

Deliverable 4.3

Replication Guide, Toolkit and Policy Recommendations

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DEPLOYING CIRCULAR BIOECONOMIES AT
REGIONAL LEVEL WITH A TERRITORIAL APPROACH



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LEAD AUTHORS (Organisation)	Adriana Čiefová (PED) Radoslav Považan (PED) Kristína Kolárová (PED) Robert Miškuf (PED)
CONTRIBUTORS (Organisation)	Clémentine Roth (S2i) Mar Cátedra (CAP) Samir Sayadi (IFA) Carmen Ronchel (CTA) Dragica Grozdanic (MTU) James Gaffey (MTU) Colm Walsh (SRA) Christos Politis, Andromachi Boikou (QPL)
REVIEWERS	Ioannis Tavantzis (AUTH) Alexandros Skondras (AUTH) Katarína Janurová (ZSK)
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ABBREVIATIONS

CBGM	Circular Bioeconomy Governance Model
CBGMC	Circular Bioeconomy Governance Model Canvas
CCRI	Circular Cities and Regions Initiative
CCRI-CSO	Circular Cities and Regions Initiative – Coordination and Support Office
ESG	Environmental, Social, and Governance
EU	European Union
FAQs	Frequently Asked Questions
MARC	Multi-Actor Regional Constellation
MLW	Mutual Learning Workshop
RCBGMF	Regional Circular Bioeconomy Governance Model Framework
RRI	Responsible Research and Innovation
SDGs	Sustainable Development Goals
TRL	Technology Readiness Level

Executive Summary

The Replication Guide, Toolkit and Policy Recommendations – ROBIN Deliverable 4.3 – serves as a comprehensive and practical resource designed to empower regional authorities, policymakers, and stakeholders to replicate, design, adapt, and implement circular bioeconomy governance models across Europe. The deliverable integrates the key methodologies, tools, and insights generated by the ROBIN project, ensuring adaptability to diverse regional contexts while aligning with the EU Bioeconomy Strategy and Sustainable Development Goals (SDGs).

The Deliverable consists of two core components:

- 1) The Replication Guide and Toolkit**
- 2) The Policy Recommendations List**

Replication Guide and Toolkit

The Replication Guide and Toolkit provide a clear and actionable roadmap for transferring, adapting, and applying the ROBIN project's validated methodologies across Europe's diverse regions. It builds on validated approaches tested in multiple pilot regions within the ROBIN project.

The guide includes comprehensive Replication Steps, which provide detailed instructions on stakeholder engagement, policy analysis, governance model design, resource planning, and performance monitoring. Additionally, it features a practical Toolkit – a comprehensive suite of interactive tools, training modules, glossary, informative resources, and a curated collection of case studies and lessons learnt to support the development and implementation of bioeconomy strategies.

In summary, the Guide is organized into the following sections:

- 1. Instructions on how to use the ROBIN Replication Guide and Toolkit**
- 2. ROBIN Replication Steps**
 - *First Replication Step – INITIATE*: Build Multi-Actor Regional Constellations (MARCs)
 - *Second Replication Step – ASSESS*: Understand Governance Landscape and Analyse Governance Models
 - *Third Replication Step – ENVISION AND PLAN*: Co-CREATE Governance Models
 - *Fourth Replication Step – IMPLEMENT*: Use the ROBIN Toolbox
 - *Fifth Replication Step – EVALUATE*: Monitor, Learn and Engage with the CCRI-CSO
- 3. ROBIN Toolkit**
 - ROBIN Toolbox – Interactive Tools, Training Modules and Resources
 - Glossary and FAQs (Frequently Asked Questions)
 - Informative Materials and Useful Tips
 - Success Stories and Lessons Learnt

Policy Recommendations List

The Policy Recommendations aim to foster enabling environments that allow European regions to adopt and scale ROBIN's methodologies, thereby supporting the development of robust circular bioeconomy governance frameworks. The recommendations are informed by the ROBIN project's results and are structured to align with key EU policy frameworks, including the European Green Deal¹, the Circular Economy Action Plan², and the EU Bioeconomy Strategy³. In addition, they have been enriched through knowledge exchange with other EU-funded initiatives, particularly during the Mutual Learning Workshops (MLW) and related synergy activities, which facilitated cross-project dialogue and the identification of shared challenges and best practices.

A set of 20 actionable policy recommendations are organized into the following 7 strategic areas:

- 1. Policy and Governance Models Frameworks:** Recommendations for creating cohesive, multi-level governance that ensure policy alignment and foster cross-regional cooperation.
- 2. Stakeholder Engagement and Capacity Building:** Guidance on creating multi-stakeholder governance bodies, enhancing community participation, and fostering partnerships.
- 3. Financing and Investment:** Strategies for establishing bioeconomy-focused investment funds, promoting public-private partnerships, and leveraging EU funding mechanisms.
- 4. Research, Innovation, and Education:** Proposals for expanding bioeconomy research, supporting innovation, and integrating sustainability concepts into educational programs.
- 5. Social Fairness and Environmental Impact:** Measures to ensure a socially equitable bioeconomy transition while addressing environmental sustainability.
- 6. Awareness Raising:** Communication strategies aimed at enhancing public understanding, promoting stakeholder engagement, and building support for bioeconomy initiatives.
- 7. Data-Driven Monitoring and Evaluation:** Frameworks for developing real-time monitoring systems, using performance metrics, and fostering evidence-based policy adjustments.

Impact and Vision

The Deliverable 4.3 synthesizes the ROBIN project's achievements and outcomes into a replicable and scalable framework that regional authorities, policymakers, and other stakeholders can adopt to accelerate the transition to a circular bioeconomy. It combines practical tools with strategic policy guidance to support climate action, resilience, and social equity. By offering a roadmap for innovation-driven governance and fostering cross-regional collaboration, this guide helps position European regions at the forefront of the bioeconomy transition. Its adaptive framework ensures that diverse regions can harness the economic, environmental, and social benefits of the circular bioeconomy, building a sustainable and resilient future for Europe.

¹ European Commission (2019). The European Green Deal, COM(2019) 640 final, Brussels, 11.12.2019. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52019DC0640>

² European Commission (2020). A new Circular Economy Action Plan – For a cleaner and more competitive Europe, COM(2020) 98 final, Brussels, 11.3.2020. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0098>

³ European Commission (2018). A sustainable Bioeconomy for Europe: Strengthening the connection between economy, society and the environment, COM(2018) 673 final, Brussels, 11.10.2018. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52018DC0673>

1. Introduction

The Deliverable 4.3 has been prepared within the framework of the ROBIN project, which seeks to empower European regions to accelerate the transition to a circular and sustainable bioeconomy by fostering inclusive, place-based governance models and participatory foresight processes. In line with the project's overarching aims and the commitments outlined under the Horizon Europe Grant Agreement No. 101060504, this deliverable provides practical guidance and strategic policy insights to enable the replication and adaptation of the ROBIN methodology across diverse territorial contexts. It supports ROBIN's ambition to promote regional resilience, enhance social inclusiveness, and contribute to Europe's Green Deal objectives by equipping policymakers and stakeholders with actionable tools and recommendations.

This deliverable presents the outcomes of the ROBIN project's replication and policy guidance activities, with a specific focus on consolidating its methodological legacy through a Replication Guide, an operational Toolkit, and a suite of evidence-based Policy Recommendations. The document builds on lessons learned from the project's multi-actor engagement, co-creation processes, and regional piloting experiences, translating them into transferable practices for future implementation across European regions.

The Replication Guide provides a step-by-step roadmap for reproducing ROBIN's participatory and systemic approach, while the Toolkit offers a collection of practical resources designed to support local actors in stakeholder engagement, workshop facilitation, and impact assessment. The Policy Recommendations draw upon empirical findings and stakeholder feedback gathered throughout the project to inform regional, national, and European decision-making in the bioeconomy domain.

Beyond offering practical instruments, the deliverable reflects critically on enabling conditions for successful replication, the value of inclusive foresight, and the challenges of integrating regional diversity into EU bioeconomy strategies. It aims to serve as both a legacy product and a forward-looking compass for ongoing collaboration among policymakers, educators, civil society, and innovation actors.

