



RIBES

REGIONAL INCLUSIVE BIOBASED
ENTREPRENEURSHIP SOLUTIONS

DELIVERABLE 4.2

Capacity-building methodology

Olesia Willmann (BIOCOM)

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Regional Inclusive Biobased Entrepreneurship Solutions

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ABBREVIATIONS

MTF	Multi-actor Transformative Forum
ToC	Theory of Change
MSC	Most Significant Change

EXECUTIVE SUMMARY

The RIBES project aims to foster the development of a sustainable and inclusive bioeconomy in ten European regions with lower innovation performance by promoting participatory governance, socially innovative business models, and the integration of circular bioeconomy principles into rural development pathways. While primarily focused on sub-national implementation, the project also seeks to influence national-level transformation through targeted governance solutions.

A central mechanism for achieving this is the establishment of ten Multi-Actor Transformative Forums (MTFs)—collaborative platforms where stakeholders from public, private, and civil society sectors co-develop tailored solutions to regional challenges. These forums employ co-development workshops as participatory problem-solving spaces, strengthening governance capacity and embedding societal and economic innovation in regional transformation strategies.

Following a review of planning and evaluation frameworks, including the Logic Model, Outcome Mapping, Most Significant Change, and Theory of Change (ToC), WP4 selected ToC as the most suitable methodology. ToC provides flexibility, aligns strategically with sustainability goals, and supports participatory, bottom-up planning. Its framework links long-term visions to specific steps while considering context-specific factors, fostering stakeholder ownership and adaptability.

The RIBES adaptation of ToC involves defining:

- Impact: long-term systemic change.
- Outcomes: medium-term changes in behaviours, policies, and practices.
- Outputs: tangible deliverables such as workshops, tools, and reports.
- Activities: targeted interventions, including policy dialogues, training, and pilot projects.
- Inputs: resources and conditions necessary for action.
- Assumptions: underlying conditions for success.
- Indicators: measurable evidence of progress.

Workshops will apply a “middle stage” ToC approach, building on existing regional knowledge and initiatives. Pre-formulated ToC elements, tailored for each region, are based on previous MTF findings and contextual analyses, described in Deliverable 2.2 *Regional ecosystems mapping and surveying report* (Müller et al., 2025), ensuring alignment with real-world needs and innovation potentials. The supporting tool “Theory of Change for Regions” includes regional profiles, barriers, and guiding questions, enabling participants to design context-specific activities and outputs collaboratively.

This methodology ensures that RIBES not only plans for systemic transformation but also continuously adapts to evolving challenges, enabling regions to strengthen innovation ecosystems, enhance governance, and create sustainable bioeconomy-driven growth. The final version of the RIBES capacity building materials, based on the feedback received from the 3rd MTF progress meetings, is due as RIBES Deliverable 4.3 in January 2026.

1. Introduction

The goal of the RIBES project is to meet the need to boost the adoption of biobased innovations through innovative governance and business models developed at the intersection of the circular bioeconomy, social innovation, and rural development in ten European regions that lag in innovation. Although the project activities will mainly focus on the sub-national level, efforts will be made to proactively promote new changes at the country level. RIBES will conduct a multidisciplinary analysis of regional bioeconomy ecosystems, examine potential links between current socio-economic trends and modernization barriers, and propose tailored governance solutions to promote circular bioeconomy innovations and practices. One key outcome of the RIBES project will be the launch of ten local Multi-actor Transformative Forums (MTFs), where all stakeholders involved in desired changes can engage in a systematic transformative process based on the pillars of technological, social, and economic innovation to develop customized solutions for their region collaboratively.

The goal of Task 4.2 is to build a capacity for RIBES partners and regional MTFs to conduct co-development workshops focused on inclusive circular bioeconomy governance effectively. Co-development, as a participatory approach, is based on the idea that complex societal challenges cannot be solved with a top-down method alone. Instead, it requires collaborative problem-solving and shared decision-making among stakeholders. In the context of WP4, co-development workshops function as a driver for joint problem-solving among local MTFs. These workshops will bring together actors from the public, private, and civil society sectors to coordinate efforts, define shared goals, and develop tailored approaches that address regional challenges. In doing so, they strengthen governance capacities and foster the uptake of novel forms of societal and economic innovation.

The main beneficiaries of the Task 4.2 outcomes are Task 4.3, which encompasses the implementation of the methodology to conduct regional co-development workshops. Here, the methodology developed in D4.2 will provide a common framework to guide participatory processes and ensure consistency across different regional contexts. In addition, Task 4.4 will directly build on these results, as the synthesis of workshop outcomes and the formulation of recommendations depend on the structured inputs and methodological coherence provided by Task 4.2.

2. Literature Review

Considering the complexity of the sustainability transition, the RIBES project requires a methodology that combines participatory engagement, strategic planning, and a systemic perspective on the regional innovation ecosystem. Such an approach is necessary to ensure that diverse local stakeholders (farmers, biomass producers, social entrepreneurs and innovators, civil society, academic and research, policy makers and regulators, business experts, foresters and environmentalists, industry, investors, and financial advisors) can provide a meaningful contribution to shape the direction of change. Participation fosters local ownership and inclusivity, ensuring that practical knowledge of the regional context informs planning. Strategic vision is an important part in connecting long-term regional goals with concrete actions, highlighting leverage points, and providing a consistent roadmap for implementation. A systemic perspective is essential in the circular bioeconomy, where interconnected environmental, social, and economic challenges must be addressed simultaneously. Sustainable transition is often viewed as a wicked problem – a problem that is unclearly defined, context-dependent, and without a single clear solution – which justifies avoiding linear, mechanistic approaches (Darling, 2024). Therefore, methodologies based on design thinking and a holistic approach emphasize iterative, participatory, and adaptive strategies to better cope with such complexity. To meet these requirements, the co-development workshops will employ a methodology that combines these elements in a coherent and practical framework. According to the literature research, several well-established methods were chosen for comparison based on their relevance and applicability to regional sustainable transition, such as Social Life Cycle Assessment, Logic Model, Outcome Mapping, Most Significant Change, and Theory of Change.

