to their roles and capacities. The system is designed to be adaptable, allowing objectives, indicators, and mitigation measures to be adjusted. Transparency underpins the entire process, ensuring that monitoring results and identified risks are clearly communicated among all stakeholders to support trust, accountability, and informed decision-making.

The tool follows a structured four-step process:

1. **Definition of Objectives and Indicators:** Identify cooperation objectives and define measurable indicators covering operational, economic, environmental, social, and governance dimensions.
2. **Risk Identification and Assessment:** Systematically identify potential risks and assess their likelihood and potential impact.
3. **Mitigation Planning and Implementation:** Define preventive and corrective measures, assign responsibilities, and allocate resources.
4. **Review, Reporting and Adaptation:** Regularly review progress and risks, report findings to partners, and adapt strategies as needed.

Monitoring and Risk Assessment Tool - Practical Template

Section	Key Questions / Fields	Input / Notes
1. General Information	Project / initiative name	
	Monitoring period	
	Stage of cooperation (planning / pilot / scaling)	
	Responsible person or body	
2. Objectives and Indicators	Cooperation objective	
	Key performance indicator(s) (KPI)	
	Baseline value	
	Target value	
	Data source / measurement method	
3. Risk Identification	Risk description	
	Risk category (technical / regulatory / financial / market / environmental / social / organizational)	
	Affected cooperation area	
4. Risk Assessment	Likelihood (low / medium / high)	
	Impact (low / medium / high)	
	Overall risk level	



5. Mitigation Measures	Preventive measures	
	Corrective measures	
	Responsible partner	
	Timeline for implementation	
6. Monitoring Results	Current status (on track / minor deviation / major deviation)	
	Observed changes or issues	
7. Review and Adaptation	Need for adjustment of objectives or measures	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Proposed adjustments	
8. Reporting and Communication	Reporting frequency	
	Stakeholders informed	
	Communication format (meeting / report / platform)	
9. Lessons Learned	Key insights	
	Recommendations for future cooperation	

G. Tool: Off-take Agreement Template

The Off-take Agreement is a contractual tool that supports intersectoral cooperation in the bioeconomy by reducing market uncertainty and enabling long-term collaboration between producers and buyers. Under an off-take agreement, the off-taker commits to purchasing a defined quantity of a product produced by a project or initiative at agreed terms, providing the producer with a guaranteed market and more predictable revenue streams. At the same time, the off-taker secures long-term supply and price stability.

In the context of bioeconomy intersectoral cooperation, off-take agreements can facilitate investment, support scaling-up, and strengthen trust between partners. The following template is drafted for learning purposes and may serve as a basis for negotiations and should be adapted to the specific needs and circumstances of the cooperating organizations.



Off-Take Agreement Template¹²

1. Parties: This OFF-TAKE AGREEMENT (“Agreement”) is made and entered into as of [Date] between [Full Legal Name of Company], a [Type of Entity] located at [Address] (“Supplier”) and [Full Legal Name of Company], a [Type of Entity] located at [Address] (“Off-taker”).

WHEREAS, the Supplier is duly organized in accordance with the laws of [Jurisdiction], [Country];

WHEREAS, the Off-taker is duly organized in accordance with the laws of [Jurisdiction], [Country];

WHEREAS, The Supplier desires to sell to the Off-taker, and the Off-taker desires to purchase from the Supplier, the Product in accordance with the terms and conditions of this Agreement.

2. Product Description: The product to be supplied under this Agreement and any extension thereof is [Name of Bioeconomy Product], produced from [Brief Description of the Production Process or Raw Material].

3. Quantity: The Supplier agrees to supply and the Off-Taker agrees to purchase [Quantity] of the product during the term of the Agreement, with delivery schedules as follows [insert the schedule].

4. Pricing: The agreed price per unit of the product is [Price], subject to the following payment terms:

- [Payment Method and Schedule: e.g., 50% upfront and 50% upon delivery]

[Alternative pricing options should also be considered, such as: The Off-Taker agrees to pay the Supplier a market-related price at the time of delivery of the Product or a fixed price, as set out, whichever is the greater.]