The structure of this deliverable is organized as follows:

- *Chapter 2 outlines the conceptual and operational foundations of the Replication Guide and Toolkit and practical instructions for their use;*
- *Chapter 3 introduces the Policy Recommendations and elaborates on their policy relevance and formulation process;*
- *Chapter 4 synthesizes the conclusions and identifies key enablers and barriers for replication; and*
- *Annexes complement the main content and include a series of ROBIN Policy Briefs – derived from this deliverable – along with a White Paper summarizing key regional challenges and solutions for circular bioeconomy development. They also contain outputs from the project synergy activities, such as the 10-topic shortlist and real-time Mentimeter feedback collected during the 2nd Mutual Learning Workshop.*

2. Replication Guide and Toolkit

2.1 Background and Context

The Replication Guide and Toolkit was developed within the framework of the ROBIN project to support the transfer and adaptation of its methodologies across diverse European regions. As depicted in *Figure 1*, it builds on the project's empirical findings, stakeholder engagement processes, and governance model pilots, aiming to facilitate the establishment of circular bioeconomy governance structures. The guide aligns with broader EU policy goals and contributes to the systemic transition toward a sustainable, place-based bioeconomy.

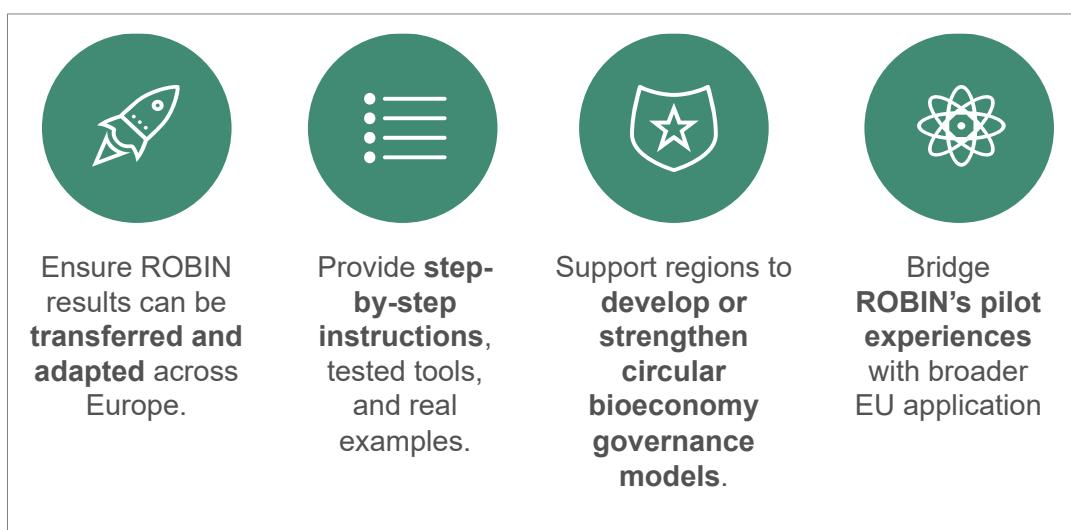


Figure 1: Purpose of the Replication Guide and Toolkit

2.2 Methodology

The Replication Guide and Toolkit builds on a structured, multi-stage methodology developed and implemented throughout the ROBIN project, as illustrated in *Figure 2*. They are not theoretical constructs, but rather the result of grounded research, stakeholder co-creation, pilot experimentation, and iterative validation across five European regions and beyond. The methodology ensures both robustness and adaptability, making the outcomes applicable beyond the pilot contexts.

Co-creation and Diagnosis

The process began with the creation of **Multi-Actor Regional Constellations (MARCs)** – inclusive governance platforms involving stakeholders from policy, education, industry, civil society, and research. These MARCs served as the main mechanism for stakeholder engagement, enabling co-creation and local ownership from the outset.

Key early-stage activities included:

- **Identifying barriers and opportunities** for stakeholders to contribute to circular bioeconomy development;
- Analysing and categorizing existing **bioeconomy governance models** across Europe, offering a comparative foundation;
- Collecting **good practices and relevant social measures** for inclusive and effective governance;
- Profiling each region's **bioeconomy policy mix and monitoring systems** to establish a contextual baseline.

Co-design and Tool Development

Building on this foundation, circular bioeconomy governance models were co-developed in collaboration with regional stakeholders. These models were tailored to the specific conditions of each pilot region.

This phase included:

- Co-designing **tailored circular bioeconomy governance models** and practices specific to each regional context.
- Designing **support actions and implementation plans** to operationalize the models;
- Developing **practical tools** to enable participation, policy innovation, and strategic planning;
- Integrating all resources into the digital, modular **ROBIN Toolbox** to facilitate replication and scaling.

Validation through Regional Testing

To ensure real-world applicability, the models and tools underwent structured validation in each pilot region. This testing followed a phased approach:

- Each region developed a tailored **validation plan** aligned with local governance structures and capacities;
- **Alpha and Beta testing phases** were conducted to assess usability, relevance, and effectiveness;
- **Feedback from regional stakeholders and the Advisory Board** informed refinements to both the guidelines and the Toolbox.

This iterative process ensured that the final outputs are grounded in tested practices and adaptable to diverse territorial contexts.

Monitoring, Evaluation and Exchange

Monitoring and evaluation were conducted throughout the project to track progress, impacts, and stakeholder perceptions across all pilot regions. In parallel, exchange activities promoted cross-regional learning and replication, including:

- Results from comprehensive **monitoring of project's outcomes, impacts, and stakeholder perception changes** across all pilot regions;

- Outcomes from the **exchange of best practices** and lessons learnt through physical and virtual events, Mutual Learning Workshops, and a Train-the-Trainer.

Dissemination Strategy

The final version of this deliverable was digitally packaged and actively disseminated through Policy Briefs (see **Annex I**) and White Paper (see **Annex II**) to stakeholders internationally.

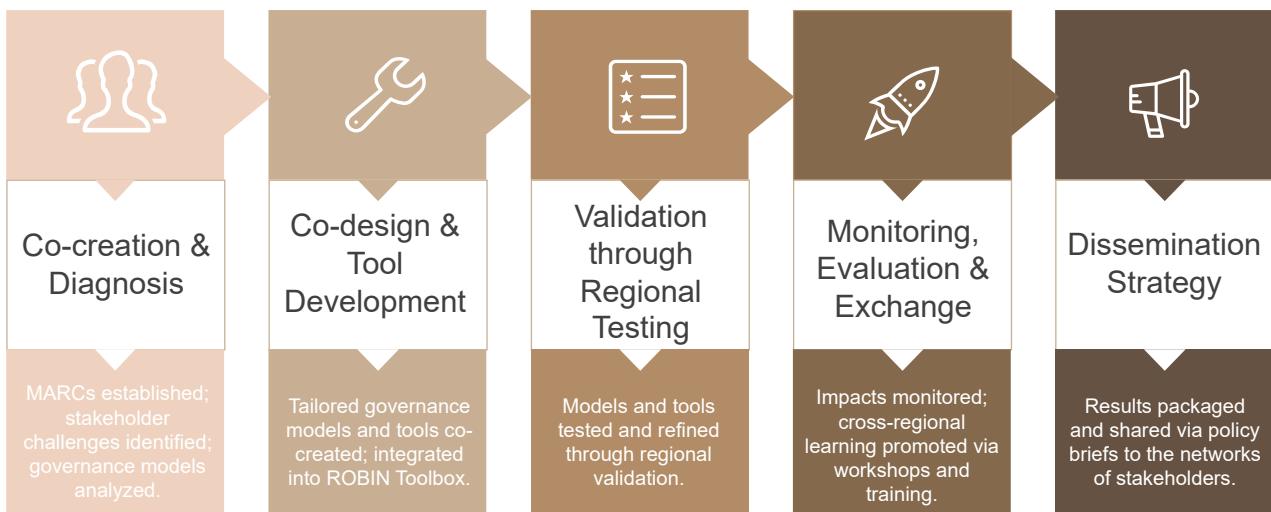


Figure 2: ROBIN Replication Guide & Toolkit: Multi-Stage Methodology

2.3 Instructions How to Use the Replication Guide and Toolkit

This section provides an overview of how to utilize the Replication Guide and Toolkit. It outlines the structure and purpose of the guide, detailing its utility for regional governments, policymakers, and other stakeholders seeking to replicate the ROBIN project's circular bioeconomy methodologies and tools in their own territorial contexts.