Social Life Cycle Assessment (S-LCA) is a method built upon the traditional Life Cycle Assessment framework to evaluate social and socio-economic impacts associated with products or services across their lifespans—from raw material extraction to disposal (Gompf et al., 2020; Wintjes et al., 2025). While S-LCA offers valuable tools to surface social issues tied to value chains and explore stakeholder impacts, its limitations—particularly in data intensity, standardization, and transformation guidance—make it complementary rather than central to the RIBES project (*Social Life Cycle Assessment (S-LCA) - Life Cycle Initiative*, 2013). RIBES' focus is on co-creation, governance change, and adaptive transformation, while S-LCA is a rather descriptive method serving analytical purposes. Moreover, S-LCA is often applied at the product or supply chain level (e.g., for bio-based plastics or agri-food products), making it less suited for capturing regional dynamics for sustainable bioeconomy transition that RIBES aims to foster.

The well-known method called the Logic Model is commonly used for project planning and evaluation, offering a clear structure, sequencing from inputs to outputs and outcomes, and a focus on implementation (*Introduction to Logic Models*, 2021). It is especially effective in structured program settings, where goals, timelines, and activities are predefined (Mills et al., 2019). However, it supports a top-down approach, remains relatively mechanistic, and presents a linear view of desired change (*Theory of Change vs Logic Model | Sopact*, n.d.). This stands in contrast to the systemic, non-linear understanding of sustainable bioeconomy transition emphasized in Deliverable 2.1. and the shared conceptual framework adopted by RIBES (Wintjes et al., 2025).

Outcome Mapping is another participatory method that focuses more on behavioral changes among key stakeholders, known as “boundary partners,” their relationships, partnerships, and strengths rather

than on long-term, systematic impacts (Earl et al., 2020; Müller et al., 2025). It is beneficial when working in an uncertain environment where control over results is limited (Earl et al., 2020). While it promotes stakeholder ownership and reflection, it lacks a clear emphasis on long-term visioning or structural transformation (*Outcome Mapping | Better Evaluation*, 2024), both of which are crucial for the sustainability transition and the adoption of innovations within the framework of the RIBES project.

Another version of the qualitative The Most Significant Change (MSC) method involves collecting and analyzing personal accounts of change. Stakeholders are encouraged to share stories about what they see as the most significant change from a project (*Most Significant Change | Better Evaluation*, 2024). These stories are then analyzed and chosen collectively. This method is particularly good at uncovering unexpected outcomes and personal experiences, especially in complex situations (*The 'Most Significant Change' Technique - Davies & Dart - (2005) | Capacity4dev*, n.d.). However, this story-based, open-ended approach is retrospective and interpretive. It is not designed to create a direct path from a problem to a solution or to develop future strategies (*Most Significant Change | Better Evaluation*, 2024).

The last method included in the comparison is the Theory of Change (ToC). It is a planning and reflection tool used to explain and visualize how desired change is expected to occur in specific circumstances (Anderson, 2005). It plays a crucial role in complex systems, where many stakeholders, uncertainties, and interdependent factors are involved. The ToC also encourages participants to consider not only what activities should be implemented but why they matter, who should be involved, and what assumptions support their success (*Theory of Change vs Logic Model | Sopact*, n.d.). This deepens strategic thinking and offers a practical foundation for tracking progress and adjusting actions over time (McLellan, 2021; Reinholz & Andrews, 2020). However, methods that address the full complexity of the context require time and effort at the cognitive, emotional, and social levels (Deutsch et al., 2021).

Among the reviewed methods, the ToC stands out as the most suitable approach for the RIBES project thanks to its flexibility, depth, and alignment with the project's goals. The main question of this method is "What kind of change do we want to see and what needs to happen to achieve it?" Unlike more linear or retrospective methods, ToC allows regional stakeholders to collaboratively outline a potential pathway for change, connecting long-term visions with concrete steps while considering contextual conditions. Its participatory approach fosters co-development of a new governance model, regional strategy, and policy practices by including diverse voices in the planning process and a bottom-up approach, which helps ensure relevance and a sense of ownership (Anderson, 2005; Breuer et al., 2016). Additionally, ToC logic promotes experience sharing and adaptation, which are vital in the evolving context of circular bioeconomy governance, where solutions must stay responsive to regional needs, emerging innovations, and policy developments.