5. Delivery:

The products will be delivered to [Delivery Location] on the following dates: [Specify Delivery Dates].

¹² The following templates served as an inspiration and support while drafting: https://www.nab.com.na/wp-content/uploads/2023/11/20231002-Horticulture-Offtake-Agreement-Template_-Approved-2023.pdf; <https://www.bloomberglaw.com/external/document/XV1235S000000/finance-sample-agreement-off-take-agreement-annotated>.



Transportation and logistics responsibilities will be [handled by Supplier/Off-Taker], and associated costs will be borne by [Responsible Party].

[The following provisions may also be used as an alternative/addition to the above:

The costs of transportation of the Products to the delivery location shall be paid by the Supplier. The Off-Taker shall bear all costs associated with the Product after delivery to the delivery location.

The Supplier shall be responsible for loading the Products. The Trader shall be responsible for unloading the Products.

The Off-Taker shall maintain the delivery point in a reasonable state of cleanliness and hygiene.

The Off-Taker will provide secure and suitable off-loading facilities at the premises to facilitate the safe and timely off-loading of the Products.

Any additional transport costs arising from the rejection of any vehicle/ truck carrying the Products shall be the liability of the Supplier.

The Supplier will issue with each delivery, an invoice/ statement and a delivery note as evidence of delivery, listing the quantity, value, and type products delivered to the Off-Taker.

In the event of justified unforeseen circumstances, delivery of the Product can be postponed to a future date, once both Parties have agreed.]

6. Quality Standards: The product must meet the following specifications:

[Insert Product Quality Standards, such as composition, purity, etc.]

Both parties agree to quality testing upon delivery, with procedures as follows: [Insert Testing Procedures - e.g. twelve (12) hours after delivery; where the quality testing will take place; who may be present at the quality testing; etc.].

7. Quality testing and Acceptance of the products

The Off-taker shall have the right to reject delivery if the Products do not comply with the stipulated requirements.



To confirm the acceptance of the Products, the Off-taker shall provide the Supplier with a written receipt specifying the time, date, quantity, and quality of Products. The written receipt shall be duly signed by both, the Supplier and the Off-taker.

8. Payment: The Supplier shall invoice the Off-taker for all the monies due, upon acceptance of the Products. [insert the payment procedure provisions of your organisation]

9. Force Majeure: In case where unforeseen situations such as hail, pests, diseases, frost, heat wave, drought, excessive rain, war, fire, civil unrest, and any other reasonable cause, which is beyond the parties' control (the so called "force majeure" cause) arise affecting the correct execution of this agreement, neither party shall be considered liable of non-performance, losses, and damages occurred.

The Party seeking to invoke force majeure shall dispatch written notice to the other Party within five (5) business days upon the occurrence of the force majeure act.

10. Term of Agreement: This Agreement will be in effect from [Start Date] to [End Date], with an option to renew under mutually agreed terms.

11. Termination, Renewal, and Periodic Review

This Agreement may be terminated:

- a. following a breach of the Agreement;
- b. by mutual agreement of the Parties;
- c. by either Party by giving _____ written notice to the other Party.

Any trade that has occurred between the parties in accordance with this Agreement before the issuance of the termination remains valid until the last day of the termination notice.

A party to this agreement who receives payment for, and directly related to, trade that would have occurred after the termination of the agreement, must refund the payment to the party who made the payment within ____ days after the day on which the agreement is terminated.

A party required to return a payment may deduct, from the amount to be returned, reasonable expenses incurred under the agreement for the purposes of, and directly related to, trade that would have occurred after the termination of the agreement.



The Parties agree to meet at least thirty days before the expiration of the Term and to enter into good faith negotiations to discuss whether they can mutually agree to extend the Term by such period as may be agreed between the Parties on terms acceptable to both Parties. If the Parties do not mutually agree on the terms and conditions of the extension before the expiration of the Term, then this Agreement shall expire on the Termination Date.