- **What It is For:** Presents an overview of the ROBIN project and explains how the guide supports the replication of its methodologies, tailored to diverse regional contexts.
- **How It Fits:** Demonstrates the alignment of ROBIN's methodologies and tools with key EU policy frameworks.
- **Who It is For:** Outlines the key target groups of the guide.
- **What is Inside:** Provides a clear structure and description of the guide's components.

2.3.1 **What It Is For: Purpose of the Guide**

Overview of the ROBIN Project

The ROBIN project aims to assist Europe's regional authorities in transitioning to circular bioeconomy by strengthening governance frameworks and implementing strategies that are

contextually appropriate. The project seeks to develop governance structures that facilitate the scaling of bioeconomy initiatives while promoting sustainability, social innovation, and resilience across Europe. Through these efforts, ROBIN contributes to the European Green Deal and broader circular economy objectives, aiming to position Europe as a leader in sustainable, bio-based economic development.

Pilot Regions Overview

ROBIN empowers regional authorities to adapt governance models and structures to accelerate bioeconomy transitions. The project's pilot regions – **Andalusia (Spain)**, **Central Macedonia (Greece)**, **Baden-Württemberg (Germany)**, **Southern Region (Ireland)**, and **Žilina (Slovakia)** – were instrumental in demonstrating the applicability of the ROBIN methodology and tools. These regions developed circular bioeconomy governance models through co-creation, experimentation, and testing of the ROBIN Toolbox, laying the groundwork for wider replication of the project's findings and outputs.

The Replication Guide provides clear instructions for stakeholders in other regions to implement or adapt these governance models, thereby supporting the broader adoption of circular bioeconomy strategies in diverse territorial contexts, as depicted in the pillars illustrated in *Figure 3*.

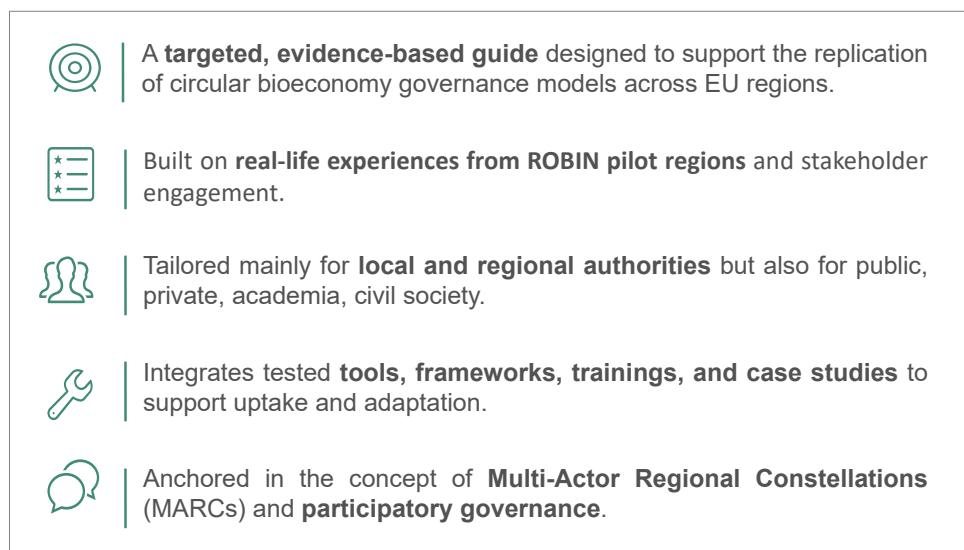


Figure 3: Pillars of the ROBIN Replication Guide and Toolkit

Purpose of the Replication Guide

The purpose of this Replication Guide and Toolkit is to provide a **comprehensive overview of the ROBIN project, detailing its objectives, methodologies, and tools designed to support the transition to circular bioeconomy** in regional contexts. The Guide and Toolkit aim to facilitate the replication of ROBIN's governance models, tools, and strategies in diverse territorial settings across Europe. It ensures that these methodologies are adaptable to varying regional needs and priorities, offering step-by-step guidance for regional authorities, policymakers, and stakeholders to effectively implement and customize circular bioeconomy initiatives based on the lessons learned throughout the ROBIN project. By doing so, it empowers regions to replicate and scale successful practices,

fostering sustainable bioeconomy development that aligns with EU policy goals and regional aspirations.

2.3.2 ***How It Fits: Alignment with EU Policy***

Circular bioeconomy governance is increasingly recognized as a central priority within EU policy frameworks. This includes key initiatives such as the European Green Deal, EU Bioeconomy Strategy, and the Circular Cities and Regions Initiative (CCRI-CSO). These policies call for regions to play a crucial role in advancing the transition to a sustainable bioeconomy, both through the adoption of circular practices and the fostering of socio-economic innovation.

Policy Support for Circular Bioeconomy

EU-level frameworks provide significant policy support for the development of circular bioeconomy models, offering funding opportunities, research support, and regulatory incentives. However, significant barriers remain, such as the need for more integrated governance models, effective stakeholder engagement, and improved awareness of circular economy opportunities at the regional level.

Key drivers for adopting circular bioeconomy governance at the regional level include:

- **Policy and regulatory frameworks** that incentivize circular economy practices.
- **Technological advancements** enabling more sustainable production processes and bio-based products.
- **Economic opportunities** for green job creation, waste reduction, and sustainability-driven economic growth.

Regions, through their influence over territorial planning, resource management, and regional development policies, are uniquely positioned to drive bioeconomy development. By adapting governance structures and models, they can align with the EU's broader sustainability goals while contributing to regional economic development.

This Replication Guide equips regions with the tools and methodologies to navigate these opportunities and challenges, empowering them to develop robust circular bioeconomy governance models that meet local needs and aspirations.

Foundational Concepts

Before moving on to how replication works, it is essential to clarify several key concepts underpinning the ROBIN approach:

- **Circular Bioeconomy Governance Model (CBGM):** Within the ROBIN project, CBGM refers to an integrated system of policies, institutions, and participatory mechanisms that promote the sustainable management and use of biological resources in a circular manner, tailored to the specific needs and capacities of a region. This concept is framed within the Circular Bioeconomy Governance Model

Framework (RCBGMF), which expands upon categories outlined by the EU Bioeconomy Strategy by incorporating three additional regional dimensions: Social Benefits, Environmental Benefits, and Regional Benefits. The framework guides regional stakeholders in prioritizing local needs and identifying their unique value propositions to co-create effective and adaptive governance models through the Circular Bioeconomy Governance Model Canvas (CBGMC). Source: [Deliverable 2.1](#)

- **Governance Model:** System of control and regulation mechanisms that includes both state intervention and the rules governing the interaction of private actors, such as the markets, associations, and clusters. Source: ROBIN [Glossary](#)
- **Multi-Actor Regional Constellations (MRCs):** MRCs are regionally anchored stakeholder platforms that bring together actors from various sectors (e.g., public authorities, academia, industry, civil society) to co-create and coordinate circular bioeconomy initiatives. In the ROBIN context, MRCs serve as the primary mechanism for fostering participatory governance and ensuring that replication efforts are inclusive, context-sensitive, and impact-driven. Source: [Deliverable 1.2](#)

By grounding replication activities in these concepts, the guide enables European regions to transition toward adaptive, scalable, and resilient circular bioeconomy governance frameworks.

2.3.3 ***Who It Is For: Target Audience***

The Replication Guide and Toolkit are primarily intended for regional governments, policymakers, and other stakeholders involved in the design, implementation, or enhancement of circular bioeconomy projects and policies at the regional level. This includes civil society organizations, academic institutions, industry representatives, and research entities engaged in bioeconomy initiatives.

2.3.4 ***What Is Inside: Contents Overview***

A quick look at what the guide includes:

- Step-by-step **replication instructions** based on ROBIN project's experience.
- **Practical tools and materials** to facilitate planning and decision-making.
- A **glossary** of key terms, **frequently asked questions**, and **other informative materials** and **useful tips** for replication.
- **Case studies** of successful implementations, as well as **lessons learnt** from challenges encountered.