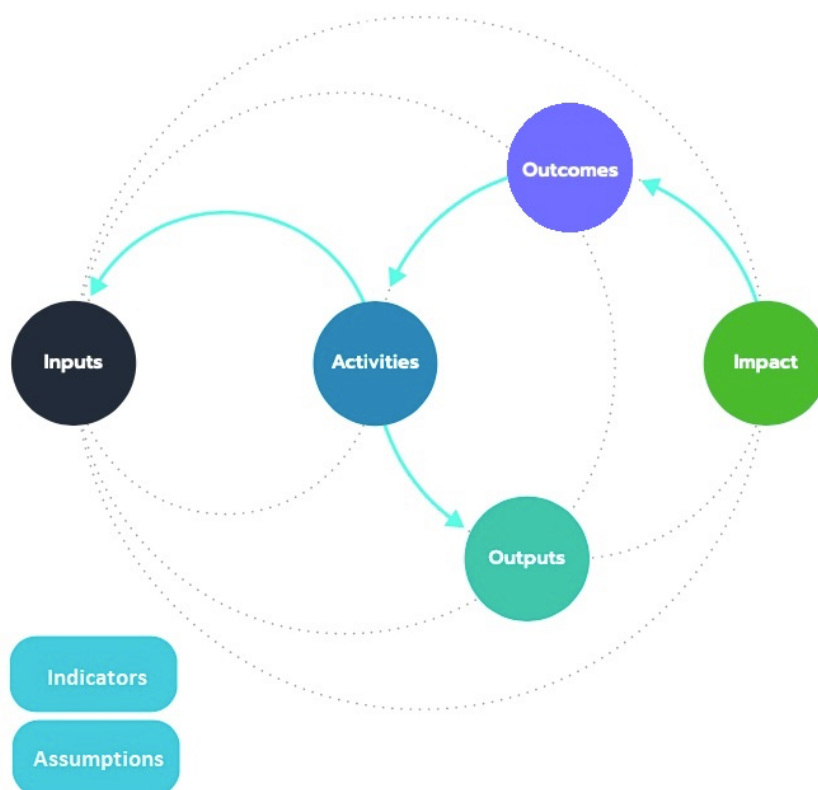
3. Theory of Change: Methodology

The following chapter outlines the core elements that make up the structure of The Theory of Change, including impact, outcomes, outputs, activities, inputs, assumptions, and indicators. The definitions, descriptions, conceptual distinctions, and further steps of practical development of ToC provided here are primarily based on the MOTION Handbook: Developing a Transformative Theory of Change (*Motion Handbook: Developing a Transformative Theory of Change – Transformative Innovation Policy Consortium*, n.d.), which the Transformative Innovation Policy Consortium developed (see Fig.1 for the visual illustration of its core elements).

ToC draws the step-by-step pathway from the desired long-term impact to the input that needs to be brought into action, by indicating specific activities and interventions leading to the planned transformation. This pathway includes the following core elements (refer to Table 1 for more details):

- Impact: long-term transformation
- Outcomes: changes in behavior, policies, systems
- Outputs: tangible results
- Activities: actions taken
- Inputs: resources, capacities
- Assumptions: the underlying belief that needs to be formulated and kept accurate for further steps
- Indicators: measurable outcomes to track the progress

Figure 1 : The visual representation of the Theory of Change methodology.



3.1 Impact

Impact defines the long-term, systemic changes that the project aims to achieve. It embodies the project's vision and its ultimate goal and refers to gradual and sustained changes that happen over an extended period, often beyond the project's immediate lifecycle. Systemic, profound, and structural change describe the transformed way the system functions – across institutions, behaviors, norms, practices, and policies.

Examples in the RIBES context:

A long-term systemic impact might be the integration of circular bioeconomy principles into regional economic policies, or the emergence of new regional markets for bio-based products, or the transition of a region's agri-food sector to regenerative and circular models, supported by a new governance framework, education programs, and cross-sector cooperation.

3.2 Outcomes

Outcomes refer to the short- to medium-term changes in behavior, practices, relationships, capacities, or policies that result from project output and activities. Outcomes are the real signs of transformation coming into action. They reflect how the system is responding to the project interventions. Outcomes are more challenging to measure than outputs, as they involve human behavior, institutional changes, and network dynamics.

Examples in the RIBES context:

Short- to medium-term outcomes might be that regional stakeholders begin collaborating more closely across sectors, local policies integrate circular bioeconomy principles, increased investment or interest in biobased startups, or stakeholders adopt new sustainable practices.

3.3 Outputs

Outputs are the immediate and measurable products or deliverables of activities. They are typically short-term results that show whether planned activities were implemented or conducted successfully. However, they do not reflect the changes themselves. They are the “first step” on the pathway of change. In monitoring and evaluation, outputs are easier to quantify and are often used for reporting and accountability.

Examples in the RIBES context:

The short-term outcomes can be the number of workshops conducted, the number of stakeholders engaged, workshop materials, reports, a list of recommendations, online platforms or tools for regional collaboration, a pilot project proposal, or a funding application submitted.

3.4 Activities

Activities are the actions that are taken by using available inputs to initiate the change. They are usually what the team and partners do – whether that involves producing something, delivering services, or engaging with stakeholders. Activities are the operational core of ToC; they are not just “tasks”, they must be planned thoroughly as well-considered interventions.

Examples in the RIBES context:

Activities can vary from educational campaigns on sustainable practices, technical trainings, and policy dialogs to hosting multi-actor workshops and supporting pilot projects in regenerative agriculture or waste valorization.

3.5 Inputs

Inputs are primary resources and conditions that a project needs to start and sustain its work. It can be material (e.g., funding, personnel, technology, materials) or immaterial (e.g., political will, community trust, network support). Inputs determine either what is already available or what needs to be mobilized, or which limitations might exist. A careful assessment of inputs ensures that project goals are grounded and conscious.

Examples in the RIBES context:

Inputs might include region-specific knowledge, access to research data, expertise in bioeconomy or sustainability, partnership with universities or local NGOs, EU or regional funding, stakeholder maps, datasets, or networks.

3.6 Assumptions

Once the basic skeleton of the ToC is built, it is significant to add layers. The first layer is called Assumptions ([Fig. 2](#)). It is a critical part because it represents the underlying beliefs or conditions that are expected to hold for the ToC to function. Since Theory of Change is called “a theory”, there is no guarantee that the created plan will lead to the set goals. It is designed to be tested. Assumptions often relate to context and may not always be under the project’s control. They also help define risks, guiding eventual planning and reflection.

Examples in the RIBES context:

Assumptions can vary from “funding mechanisms remain accessible throughout the project lifecycle”, “there is enough interest and capacity for change among SMEs and farmers”, and “stakeholders will actively engage in the proposed initiatives” to “local governments are willing to engage and support new governance models”.