The Parties shall meet every quarter [depending on the nature of the Product and length of the contract] to review the implementation of this Agreement. Where a Party's ability to fulfil its obligations under this Agreement has fundamentally altered due to a significant change of circumstances, that Party may request a renegotiation of one or more of the terms of this Agreement, and the other Party shall consider that request in good faith.

12. Dispute Resolution

Any disputes arising from this Agreement will be resolved through [Mediation/Arbitration] in accordance with the laws of [Jurisdiction].

[Dispute resolutions provisions can be more specific, therefore please consider:

If any dispute arises relating to this Agreement, the Parties shall, within _____ Days of notice of such dispute having been given by one Party to the other Party, meet and use their reasonable effects to resolve such dispute through good faith negotiation.

Should the Parties fail to resolve such dispute within _____ days of their meeting or such longer period as the Parties may agree, the matter shall be elevated for mediation.

Should the Parties fail to resolve such dispute within _____ days of their mediation meeting or such longer period as the Parties may agree, the matter shall be elevated to an independent arbitrator agreed upon by both Parties. Each Party shall bear its own costs and the costs of the arbitration shall be borne equally by the Parties, unless the arbitrator decides otherwise.

Where the dispute has not been resolved in accordance with the above, any Party may submit the dispute to any court of competent jurisdiction.]

13. General

If expressly not otherwise provided in this Agreement, each Party shall bear and pay its costs in relation to the negotiation, drafting, finalisation, signing, and implementation of this Agreement.



This Agreement constitutes the sole record of the agreement between the Parties in relation to the subject matter hereof. No Party shall be bound by any express, tacit, or implied term, representation, warranty, promise, or the like not recorded herein. This Agreement supersedes and replaces all prior commitments, undertakings, or representations, whether oral or written, between the Parties in respect of the subject matter hereof.

The Parties agree that the terms of this Agreement and all confidential and proprietary information of the Parties communicated to them in connection with this Agreement, including, but not limited to, details concerning personal information, pricing, credit, banking details, intellectual property, trade plans, will be received in strict confidence and not be divulged to any person, and be used only for this Agreement.

The signature by a Party of a counterpart of this Agreement shall be as effective as if that Party had signed the same document as the other Parties.

Each Party warrants to the other that it has the legal powers, capacity, and authority required to conclude and implement this Agreement and that such conclusion and implementation do not conflict with any obligation or restriction applicable to such Party.

14. Signatures:

Supplier

Name: [Supplier's Representative Name]

Signature: _____

Date: _____

Off-Taker

Name: [Off-Taker's Representative Name]

Signature: _____

Date: _____



Literature Sources within Toolbox

Grimble, R. and Wellard, K. (1997) Stakeholder Methodologies in Natural Resource Management: A Review of Principles, Contexts, Experiences and Opportunities. *Agricultural Systems*, 55, 173-193. [http://dx.doi.org/10.1016/S0308-521X\(97\)00006-1](http://dx.doi.org/10.1016/S0308-521X(97)00006-1)

Reed, M. S. 2008. Stakeholder participation for environmental management: a literature review. *Biological Conservation* 141:2417-2431.

Richards, C., C. Carter, and K. Sherlock 2004. Practical approaches to participation SERG policy brief no. 1. Macauley Land Use Research Institute, Aberdeen, Scotland.

Durham E., Baker H., Smith M., Moore E. & Morgan V. (2014). The BiodivERsA Stakeholder Engagement Handbook. BiodivERsA, Paris (108 pp).

Varvasovszky Z, Brugha R. A stakeholder analysis. *Health Policy Plan*. 2000 Sep;15(3):338-45. doi: 10.1093/heapol/15.3.338. PMID: 11012410.

Vogler, D., Macey, S., Sigouin, A. (2017). Stakeholder Analysis in Environmental and Conservation Planning. *Lessons in Conservation*, Vol. 7, pp. 5-16.

Morgan, P., Taschereau, S. (1996). Capacity and institutional assessment: Frameworks, Methods and Tools for Analysis, Canadian International Development Agency, Quebec.

Useful website links:

- <https://www.mindtools.com/a4wo118/smart-goals>
- <https://www.linkedin.com/advice/3/how-do-you-align-your-smart-goals-stakeholders>