2.4 ROBIN Replication Guide

This section presents the core components of the ROBIN Replication Guide, offering structured, step-by-step guidance for designing, implementing, and assessing regional circular bioeconomy governance models developed in the ROBIN project. The guide is designed to be both adaptable and practical, ensuring usability across diverse territorial contexts while aligning with the overarching aims of the ROBIN project: to foster inclusive, sustainable, and place-based bioeconomy governance, as summarized in the five replication steps illustrated in *Figure 4*.



Figure 4: ROBIN Replication Guide – 5 Replication Steps

2.4.1 *First Replication Step – INITIATE: Build Multi-Actor Regional Constellations (MARCs)*

The first step outlines how to initiate stakeholder-driven governance by building MARCs. It provides a practical framework for identifying regional actors, assessing barriers and opportunities, and facilitating multi-stakeholder engagement. These constellations are essential to ensuring local ownership, legitimacy, and sustainability of circular bioeconomy strategies.

Key Actions

- **Assess Current Governance Structures:**
 - Use the Typology Matrix of Circular Bioeconomy Governance Models to evaluate your region's readiness for circular bioeconomy governance and analyse the policy, economic, institutional, and regulatory context of your region.

- **Map Stakeholders and Power Dynamics:**
 - Employ the Stakeholder Mapping and Engagement Framework to identify relevant actors and assess their influence, interests, and relationships.
- **Set Up MARCs:**
 - Identify key regional actors across sectors (government, business, academia, NGOs, citizens).
 - Utilize the MARC Engagement Framework to convene cross-sectoral actors, define shared objectives, and establish a governance charter
- **Establish Trust and Inclusion:**
 - Foster trust through transparent communication, inclusive dialogue, and clearly defined objectives from the outset.
 - Promote iterative engagement and joint decision-making as foundational principles of MARCs.

Key Tools and Resources

The key tools and resources that support this replication step are systematically outlined in *Table 1*.

Table 1: Supporting Resources for First Replication Step

Replication Step	Resource Name	Purpose	Link
Step 1: INITIATE – Build MARCs	Typology Matrix	Evaluate your region's readiness for circular bioeconomy governance through clear criteria.	Typology Matrix Tool Deliverable D1.1: Typology of Circular Bioeconomy Governance Models Deliverable D2.3: ROBIN Toolbox
	Stakeholder Mapping and Engagement	Identify relevant actors and assess their influence and relationships.	Deliverable D2.1: Regional Governance Models
	MARC Engagement	Convene cross-sectoral actors, define shared objectives, and establish a governance charter	Deliverable D2.1: Regional Governance Models Deliverable D2.2: ROBIN Regional Action Plans
	Methods for Building Trust and Inclusion in MARCs	Foster transparency, dialogue, and collaborative governance.	Deliverable D1.2: Good Governance Practices

2.4.2 Second Replication Step – ASSESS: Understand Governance Landscape and Analyse Governance Models

The second step offers methodological guidance for analysing governance models and policy frameworks across Europe, facilitating their contextual adaptation.

Key Actions

- **Explore the ROBIN Knowledge Platform:**
 - This platform provides insights into various governance models and showcases good practices, serving as foundational resources for new initiatives.
- **Analyse Governance Types:**
 - Position your region within ROBIN's typology of circular bioeconomy governance models.
- **Benchmark with Good Governance Practices:**
 - Examine examples of successful participatory governance from other ROBIN regions through the Good Governance Practices.
- **Benchmark with Circular Bioeconomy Governance Profiles:**
 - Examine the circular bioeconomy policy mix of the ROBIN regions (see *Table 2*).
- **Case Studies of Regional Profiles:**
 - Draw inspiration from ROBIN regions as well as other European regions that have successfully tailored policy mixes to enable circular bioeconomy transitions (see *Table 2*).

Key Tools and Resources

The key tools and resources that support this replication step are outlined in *Table 2*.

Table 2: Supporting Resources for Second Replication Step

Replication Step	Resource Name	Purpose	Link
Step 2: ASSESS – Analyse Governance Models	Knowledge Platform	Explore different types of regional bioeconomy governance models and good governance practices.	Knowledge Platform Tool
	Typology of Circular Bioeconomy Governance Models	Position your region within ROBIN's typology.	Deliverable D1.1: Typology of Circular Bioeconomy Governance Models
	Good Governance Practices	Examine examples using the ROBIN Good Practices.	Deliverable D1.2: Good Governance Practices

	Circular Bioeconomy Governance Profiles	Analyze the circular bioeconomy policy mix of the ROBIN regions and compare them with your region.	<u>Deliverable D.1.3 Circular Bioeconomy Governance Profiles of ROBIN Regions</u>
	Case Studies	Get inspired by the ROBIN Case Studies.	<u>Case Studies</u> on the ROBIN website <u>Knowledge Platform</u> <i>Chapter 2.5.4 and Chapter 2.5.5 of this document</i>

2.4.3 *Third Replication Step – ENVISION AND PLAN: Co-Create Governance Models*

This step explains how to co-create and operationalise governance frameworks with local actors, translating MARC outputs into institutional practice.

Key Actions

- **Create Co-Creation Process:**
 - Co-create the Governance model for your region using the ROBIN's Circular Bioeconomy Governance Model Canvas.
 - Guide stakeholders through participatory governance design using examples from ROBIN regional workshops.
- **Develop Support Actions and Plans:**
 - Translate strategies into concrete plans and develop implementation roadmaps and plans using examples of validation plans of ROBIN regions.
- **Strengthen Partnerships:**
 - Build trust-based collaboration frameworks and governance agreements among MARC members to engage with government, academia, and civil society for collaborative project development

Key Tools and Resources

The key tools and resources that support this replication step are outlined in *Table 3*.

Table 3: Supporting Resources for Third Replication Step

Replication Step	Resource Name	Description	Link
Step 3: ENVISION AND PLAN – Co-create Governance	Circular Bioeconomy Governance Model Canvas	Develop and update regional circular bioeconomy governance model for your region.	<u>Circular Bioeconomy Governance Model Canvas Tool</u> <u>Deliverable D2.1: Regional Governance Models</u>

			D.2.3: ROBIN Toolbox
	Regional Action Plans	Develop implementation roadmap on the basis of ROBIN's regions Action Plans.	D.2.2: ROBIN Regional Action Plans

2.4.4 **Fourth Replication Step – IMPLEMENT: Use the ROBIN Toolbox**

This step introduces the digital and conceptual tools developed in ROBIN to support regions in implementing governance strategies effectively.

Key Actions

- **Explore ROBIN Tools and their User Manuals:**

- Review the tools included in the ROBIN Toolbox, check the description of each tool and the respective guides/user guidelines (see *Table 4*).
- Use the tools in your daily activities and operations.

Key Tools and Resources

The key tools and resources that support this replication step are outlined in *Table 4*.

Table 4: Supporting Resources for Fourth Replication Step

Replication Step	Resource Name	Purpose	Link
Step 4: IMPLEMENT – Use Toolbox	Familiarize yourself with the Outline of ROBIN Tools	Get to know the key elements of ROBIN tools within the Toolbox.	<i>Chapter 2.5.1 in this document</i> Deliverable D2.3: ROBIN Toolbox
	ROBIN Toolbox User Guidelines	Get to know the Instructions and Examples for using the Toolbox.	ROBIN Toolbox User Guidelines
	Circular Bioeconomy Governance Model Canvas	Support the co-creation of regional circular bioeconomy visions and governance strategies (offers structured guidance during design, examples and planning phases).	Circular Bioeconomy Governance Model Canvas - Robin Toolbox Deliverable D2.1: Regional Governance Models
	Knowledge Platform-Good Practices	Offer inspiration and reference through real-world circular bioeconomy governance practices across EU regions (supports contextual understanding and adaptation)	Good Practices - Robin Toolbox Deliverable D1.2: Good Governance Practices

	Policy Monitoring System	Evaluate the performance of governance models (offers practical support during implementation phases).	<u>Policy Monitoring System Tool</u> <u>Deliverable D2.3: ROBIN Toolbox</u>
	Environmental Protection Planning Tool	Facilitate the identification of potentially non-eco-friendly practices (offers practical support during implementation phases).	<u>Environmental Protection Planning Tool</u> <u>Deliverable D2.3: ROBIN Toolbox</u>
	Support Actions Portfolio	Provide tailored strategies to address specific regional needs and challenges (offers practical support during implementation phases).	<u>Support Actions Portfolio Tool</u> <u>Deliverable D2.3: ROBIN Toolbox</u>

2.4.5 ***Fifth Replication Step – EVALUATE: Monitor, Learn and Engage with the CCRI-CSO***

This final step offers mechanisms for performance monitoring, iterative improvement, as well as alignment with the Circular Cities and Regions Initiative – Coordination and Support Office (CCRI-CSO).