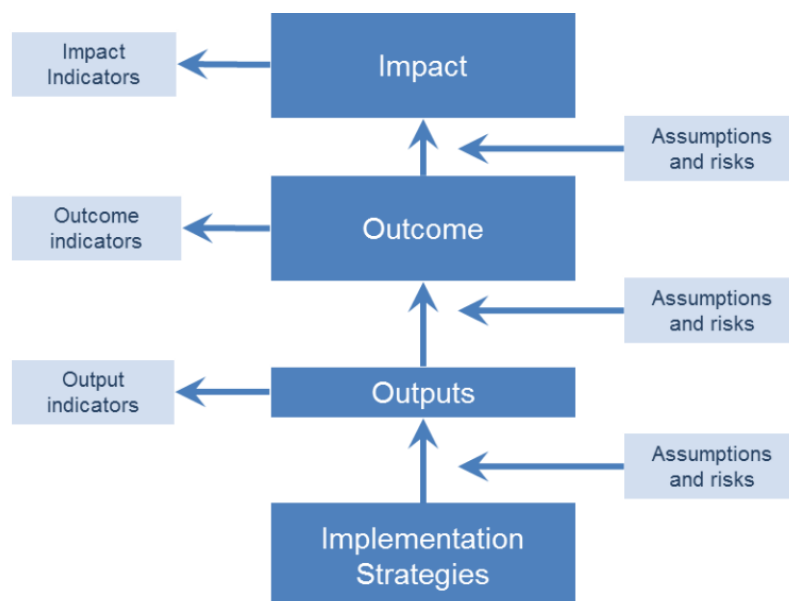
3.7 Indicators

Indicators are specific, observable, and measurable signs that demonstrate whether progress is being made towards achieving outputs, outcomes, and impacts. They help track performance and provide evidence of change throughout the implementation of a project. Indicators ensure that ToC is not only a planning tool but also a learning framework, contributing further to the transformation of the region.

Examples in the RIBES context:

Various types of indicators can be used, including qualitative (e.g., increase in stakeholder cooperation) and quantitative (e.g., number of events, number of stakeholders trained), process- and result-oriented, as well as context-specific and generalizable ones. According to the literature (Diaz-Chavez et al., 2016), indicators can also be developed around the core pillars of sustainability—environmental (e.g., biodiversity), social (e.g., gender), economic (e.g., number of employees), and governance (e.g., voice and accountability)—which serve as an integrated framework for assessing progress toward systemic change. More detailed information about indicators can be found in RIBES Deliverable 4.1, “Appraisal of Governance Practices in CBE/Social Innovation in RIBES Regions,” Chapter 2 (Prozorova, 2025).

Figure 2: Schematic representation of two additional layers in the Theory of Change.



Developing the ToC can be a valuable method at any stage of the initiative. Initially, it may serve as a planning tool to identify the main stakeholders, resources, and their interactions. Additionally, ongoing activities can be revised and adjusted based on new initiatives involved in the process, and potential knowledge gaps can be assessed, which may not have been apparent during the initial planning stage. The ToC can also be applied in the final stage of the project cycle, summarizing the initiative's achievements and supporting accountability and learning from the experience (*Motion Handbook: Developing a Transformative Theory of Change – Transformative Innovation Policy Consortium*, n.d.).

The Theory of Change will be applied for the co-development workshops by using a so-called “middle stage” approach. Rather than starting from scratch, participants will focus on revising the current situation and activities in the regional economy and identifying new business opportunities and possible collaborations to introduce and expand bioeconomy innovations. For this co-development workshop, RIBES will utilize an advanced prepared template with pre-mapped key points of the ToC, as provided by regional partners, to enable a practical and grounded discussion by opening the space for innovative solutions.

The following table ([Table 1](#)) acts as a brief reference summary of the key elements described above, including their definitions and relevant examples within the RIBES context.

Table 1: Core elements of Theory of Change

CORE ELEMENT	DEFINITION & QUESTIONS	EXAMPLES
Impact	Long-term systemic change that contributes to broader goals. What do we want to achieve in the future?	The region will get a hub for green startups. Stakeholders regularly exchange knowledge. New job places will be opened. Local businesses will apply new principles.
Outcomes	Changes in behavior, policies, knowledge or system resulting from outputs. Which profit will stakeholders take from our activities? What will be changed?	Local entrepreneurs will implement the CBE practices. Local entrepreneurs will secure green investments. Local policies will adapt to support green start-ups.
Outputs	The direct tangible result of an activity. What will we produce?	Local entrepreneurs will participate in a workshop about sustainable practice. Farmers will receive trainings. New policy proposal will be drafted. A networking platform will be launched.
Activities	Actions or interventions undertaken to create change. What will we physically do?	Conduct a workshop. Provide mentorship. Develop online platform.
Inputs	Resources, funding, staff and infrastructure needed to carry out activities. Which resources are needed?	Budget, experts, trainers, training materials, location, government support.
Assumption	Underlying belief for future activities to lead to outcomes and impact. What do we think the current situation looks like? Who is interested in what?	Local government is interested in improving green economy practices. Entrepreneurs are interested in getting trained. There are volunteers to promote campaign.
Indicators	Measurable outcome of actions and changes, allowing for tracking the progress. How do we understand that changes are happening?	Number of experts involved. Number of meetings and/or collaborations established. Number of pilot projects launched.

4. Theory of Change: Step by Step

4.1 Define the Impact

The basic principle of this approach is to work backwards, step by step, from impact to the necessary inputs. The first step in creating a theory of change is to define its long-term impact. It should be ambitious yet achievable. To do so, the following question can be considered:

- a) Where do we want to go?
- b) What does the desired changed situation look like in the future?
- c) Addressing the economic and societal challenges, which fundamental large-scale positive changes does our initiative contribute to?
- d) Which fundamental and systematic positive changes does our initiative address?
- e) Since the primary goal of the RIBES project is to facilitate the uptake of biobased innovations in lagging regions, the possible impact might be formulated towards the following idea.

4.2 Identify the Outcomes

Once the big vision of potential changes is formulated and approved by local stakeholders, the next step is to identify the outcomes, which can also be seen as the mid-term impact of the project. Outcomes are changes in behavior, policies, knowledge, or systems resulting in the previously defined desired impact. To support a more precise and more structured development of new ideas, it is helpful to explore them in separate sections, such as institutional and social change, networks, policy, and the co-creation process. For each area, the following questions can be addressed.

- a) What are the most important changes that need to happen in the next 2-5 years to move towards our goal?
- b) Which signals need to be reached to trigger the positive change you aim for?
- c) Are the new forms of social innovations to be implemented?
- d) Which new business opportunities can be found in our region?
- e) Are there new markets that can be developed or expanded?
- f) Which new practices can be implemented and promoted in our region?
- g) Which organizational or institutional changes can be promoted?
- h) Which new network can be created?