It also provides recommendations for projects to cooperate and synergize with the CCRI-CSO. Funded by the European Commission, the CCRI-CSO is responsible for facilitating the implementation of the CCRI and is the main coordinating body for its activities. The CCRI-CSO is made of an international, multidisciplinary team of experts in the field of circular economy offering practical, tailor-made support to speed up circular economy implementation in cities and regions.

Key Actions

- **Monitor and Evaluate Policies with the Policy Monitoring System:**
 - Use the Policy Monitoring Progress Tracker to track the effectiveness of policies and make data-driven adjustments as well as to assess and improve the effectiveness of existing governance models.
- **Monitor and Evaluate Policies with the Environmental Protection Planning Tool:**
 - Use the Environmental Protection Planning Tool to assess the current regional footprint (environmental performance), develop appropriate actions for improvement and increase the effectiveness of environmental management procedures.
- **Coordinate with CCRI-CSO:**
 - Use the self-assessment tool of CCRI-CSO to help you monitoring the performance of the region: [CCRI Self Assessment Tool | Circular Cities and Regions Initiative](#)
 - Take steps for engaging with CCRI-CSO, contributing to its knowledge ecosystem, and integrating lessons from European peers:

- Register as a CCRI stakeholder by providing information about the project to set up a short project profile.
- Add your project events to the CCRI calendar: For each event, fill the event fiche template and send it to CCRI-CSO (CCRI-CSO-Communications@ecorys.com). They will then add the event in their calendar.
- Submit publications to the CCRI knowledge section: Send detailed information (including hyperlink for open access & pdf) about your publications (e.g. papers or reports) If you have scientific publications.
- Join thematic working groups: CCRI created four TWGS to share knowledge, experiences, best practices and concrete solutions, facilitate and enhance peer learning, facilitate synergies but also function as 'laboratories'. Attend online and onsite workshops to share knowledge and solutions, increase visibility of the project, get in contact with other stakeholders, develop new project ideas.
- Subscribe and Contribute to the CCRI newsletter.
- Formalise collaboration through structured frameworks: This formalizes the cooperation between your project and the CCRI-CSO and helps define clear objectives throughout the project duration.

Key Tools and Resources

The key tools and resources that support this replication step are outlined in *Table 5*.

Table 5: Supporting Resources for Fifth Replication Step

Replication Step	Resource Name	Purpose	Link
Step 5: EVALUATE – Monitor, Learn and Engage	Policy Monitoring System	Evaluate the performance of governance models.	Policy Monitoring System Tool Deliverable D2.3: ROBIN Toolbox
	Environmental Protection Planning Tool	Facilitate the identification of potentially non-eco-friendly practices.	Environmental Protection Planning Tool Deliverable D2.3: ROBIN Toolbox
	Monitoring, Evaluation and Assessment Framework	Monitor, assess and evaluate the outcomes, impacts and perceptions shifts in using ROBIN methodologies and tools	Deliverable D4.1: Outcomes, Impacts and Perceptions Change
	CCRI-CSO Coordination.	Engage with the CCRI-CSO.	CCRI-CSO Guidelines

Final note

The ROBIN Replication Guide is an adaptive tool. Each region is encouraged to iteratively engage with its stakeholders, reflect on progress, and tailor the process to its unique conditions. Rather than

enforcing a fixed model, the guide offers a scaffold for co-creating region-specific circular bioeconomy governance pathways informed by European good practices and scientific insights.

2.5 ROBIN Toolkit

This section presents the ROBIN Toolkit, a **comprehensive resource package specifically developed to support regional actors in the practical implementation of the ROBIN methodology**. It is designed to facilitate the replication of innovative governance models and practices within diverse regional contexts, with a focus on advancing circular bioeconomy transitions. The Toolkit consolidates a variety of components, including decision-support tools, training modules, documentation, and data repositories. It also features a glossary of key terms, frequently asked questions, and curated informative materials to ensure accessibility and usability for a broad range of stakeholders.

Importantly, the Toolkit is structured to guide users through the sequential steps of the ROBIN methodology, providing adaptable instruments that respond to specific regional challenges and capacities. It acts as both a reference and a practical implementation guide, enabling users to navigate the complexities of regional governance innovation and stakeholder engagement, as illustrated in *Figure 5*.

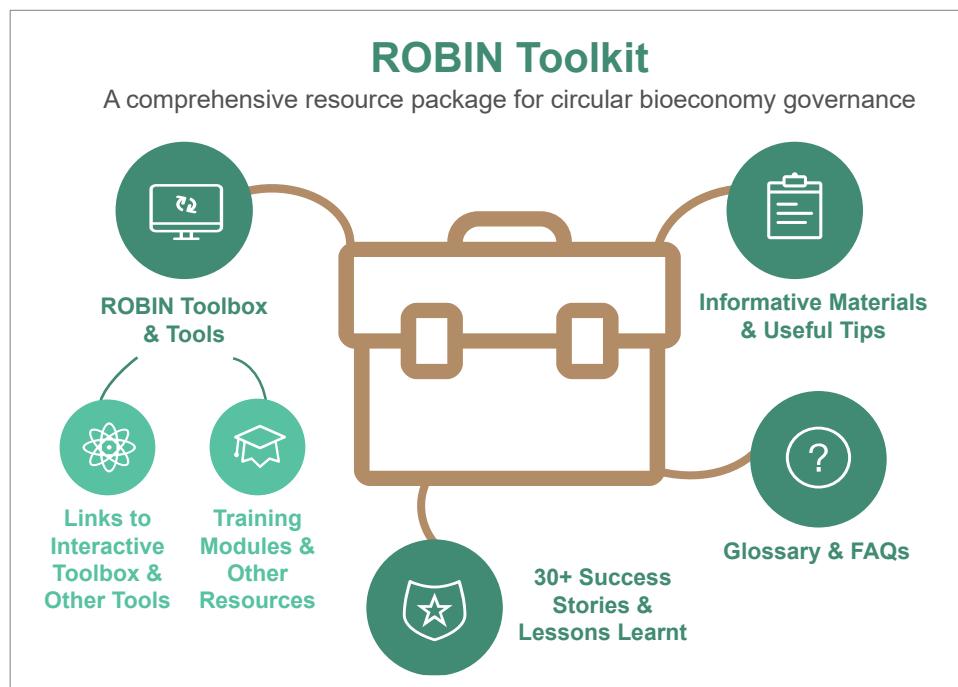


Figure 5: ROBIN Toolkit Visualisation

A key distinction must be made between the *Toolkit* and the *Toolbox*:

- **Toolkit** refers to the overarching framework that encompasses a wide array of support materials – interactive tools, the toolbox itself, case studies, FAQs, glossary, and

training content. It serves as the primary interface for users, structured to promote engagement, learning, and application of the ROBIN approach.

- **Toolbox**, in contrast, is a specific component within the Toolkit and one of the main outcomes of the ROBIN project. It consists of modular, action-oriented tools that can be directly applied in various stages of the governance innovation and replication process. Toolbox is available [online](#).

Together, the Toolkit and Toolbox empower stakeholders to co-create, adapt, and replicate governance innovations aligned with circular bioeconomy goals. By presenting practical examples and lessons learned from pilot regions, the Toolkit enhances the replicability of ROBIN's methodology and reinforces the capacity of regional actors to foster sustainable systemic change.

2.5.1 **ROBIN Toolbox – Interactive Tools, Training Modules and Resources**

The ROBIN Toolbox constitutes the practical core of the Toolkit, offering a suite of operational instruments designed to assist regional stakeholders in the assessment, adaptation, and application of the ROBIN methodology.

ROBIN Toolbox is comprised of three components supporting the regional partners in implementing their governance models and structures:

- **ROBIN Knowledge Platform** including different types of regional bioeconomy governance models and good governance practices, as well as typology matrix.
- **ROBIN Tools** for the development of circular bioeconomy governance models, evaluation of the performance of the governance model and detection of non-environmentally friendly practices across environmental management areas.
- **ROBIN Support Actions Portfolio** tailored to the needs of regions.

All tools within the Toolbox are designed to be flexible, scalable, and adaptable to different regional contexts and stakeholder constellations. Their digital accessibility ensures that actors from across Europe can engage with the ROBIN methodology, fostering cross-regional learning and enhancing the broader impact of the project.

Description of the ROBIN Toolbox

The ROBIN Toolbox is designed to support regions to develop bioeconomy governance models and strategies by:

- **Inspiring bioeconomy governance models and practices:** The ROBIN Knowledge Platform is a comprehensive resource to explore and extract insights into exemplary governance models and practices on how policy makers and innovation developers actively contribute to the successful implementation of regional bioeconomy initiatives.
- **Practical Tools for Circular Bioeconomy Governance:** The ROBIN toolbox equips regions with three practical, ready-to-use tools (listed and further explained below) to develop their

bioeconomy strategies by for example developing a policy monitoring system or drafting environmental protection plans. It streamlines the process, making it efficient and effective.

- **Tailored Support with ROBIN Support Actions:** Each region is unique with specific challenges. The ROBIN Support Actions portfolio helps regions to pinpoint the support initiatives that align with their distinctive circumstances. It is a targeted approach to addressing their needs.

The toolbox is divided into seven elements:

- **The Regional Governance Models.**
- **The Good Governance Practices.**
- **The Typology Matrix.**
- **The Circular Bioeconomy Governance Model Canvas.**
- **The Policy Monitoring System.**
- **The Environmental Protection Planning Tool.**
- **The Support Actions List.**

Below, you can find the *Tables 6-12* offering the overview of seven elements of the Toolbox.

Knowledge Platform – Regional Governance Models

Table 6: Knowledge Platform – Regional Governance Models Overview

Tool Name	Knowledge Platform
Tool Type	Governance Models
Brief Description	A resource that provides a collection of diverse circular bioeconomy governance models designed for regional implementation across the EU. It considers varying typology aspects such as governance mechanism and constraints, territorial aspects, sustainability objectives among others.
Target Users	Regional Authorities, Stakeholders
Access the Tool	https://robintoolbox.web.auth.gr/index.php/governance-models/
Training Module – How to Use the Tool	N/A
Supporting Resources	https://robintoolbox.web.auth.gr/index.php/typology-matrix/

Knowledge Platform – Good Practices

Table 7: Knowledge Platform – Good Practices Overview

Tool Name	Knowledge Platform
Tool Type	Good Governance Practices
Brief Description	The Good Governance Practices resource is a comprehensive collection of circular bioeconomy governance practices curated for regional implementation across the EU. It includes diverse practice types such as networking, social innovation, public procurement, business support, and other policy or social measures categorized by regional characteristics and their expected social, environmental and economic impact.
Target Users	Regional Authorities, Stakeholders from industry, academia, civil society, regional governance bodies, innovation clusters and project managers
Access the Tool	https://robintoolbox.web.auth.gr/index.php/good-practices/
Training Module – How to Use the Tool	N/A
Supporting Resources	https://robintoolbox.web.auth.gr/index.php/typology-matrix/ https://robintoolbox.web.auth.gr/index.php/governance-models/ https://robin-project.eu/wp-content/uploads/2023/05/D.1.2-Good-Governance-Practices_compressed.pdf

Knowledge Platform – Typology Matrix

Table 8: Knowledge Platform – Typology Matrix Overview

Tool Name	Knowledge Platform
Tool Type	Guiding Framework
Brief Description	A guiding framework that categorizes and clarifies governance models in the circular bioeconomy, distinguishing practices and assessing their effectiveness through clear criteria.
Target Users	Regional Authorities, Stakeholders
Access the Tool	https://robintoolbox.web.auth.gr/index.php/typology-matrix/
Training Module – How to Use the Tool	https://robintoolbox.web.auth.gr/index.php/typology-matrix/
Supporting Resources	https://robintoolbox.web.auth.gr/index.php/governance-models/

Circular Bioeconomy Governance Model Canvas

Table 9: Circular Bioeconomy Governance Model Canvas Overview

Tool Name	<i>Circular Bioeconomy Governance Model Canvas</i>
Tool Type	Strategic Co-Creation Tool
Brief Description	The CBGMC is a strategic co-creation tool designed to support regional authorities and stakeholders in developing a shared vision for their circular bioeconomy. The tool helps regions identify, describe, and design the essential governance elements, partnerships, infrastructure, activities, and resources required for the implementation of a sustainable, inclusive, and place-based circular bioeconomy strategy.
Target Users	Policymakers, regional authorities, stakeholders from industry, academia, civil society, regional governance bodies, innovation clusters and project managers.
Access the Tool	https://robintoolbox.web.auth.gr/index.php/circular-bioeconomy-governance-model-canvas/
Training Module – How to Use the Tool	https://robintoolbox.web.auth.gr/wp-content/uploads/2025/04/V2-Circular-Bioeconomy-Governance-Model-Canvas-Guide-Final-Version.pdf
Supporting Resources	https://robintoolbox.web.auth.gr/index.php/circular-bioeconomy-governance-model-canvas/ https://robin-project.eu/wp-content/uploads/2023/06/D2.1_Regional-Governance-Models_compressed-1.pdf

Policy Monitoring System

Table 10: Policy Monitoring System Overview

Tool Name	<i>Policy Monitoring System</i>
Tool Type	Monitoring
Brief Description	A tool to evaluate the performance of governance models with respect to Environmental, Socioeconomic and Governance (ESG) as well as territorial responsible research and innovation (RRI) aspects.
Target Users	Policymakers, regional authorities, stakeholders
Access the Tool	https://robintoolbox.web.auth.gr/index.php/policy-monitoring-system/
Training Module – How to Use the Tool	https://robintoolbox.web.auth.gr/wp-content/uploads/2025/06/PMS-Tutorial-Video.mkv

Supporting Resources	https://knowledge4policy.ec.europa.eu/visualisation/eu-bioeconomy-monitoring-system-dashboards_en
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Environmental Protection Planning Tool

Table 11: Environmental Protection Planning Tool Overview

Tool Name	Environmental Protection Planning Tool
Tool Type	For decision-support and stakeholder engagement
Brief Description	An online tool to facilitate the identification of potentially non-eco-friendly practices currently followed by regional authorities. The transition to a bioeconomy requires regional authorities to take action in many ways and improve their environmental management procedures.
Target Users	The current tool can be used by policymakers, their advisors, public servants of all levels, and other practitioners to quickly assess their region's environmental performance and discuss potential actions to adopt more eco-friendly practices.
Access the Tool	https://robintoolbox.web.auth.gr/index.php/environmental-protection-planning/
Training Module – How to Use the Tool	https://robintoolbox.web.auth.gr/wp-content/uploads/2024/11/EPP-intro.mp4
Supporting Resources	https://robintoolbox.web.auth.gr/wp-content/uploads/2024/11/Introduction-of-the-EPP-tool.pdf https://robintoolbox.web.auth.gr/wp-content/uploads/2024/11/How-to-use-the-EPP-tool.pdf

Support Actions Portfolio

Table 12: Support Actions Portfolio Overview

Tool Name	Support Actions Portfolio
Tool Type	The Support Action Portfolio acts as an inspirational element, including an extensive list of measures that could be included as support actions in Regional Action Plans.
Brief Description	A tool with a collection of material and support actions examples for action plans to support regional capacity building, in areas such as raising stakeholder awareness and engagement. To ease the identification of relevant information, the portfolio includes searching tools based on (1) key words and (2) type of measures to be chosen among (a) Regional Analysis, (b) Social and (c) Technical Measure.
Target Users	Policy makers and regional stakeholders supporting the design and implementation of regional action plans.