4.3 Outline the Activities

Activities are specific actions that must be taken to achieve the desired changes. For the outcomes described and discussed above, participants need to consider concrete steps that suit their regional context. The following questions can serve as a starting point:

- a) What are we already doing in this direction that we could build on or make stronger?
- b) What activities could be organized to address current barriers?
- c) Which type of pilot projects, campaigns, and partnerships would be profitable in our region? How to establish them?
- d) Where and how can we raise awareness of desired changes to shift the mindset in society? Who is our focus group?

- e) What support do people or organizations need to make the change happen?

4.4 Specify the Outputs

Outputs are immediate, measurable, and tangible results of activities. For the activities outlined above, participants need to discuss the possible outputs. For example:

- new technologies, tools, knowledge, and service
- new or improved knowledge
- new practices or institutional changes
- prototypes of innovations
- identified new markets and business opportunities, expanding on existing markets
- creating new business models
- identifying new financial opportunities, tools that support business development

4.5 Clarify the Inputs

The next step is clarifying the inputs, or in other words, which resources, funding, staff, and infrastructure are needed to carry out the planned activities. For each action above, participants need to consider a list of necessary capacities that must be mobilized. To help with this step, the following questions can be asked.

- a) What do we already have to support the process?
- b) What else do we need to bring to the table to support planned activities?

4.6 Formulate the Assumptions

Many actors, factors, and unpredictable political and economic situations can disrupt the intended impact of the intervention. It is crucial to establish the assumptions, even though they introduce some complexity to the overall framework ([Fig.2](#)). This helps stakeholders keep the plan more realistic by highlighting vulnerable points, risks, and uncertainties. When developing the ToC and considering necessary steps and changes, participants assume that certain events or actions will happen. These assumptions can be based on previous experience, research, or simply common sense.

4.7 Choose the Indicators

The second critical layer to add is indicators. They help answer the questions, “How will we know if changes are happening?” and “What evidence would show us we are moving in the right direction?” ([Fig. 2](#)). Indicators make the conceptual framework more practical and ensure accountability. They can be quantitative (numbers, percentages, financial data) or qualitative (interviews, perceptions, case stories).

5. Theory of Change for Regions

A spreadsheet titled "Theory of Change for Regions" ([Appendix A](#)) has been prepared as a supporting tool for workshop facilitators. It includes preliminary suggestions for core Theory of Change elements, Impact, Outcomes, and Inputs, based on insights from the Multi-Actor Transformative Forums workshops held in Summer 2024 by RIBES WP2 and results described in RIBES Deliverables D2.1 and D2.2 (Müller et al., 2025; Wintjes et al., 2025). During the series of workshops, open-ended questions were raised:

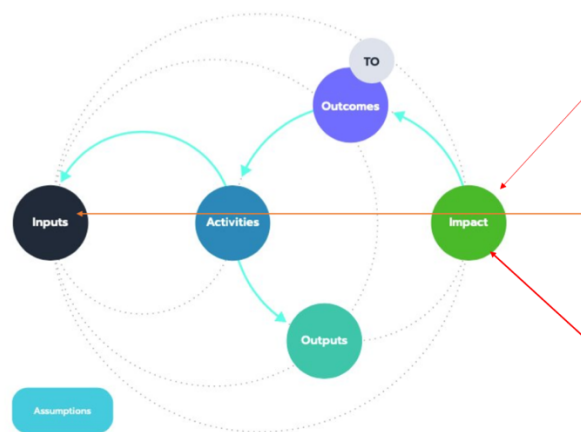
- a) What do the concepts of 'social innovation' and 'bioeconomy' mean in your region?
- b) What kind of transformation is most relevant for your Region and your Multi-actor Transformative Forum? (e.g., economic, ecological, circular, social transformation, challenges of governance)
- c) What is the dominant bioeconomy conception in the region?
- d) What social innovations (if any!) can be identified (especially those that contribute directly or indirectly to the regional bioeconomy)?
- e) What (portfolio of) bio-based products and supply/value chains can be identified?
- f) Are there specific policy instruments or initiatives in your region?
- g) How active or inactive are the sectors in your region in the case of bioeconomy?
- h) Are there specific barriers, needs, or linkages?

Based on the participants' answers, brief summaries for each region were created and used as sources of information for ToC development (Müller et al., 2025). These regional insights helped to identify context-specific challenges, innovation potentials, and systemic gaps, ensuring that the preliminary formulation of core elements for further workshop development reflected not only theoretical considerations but also practical, experience-based knowledge. In some sections of the regional brief descriptions, content directly aligned with specific core elements of ToC (e.g., Inputs), while in others, relevant suggestions were synthesized by combining insights from multiple sections to ensure they fit the context ([Fig. 3](#)). For example, in the case of Plovdiv Region in Bulgaria, the proposed Impact goal was formulated by integrating content from the short description section, Relevant Transformation, Needs, and Linkages sections. These pre-formulated suggestions are meant to serve as guidance and inspiration. Regional partners should adapt them based on their local knowledge and specific context before the workshop. During the workshop, participants might also add missing ideas and suggestions to the initially defined elements.

Figure 3: Schematic explanation of the origin of the pre-formulated ToC core elements

DELIVERABLE D2.1**Literature review and conceptual**

framework; The role of social innovation in transitioning the bioeconomy for sustainable rural development



- **Plovdiv Region, Bulgaria**

Plovdiv has a well-established agricultural sector with strong traditions in food production and winemaking. However, social entrepreneurship is underdeveloped. Initiatives exist to employ groups in agribusiness and tourism, but they require better coordination and education. Bioeconomy is largely unknown among rural populations, though the Agricultural University actively promoting circular bioeconomy principles. Future efforts should focus on expanding and valorizing agricultural waste for bioenergy and bioproducts.

Relevant Transformation: Developing sustainable bio-based business models for SMEs ; investments in circular economy practices.

Biobased Products and Value Chains: Agri-food production, winemaking, organic waste bioenergy solutions.

Policy Initiatives: Regional Innovation Strategy, National Bioeconomy Integration Plan.