Access the Tool	https://robintoolbox.web.auth.gr/index.php/support-actions/
Training Module – How to Use the Tool	https://robintoolbox.web.auth.gr/index.php/use-guideline/
Supporting Resources	N/A

2.5.2 **Glossary and FAQs**

This section provides access to the glossary of key terms, a set of frequently asked questions (FAQs), and curated resources to support clarity, accessibility, and practical use of the Replication Guide and Toolkit by diverse stakeholder groups.

You can find key terms in the [Glossary on the ROBIN website](#).

You can find the [FAQs section on the ROBIN website](#).

A more detailed glossary related to Bioeconomy is available at the Knowledge Centre for Bioeconomy (European Commission) – [Bioeconomy Glossary](#). It is a collection of standardized definitions for key terms, aiming to support policy coherence, research, and communication across EU initiatives.

2.5.3 **Informative Materials and Useful Tips**

The following section offers a comprehensive collection of informative materials to support project implementation. This includes project reports, templates, and practical guides from the ROBIN project, as well as the relevant resources from other initiatives. Additionally, the section provides useful tips to enhance understanding and application of key concepts, ensuring stakeholders have access to the necessary tools for success.

Tables 13-15 provides an overview of these informative materials and useful tips.

Table 13: Other Informative Materials from ROBIN Project

	Title of Material	Type of Material	Access Material
1	“Strategic analysis of the implementation of circular bioeconomy in Andalusia through SWOT analysis.”	Scientific Publication	Online Publication (available in Spanish)
2	“Sustainability, circular economy and bioeconomy: A conceptual review and integration into the notion of sustainable circular bioeconomy.”	Scientific Publication	Online Publication (available in English)

3	“Governance Strategies for Sustainable Circular Bioeconomy Development in Europe: Insights and Typologies.”	Scientific Publication	Online Publication (available in English)
4	“Driving Sustainability: Circular Bioeconomy and Governance in Andalusia (Southern Spain)”	Scientific Publication	Online Publication (available in English)

Table 14: Informative Materials from Other Relevant Projects

	Title of Project	Title of Material	Brief Description	Target Users	Access Material
1	BioGov.net	Policy Briefs	Policy Briefs provide comprehensive insights into the current state of the bioeconomy sector across various European regions, focusing on key areas such as policy development and education.	Researchers, policymakers, industry stakeholders, and educators involved in bioeconomy	Available on the BioGov.net Library page: https://www.biogov.net/library/
2	BIOTRANSFORM	Joint Policy Brief	Final joint policy brief for a transition from linear fossil-based to a circular bioeconomy	Bioeconomy stakeholders	https://robin-project.eu/wp-content/uploads/2025/06/Joint-Policy-Recommendations.pdf
3	Biorural	Toolkit	Toolkit offers factsheets on the bioeconomy, an inventory of biotech solutions and funding, success stories, educational materials, practice abstracts, business model blueprints, and policy guidelines for rural circular bioeconomy development.	Bioeconomy stakeholders	https://biorural-toolkit.eu/
4	Rubizmo	Business Tools	Rubizmo offers a virtual library of proven business models, a Transformation Support Tool for personalized business advice, and a Cooperation Toolkit to help structure and access partnerships tailored to your business model.	rural entrepreneurs, networks, investors and policy makers	https://rubizmo.eu/business
5	MainstreamBIO	Toolkit	MainstreamBIO provides a catalogue of small-scale bio-based solutions, best practices for nutrient recycling, educational materials, a decision-support system for biomass matching, an asynchronous BioForum for user communication, and a repository of bioeconomy educational resources.	Stakeholder working with small-scale bio-based solutions	https://mainstreambio-digital-toolkit.eu/?lang=en_us&intro=yes
6	GoGras	Tools	GoGras offers a support tool to evaluate grass-related project feasibility and a business plan writer providing templates, evaluations, and tailored advice for bioeconomy entrepreneurs.	Bioeconomy entrepreneurs	https://www.go-grass.eu/training/

Table 15: Useful Tips

	Useful Tip	Brief Description	Notes
1	Engage Stakeholders Early	Involve local communities, businesses, and policymakers from the beginning to ensure collaboration.	Use participatory workshops and co-creation methods to foster engagement.
2	Strengthen Cross-Border Cooperation	Foster partnerships between regions to share best practices and resources, particularly in transnational projects.	Use digital platforms to maintain continuous communication.
3	Develop Clear Governance Structures	Define roles and responsibilities among stakeholders to prevent confusion and inefficiencies.	Use formal or informal agreements (and clear communication channels).
4	Prioritize Public Awareness and Education	Inform citizens about the benefits of initiatives through various channels.	Use storytelling, infographics, and social media.
5	Monitor and Evaluate Impact Continuously	Establish key performance indicators (KPIs) to measure the effectiveness of projects.	Use digital tools and/or dashboards to track progress and share results.

2.5.4 Success Stories

This section presents 25 case studies of successful circular bioeconomy initiatives from the ROBIN project and beyond. Each example includes the title, country and region, and policy area, followed by a brief description of the initiative. It highlights the key success factors, replication takeaways, and challenges encountered, along with how these were addressed in practice. Relevant links and references are also provided to support further exploration.

Success Story No. 1 from Germany	
Title	Baden-Württemberg Bioeconomy Congress
Country & Region	Germany – Baden-Württemberg
Policy Area	Stakeholder Engagement, knowledge exchange
Brief Description	The international Bioeconomy Congress Baden-Württemberg has been held biennially since 2014 as part of the state's bioeconomy research programme. It fosters networking, cooperation, and knowledge exchange among researchers, businesses, and policymakers, with a strong focus on local and regional engagement. Key bioeconomy topics are explored through info sessions, workshops, excursions, etc.
Success Factors	<ul style="list-style-type: none"> Since it takes place every 2 years, it increases the momentum of the congress Parallel sessions that enable addressing various topics Possibility to have a promotional stand

Key Takeaways for Replication	<ul style="list-style-type: none"> Major event that all key stakeholders in the region (and beyond) attend.
Key Challenges	<ul style="list-style-type: none"> Parallel sessions do not allow to attend all sessions.
How Challenges Were Addressed	<ul style="list-style-type: none"> Join as team to be able to split up and cover all relevant sessions/topics.
Relevant Links & References	<i>Bioeconomy Congress Baden-Württemberg 2024 - Bioökonomie Baden-Württemberg</i> (5 th edition in 2024)

Success Story No. 2 from Germany	
Title	Funding programmes regarding bioeconomy topics in Baden-Württemberg
Country & Region	Germany – Baden-Württemberg
Policy Area	Stakeholder Engagement, knowledge exchange
Brief Description	The funding programme “Sustainable Bioeconomy as a Driver of Innovation for Rural Development” (Measure 17 of the Baden-Württemberg Bioeconomy Strategy) supports technology and knowledge transfer for the sustainable use of agricultural and forestry resources. Implemented under the action area “Sustainable bioeconomy in rural areas” (7.1.6), it focuses on regulatory and funding instruments for rural development. The initiative is supported by the Ministry of Food, Rural Affairs and Consumer Protection and administered by VDI/VDE Innovation + Technik GmbH.
Success Factors	<ul style="list-style-type: none"> Strong political and financial support with stakeholder involvement. Two-stage funding model ensuring feasibility and impact. Broad thematic scope supporting rural bioeconomy innovation.
Key Takeaways for Replication	<ul style="list-style-type: none"> A phased funding approach (feasibility + implementation) increases project quality and success. Strong regional governance and stakeholder engagement are essential for effective bioeconomy support in rural areas.
Key Challenges	<ul style="list-style-type: none"> Ensuring long-term funding and policy commitment beyond initial program phases. Coordinating diverse stakeholders and aligning their interests across sectors.
How Challenges Were Addressed	<ul style="list-style-type: none"> Challenges were addressed through inclusive stakeholder consultations and phased funding, allowing for risk mitigation and alignment with regional needs.
Relevant Links & References	<p>Information funding program (in German): <i>FE-Förderprogramm: Ministerium für Ernährung, Ländlichen Raum und Verbraucherschutz Baden-Württemberg</i></p> <p>Website Bioeconomy Baden-Württemberg: <i>Funding Programs - Bioökonomie Baden-Württemberg</i></p>