Strong Actors: Agricultural University of Plovdiv, municipal authorities, regional business

Active Sectors: Agriculture, food production, renewable energy.

Barriers: Lack of awareness and investment in bio-based technologies.

Needs: Business development support, training programs, access to financing.

Linkages: Enhancing collaboration between research institutions, local enterprises, and p

To support the preparatory process for the workshop, an additional column titled "Barriers" has been added. This column highlights existing challenges identified in each region. It is invaluable during the step where participants need to define activities and are asked to answer the question: "What activities could be organized to address current barriers?" Facilitators may either present these suggested barriers or guide participants in brainstorming their own, based on the topic being discussed.

Another column, "Short Description of the Region," offers a contextual overview to help frame the Theory of Change discussion within each regional setting.

The "Activities" and "Outputs" columns have been deliberately left blank to align with the workshop's goal: to collaboratively identify relevant activities and examine their potential outputs concerning the desired outcomes and impacts.

The preliminary version of the "Theory of Change for Regions" supporting tool has been shared with the RIBES MTFs before the MTF progress meeting in June 2025. The received feedback will be incorporated into the final version of the RIBES capacity building materials, which will be submitted as RIBES Deliverable 4.3 in January 2026.

6. Literature

- Anderson, A. A., Ph D. (2005). *The Community Builder's Approach to Theory of Change: A Practical Guide to Theory Development* (Spi edition). Aspen Inst Human Studies.
- Breuer, E., Lee, L., De Silva, M., & Lund, C. (2016). Using theory of change to design and evaluate public health interventions: A systematic review. *Implementation Science*, 11(1), 63. <https://doi.org/10.1186/s13012-016-0422-6>
- Darling, S. B. (2024). Tackling Wicked Sustainability Problems. *ACS Sustainable Resource Management*, 1(1), 4–5. <https://doi.org/10.1021/acssusresmgt.3c00133>
- Deutsch, L., Belcher, B., Claus, R., & Hoffmann, S. (2021). Leading inter- and transdisciplinary research: Lessons from applying theories of change to a strategic research program. *Environmental Science & Policy*, 120, 29–41. <https://doi.org/10.1016/j.envsci.2021.02.009>
- Diaz-Chavez, R., Stichnothe, H., & Johnson, K. (2016). Chapter 4–Sustainability Considerations for the Future Bioeconomy. In P. Lamers, E. Searcy, J. R. Hess, & H. Stichnothe (Eds.), *Developing the Global Bioeconomy* (pp. 69–90). Academic Press. <https://doi.org/10.1016/B978-0-12-805165-8.00004-5>
- Earl, S., Carden, F., & Smutylo, T. (2020). *Outcome Mapping: Building Learning and Reflection into Development Programs*. International Development Research Centre (IDRC). <https://www.outcomemapping.org/resources/om-manual>
- Gompf, K., Traverso, M., & Hetterich, J. (2020). Towards social life cycle assessment of mobility services: Systematic literature review and the way forward. *The International Journal of Life Cycle Assessment*, 25(10), 1883–1909. <https://doi.org/10.1007/s11367-020-01788-8>
- Introduction to logic models*. (2021, September 17). GOV.UK. <https://www.gov.uk/government/publications/evaluation-in-health-and-well-being-overview/introduction-to-logic-models>
- McLellan, T. (2021). Impact, theory of change, and the horizons of scientific practice. *Social Studies of Science*, 51(1), 100–120. <https://doi.org/10.1177/0306312720950830>
- Mills, T., Lawton, R., & Sheard, L. (2019). Advancing complexity science in healthcare research: The logic of logic models. *BMC Medical Research Methodology*, 19(1), 55. <https://doi.org/10.1186/s12874-019-0701-4>
- Most significant change / Better Evaluation*. (2024, June 28). <https://www.betterevaluation.org/methods-approaches/approaches/most-significant-change>
- Motion handbook: Developing a Transformative Theory of Change – Transformative Innovation Policy Consortium*. (n.d.). Retrieved August 29, 2025, from <https://tipconsortium.net/publication/motion-handbook-developing-a-transformative-theory-of-change/>
- Müller, M., Fischer, L., & Pyka, A. (2025). *Regional ecosystems mapping and surveying report* (RIBES Project Deliverable No. D2.2; pp. 1–94). <https://ribesproject.eu/deliverables/>

- Outcome Mapping | Better Evaluation*. (2024, July 3). <https://www.betterevaluation.org/methods-approaches/approaches/outcome-mapping>
- Prozorova, I. (2025). *Appraisal of governance practices in circular bioeconomy and social innovation in RIBES regions* (RIBES Project Deliverable No. D4.1). <https://ribesproject.eu/deliverables/>
- Reinholz, D. L., & Andrews, T. C. (2020). Change theory and theory of change: What's the difference anyway? *International Journal of STEM Education*, 7(1), 2. <https://doi.org/10.1186/s40594-020-0202-3>
- Social Life Cycle Assessment (S-LCA)–Life Cycle Initiative*. (2013, February 1). <https://www.lifecycleinitiative.org/starting-life-cycle-thinking/life-cycle-approaches/social-lca/>
- The 'Most Significant Change' Technique–Davies & Dart–(2005) | Capacity4dev*. (n.d.). Retrieved August 29, 2025, from https://capacity4dev.europa.eu/library/most-significant-change-technique-davies-dart-2005_en
- Theory of change vs logic model | sopact*. (n.d.). Retrieved August 29, 2025, from <https://www.sopact.com/guides/theory-of-change-vs-logic-model>
- Wintjes, R., Müller, M., & Türkeli, S. (2025). *Literature review and conceptual framework; The role of social innovation in transitioning the bioeconomy for sustainable rural development*. (RIBES Project Deliverable No. D2.1; pp. 1–94). <https://ribesproject.eu/deliverables/>

7. Appendix A

Core Elements of ToC	Inputs	Activities	Outputs	Outcomes	Impact	Barriers	Short Description of the region
Region	Resources, funding, staff and infrastructure needed to carry out activities	Actions or interventions undertaken to create change	The direct tangible result of an activity	Changes in behaviour, policies, knowledge or system resulting from outputs	Long-term systematic change that contributes to broader goals. What do we want to achieve in the future?		
Question	Which resources do we already have? Which are still needed?	What will we physically do?	What will we produce?	Which profit will stakeholders take from our activities? What will be changed?	What do we want to achieve in the future?		
Nitra Region/Slovakia (BEC)	Biobased Products and Value Chains: High-value crops such as saffron, biochar production from biowaste; organic fertilizers; food processing byproducts repurposed for animal feed. Strong Actors: Slovak University of Agriculture, Bioeconomy Cluster, Ministry of Agriculture, local start-ups. Active Sectors: Agriculture, renewable energy, waste management, biotechnology.			Increased adoption of precision and smart farming techniques by small and medium-sized farms, youth and marginalized groups trained and employed in tech-related agricultural farms, growth in bio-based value chains, improved collaboration between stakeholders, stronger R&D partnership	Leveraging investments to support circular bioeconomy development while ensuring digitalization does not lead to job losses. Incorporating precision agriculture and smart farming techniques.	Lack of private investments and awareness of bioeconomy potential; bureaucratic challenges in obtaining funding	The Nitra region has a strong agricultural tradition, but the bioeconomy is evolving to integrate digitalization and technological advancements. The focus is on knowledge-sharing and training young entrepreneurs in innovative farming techniques, such as vertical and indoor farming. Social innovation in the region includes integrating marginalized groups into labor-intensive agricultural sectors. A combination of traditional farming methods and advanced technological solutions is being explored to ensure sustainability and resilience in the agricultural sector.
North Aegean Region/Greece (MedNA)	Biobased Products and Value Chains: Olive oil, essential oils from organic waste, biogas from olive mill waste, seeds to table agribusiness models. Strong Actors: University of the Aegean, agricultural cooperatives, Terra Nativa initiative. Active Sectors: Agriculture, food processing, waste valorization, eco tourism, agroecology.			new collective and community-based food enterprises, stronger cooperation between tourism and agro-food actors, more entrepreneurial education opportunities for youth and small producers, increased local value creation	Strengthening governance frameworks and fostering collective entrepreneurial action to support sustainable food entrepreneurship	Lack of regional governance for innovation, small-scale production constraints, high logistics costs due to island geography	This insular region remains only partially affected by tourism compared to other Greek islands. Social entrepreneurship is underdeveloped, but new initiatives are emerging, particularly in intangible cultural heritage and food-related innovations. The region's bioeconomy is primarily focused on small-scale farming, and the University of the Aegean has been instrumental in advancing circular bioeconomy research. Sustainable tourism and agroecology have also gained importance in recent years.
Campania Region, Italy (SPRING)	Biobased Products and Value Chains: Agri-food, bioplastics, marine biotechnology, organic fertilizers, nutraceuticals, sustainable fisheries. Strong Actors: Universities, Terra Next incubator, local cooperatives, innovation hubs. Active Sectors: Agriculture, food processing, environmental protection, marine biotechnology, sustainable fisheries.			reduced waste degradation effect on environment, growth of bio-based small and medium business, improved enforcement of environmental laws, more public-private partnership, more active private investment into sustainable production	Circular economic principles applied to waste management and sustainable, food production. Strengthening environmental regulations to combat illegal activities harming ecosystems	High competition from fossil-based industries, underdeveloped infrastructure, regulatory complexity, organized crime interference	Campania has significant potential in the bioeconomy due to its strong agricultural base. The region aims to integrate technological advancements with industrial sectors to develop sustainable agricultural practices and bio-based products. Social innovation plays a key role in combating environmental degradation caused by organized crime (ecomafia). Food and beverage industries, alongside marine bioeconomy, are also developing rapidly.
Pannonian Region, Croatia (EHP)	Biobased Products and Value Chains: Biomass pellets, biofuels, bio-based plastics, essential oils, organic and specialty foods, regenerative agriculture initiatives. Strong Actors: Universities, cooperative networks, government agencies, regenerative farming. Active Sectors: Agriculture, forestry, bioenergy, food processing, sustainable land management			Increased quality of the agricultural resources and products, increased productivity due to newly adopted technologies, integration of sustainability education, stronger rural cooperatives	Transitioning to more sustainable agricultural practices that enhance productivity and protect natural resources	Limited infrastructure, funding constraints, outdated regulatory frameworks, lack of consumer awareness of sustainable products	The Pannonian bioeconomy is centered on agriculture and forestry, with a focus on renewable biological resources for food, feed, and bioenergy. The region is advancing innovative agricultural practices like precision farming and organic agriculture. Social innovation efforts include cooperative farming models, rural development projects, and digitalization of agriculture. There is a strong focus on soil preservation and biodiversity.
Vojvodina region, Serbia (FTS)	Biobased Products and Value Chains: Healthy food production, biofuels, and organic fertilizers. Strong Actors: Universities, agricultural cooperatives, Ministry of Environmental Protection. Active Sectors: Agriculture, food and beverage production, renewable energy.			Wider adoption of sustainable and circular agricultural practice, enhancing rural value chain for healthy food and bio-products, improved engagement of rural and marginalized populations, increased utilization of agricultural byproducts	Supporting sustainable agriculture and rural development through participatory decision-making and value chain mobilization.	Lack of financial incentives, low awareness of bioeconomy practices.	Vojvodina has a strong agricultural foundation and is increasingly exploring bioeconomy innovations. The region seeks to enhance rural development through sustainable agriculture and participatory decision-making. Social innovation in Vojvodina is seen as a means to mobilize relevant stakeholders and address socio-economic challenges. The bioeconomy here revolves around biomass production, with a strong emphasis on agriculture, food production, and renewable energy. Sustainable agricultural practices and the production of "healthy food" are focal points. A significant transformation involves utilizing agricultural
Western Balkan region (BRDN)	Biobased Products and Value Chains: Biogas, biofuels, biodegradable materials, forestry-based bio-products. Strong Actors: Regional development networks, international partnerships, policy-making bodies. Active Sectors: Agriculture, forestry, renewable energy			Increased implementation of circular economy practices, more social innovation initiatives (as agro-tourism, youth cooperatives, waste valorization), regional cross-border partnership	Strengthening policy frameworks to support social innovation and bioeconomy development	Fragmented regulations, limited investment in bioeconomy initiatives	This region is leveraging agricultural biodiversity to tackle unemployment, migration, and environmental sustainability. Social innovation initiatives focus on agro-tourism and circular economy practices to create job opportunities and enhance environmental resilience. Bioeconomy is rooted in biomass production, with an emphasis on biogas, biodegradable materials, and renewable energy solutions. Policy and legislative reforms are necessary to facilitate broader adoption of bioeconomic practices.
Sibiu region/Central Romania (ULB)	Biobased Products and Value Chains: Biotechnological innovations in agriculture, food processing waste valorization, organic fertilizers, biofertilizers. Strong Actors: Lucian Blaga University of Sibiu, regional government, local agricultural enterprises. Active Sectors: Biotechnology, agriculture, environmental management.			adoption of circular and bio-based technologies in agriculture, food processing and environment management, increased use of biotechnological innovations, new business models, improved governance capacities for one-Health-oriented bioeconomy transition	Integrating circular bioeconomy approaches into the "One Health" concept, enhancing environmental health, food security, rural economy, and natural landscape preservation.	Limited infrastructure, high investment costs for bio-based technologies, and over 52% protected areas	Sibiu is focusing on integrating circular bioeconomy approaches to support environmental sustainability, healthy food production, and rural revitalization. The bioeconomy is linked to biotechnological advancements and industrial applications, where waste products are repurposed into new bio-based solutions. The region emphasizes the need for governance support, legal frameworks, and financial incentives to make bio-based innovations economically viable. Moreover, as Sibiu County is covered for more than 52% with protected areas, it is focusing on finding solutions to integrate bio-based solutions with nature-based – solutions and natural landscape preservation.
Podkarpackie Region, Poland (QPL)	Biobased Products and Value Chains: Biogas, biofuels, wood pellets, biodegradable packaging, organic fertilizers from agricultural waste, renewable construction materials, low-impact (traditional) agricultural production. Strong Actors: University of Rzeszów, Rzeszów University of Technology, regional agricultural cooperatives, Polish Biomass Chamber, Podkarpackie Agricultural Advisory Center, Marshal's Office, local clean-tech startups. Active Sectors: Agriculture, forestry, renewable energy, advanced manufacturing, clean-tech, natural environment – tourism, wood industry.			expanded use of bio-industrial material, increased valorization of forestry and agricultural waste into bioenergy, enhanced cooperation clean-tech, agriculture and food sector, improved infrastructure for waste management, new support mechanisms and platforms for attracting financing and innovative ideas	Strengthening industrial bioeconomy applications, leveraging forestry and agricultural waste for bio-based solutions, and advancing eco-friendly manufacturing processes and environmentally friendly (without eco certification), reducing the carbon footprint and greenhouse gas emissions (NO ₂ , NH ₃) as well as conserving water resources in production processes.	Limited financial incentives for sustainable practices, underdeveloped waste valorization infrastructure, high competition from conventional industries, slow regulatory adaptation, lack of a platform for collecting and moderating development ideas and initiatives, a traditionalist approach to innovation (lack of trust in trends promoting the bioeconomy), and conservatism in the views of both society and decision-makers (hence, for example, issues with the location of biogas plants).	Podkarpackie is a dynamically developing region with strong potential for integrating bioeconomy principles into its existing industrial and agricultural sectors. The region has a history of forestry and agricultural production, creating opportunities for sustainable bio-based industries. Innovation in biodegradable packaging and renewable materials is also a focus. Agricultural production is carried out based on small, family-run farms, which helps preserve biodiversity (low intensity of monocultural production, e.g., corn, support programs such as the Podkarpacki Regional Grazing initiative, funded by the budget of the Podkarpackie Voivodeship Marshal's Office).
Plodiv region, Bulgaria (AUP)	Biobased Products and Value Chains: Agri-food production, winemaking, organic waste recycling, bioenergy solutions. Strong Actors: Agricultural University of Plodiv, municipal authorities, regional business clusters. Active Sectors: Agriculture, food production, renewable energy.			greater awareness and understanding of bioeconomy among rural population, increased adoption of circular bioeconomy practices, improved integration of marginalized groups, strengthened collaboration between research institutions, locals and government	Developing sustainable bio-based business models for SMEs and fostering investments in circular economy practices.	Lack of awareness and investment in bio-based technologies.	Plodiv has a well-established agricultural sector with strong traditions in food production and winemaking. However, social entrepreneurship is underdeveloped. Initiatives exist to employ marginalized groups in agribusiness and tourism, but they require better coordination and educational support. Bioeconomy is largely unknown among rural populations, though the Agricultural University of Plodiv is actively promoting circular bioeconomy principles. Future efforts should focus on expanding bioenterprises and valorizing agricultural waste for bioenergy and bioproducts.

The project

The **RIBES** project **aims** to enhance the uptake of bio-based innovations in ten (10) European regions by developing new governance and business models that combine social entrepreneurship with rural development, thus advancing the transition to a circular economy.

Coordinator: **CENTRAL EUROPEAN INITIATIVE (CEI)**

PARTNER		SHORT NAME
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	Q-PLAN International	QPL
	ARX.net	ARX.NET
	European Rural Development Network	ERDN

	Agricultural University Plovdiv	AUP
	MedINA	MedINA
	Energy Institute Hrvoje Požar	EIHP
	SPRING	SPRING
	Lucian Blaga University of Sibiu	ULBS
	Rzeszowska Agencja Rozwoju Regionalnego S.A.	RARR
	Balkan Rural Development Network	BRDN
	Faculty of Technical Sciences University of Novi Sad	FTN
	Bioeconomy Cluster	BEC
	FORZA Agency for Sustainable Development of the Carpathian Region	FORZA

CONTACT US: info@ribesproject.eu

VISIT: ribesproject.eu