Success Story No. 3 from Germany	
Title	Bioeconomy Innovation and Investment Program for Rural Areas (BIPL BW)
Country & Region	Germany, Baden-Württemberg

Policy Area	Funding mechanism
Brief Description	This Funding Program has been implemented as a measure (number 17) within the first Baden-Württemberg Bioeconomy Strategy (2019). The aim was to support the transfer of technology and knowledge in the field of sustainable production and use of resources from regional agriculture and forestry to enable a sustainable development of the region.
Success Factors	<ul style="list-style-type: none"> 12 large projects funded with a combined grant allocation exceeding €19 million The program was part of the state's broader strategy to position Baden-Württemberg as a leading region for bio-based, circular economy practices. By focusing on rural areas, the program addressed specific regional needs and leveraged local resources and expertise.
Key Takeaways for Replication	<ul style="list-style-type: none"> Integrated Approach: Combining research and investment support can effectively drive the development and implementation of bio-based innovations. Regional Focus: Tailoring programs to the specific needs and strengths of rural areas can enhance the impact and sustainability of bioeconomy initiatives. Strategic Funding: Aligning funding programs with broader regional or national strategies ensures coherence and maximizes potential for systemic change.
Key Challenges	<ul style="list-style-type: none"> Program Continuity: As of now (May 2025), the BIPL BW program is not accepting new applications, which may create uncertainty for stakeholders seeking long-term support. Resource Allocation: Ensuring adequate funding and resources for both research and implementation phases can be challenging, particularly in the face of economic constraints.
How Challenges Were Addressed	<ul style="list-style-type: none"> The program was designed with clear objectives and funding allocations, providing a structured framework for applicants and administrators. Collaboration with various stakeholders, including research institutions, industry partners, and rural communities, helped to align the program's goals with the needs of the bioeconomy sector.
Relevant Links & References	https://mlr.baden-wuerttemberg.de/de/unsere-themen/biooekonomie-und-innovation/foerderung-bipl-bw/

Success Story No. 4 from Germany	
Title	BayBioökonomie-Scale-Up – Investment support for Bioeconomy Scale-Up Facilities
Country & Region	Germany, Bavaria
Policy Area	Funding Program
Brief Description	BayBioökonomie-Scale-Up, initiated by the Bavarian State Ministry for Economic Affairs, Regional Development and Energy, provides financial support to companies establishing industrial-scale production facilities that utilise renewable raw materials or biogenic residues. The programme aims to foster regional value chains, reduce reliance on fossil resources, and promote climate-friendly innovations.

Success Factors	<ul style="list-style-type: none"> • Targeted Financial Incentives: The program offers grants up to 20% for small enterprises and up to 40% for large-scale recycling projects, encouraging investment in sustainable technologies. • Focus on Sustainability: The program requires that at least 51% of input materials are renewable or biogenic, ensuring environmental benefits. • Structured Application Process: The two-stage application procedure enhances project selection and implementation efficiency
Key Takeaways for Replication	<ul style="list-style-type: none"> • Align funding with regional strategies: This program is part of the implementation of Bavaria's Bioeconomy Strategy. This alignment ensures coherence and impact. • Support Diverse Company Sizes: This programme provides financial incentives for both SMEs and larger enterprises, which promotes widespread adoption. • Emphasize Environmental Standards: This programme sets clear sustainability criteria for project eligibility. This helps drive genuine ecological benefits.
Key Challenges	<ul style="list-style-type: none"> • High Entry Costs: The minimum eligible investment is €250,000, which may be prohibitive for some SMEs. • Technical Readiness Requirements: Projects must have a Technology Readiness Level (TRL) of 8, potentially limiting participation to more developed technologies.
How Challenges Were Addressed	<ul style="list-style-type: none"> • The programme provides higher funding percentages for SMEs (compared to larger enterprises) to mitigate financial barriers. • In addition, it offers detailed information on eligibility and clear guidelines about application procedures to assist companies in meeting technical requirements.
Relevant Links & References	Bioökonomie-Scale-Up - Bayerisches Staatsministerium für Wirtschaft, Landesentwicklung und Energie

Success Story No. 5 from Germany	
Title	Technikum Laubholz – Accelerating Bio-based innovation from hardwood
Country & Region	Germany, Baden-Württemberg
Policy Area	Industrial innovation
Brief Description	Established in 2020 in Göppingen, the Technikum Laubholz is an independent, non-university research institution dedicated to developing high-value applications from hardwood, particularly beech. It bridges the gap between fundamental research and industrial application, focusing on sustainable, bio-based materials.
Success Factors	<ul style="list-style-type: none"> • Public-Private Collaboration: Strong partnerships with academic institutions, industry players, and government bodies facilitate knowledge transfer and commercialization. • Focus on Sustainability: Utilization of regional, renewable resources and closed-loop production processes minimize environmental impact. • Integrated Research Approach: Interdisciplinary teams work across multiple research fields, accelerating the development of market-ready product.
Key Takeaways for Replication	<ul style="list-style-type: none"> • Establish Dedicated Research Centers: Creating specialized institutions focused on bio-based materials can drive innovation and bridge the gap between research and industry.

	<ul style="list-style-type: none"> • Leverage Regional Resources: Using locally available biomass supports regional economies and ensures sustainability. • Promote Interdisciplinary Collaboration: Combining expertise from various fields enhances problem-solving and innovation capacity.
Key Challenges	<ul style="list-style-type: none"> • Scaling Up Production: Transitioning from pilot projects to industrial-scale production requires significant investment and infrastructure. • Market Acceptance: Introducing new materials into established markets necessitates overcoming skepticism and demonstrating performance parity or superiority.
How Challenges Were Addressed	<ul style="list-style-type: none"> • Funding and policy backing from the state of Baden-Württemberg provided the necessary resources for scaling up operations. • Pilot plants and collaborations with industry partners showcased the viability and advantages of the new materials, facilitating market penetration.
Relevant Links & References	Technikum Laubholz

Success Story No. 6 from Greece	
Title	Use of organic residues for energy production
Country & Region	Greece, Central Macedonia
Policy Area	Renewable Bioenergy, Circular Economy and Waste Valorisation
Brief Description	BIO2CHP enables small agro-food industries to convert organic residues – such as agricultural and food waste – into low-cost, on-site heat and power. Using a compact system that combines gasification and gas engines, it reduces both energy costs and waste, supporting circular and sustainable production.
Success Factors	<ul style="list-style-type: none"> • Prototype successfully tested in real and lab settings. • Runs on different natural materials. • Cuts significant carbon emissions every year. • Equal to powering 22 homes annually.
Key Takeaways for Replication	<ul style="list-style-type: none"> • Unique small-scale system efficiently uses untreated organic waste for agro-food industries. • Fills a market gap by addressing waste disposal and energy needs at a small scale. • High potential for transferring technology and knowledge to other sectors.
Key Challenges	<ul style="list-style-type: none"> • Technology Awareness: Small and medium enterprises (SMEs) might be unaware of the solution or sceptical of its performance and reliability. • Cultural Resistance to Change: Traditional waste disposal or energy supply methods may be deeply embedded in operational practices.
How Challenges Were Addressed	<p>Engagement Tactics:</p> <ul style="list-style-type: none"> • Partner with universities for field trials or data validation. • Publish findings from the pilot in industry journals. • Invite feedback on tech optimisation and co-innovation opportunities.
Relevant Links & References	https://www.bio2chp.com/

Success Story No. 7 from Greece	
Title	Measures for Widening Participation
Country & Region	Greece / Region of Western Macedonia
Policy Area	Stakeholder Engagement, Social Innovation
Brief Description	This initiative aims to increase public participation in biowaste collection by informing local businesses and individuals about existing waste collection systems and encouraging their use. Targeted interventions include distributing biowaste bags at open markets and engaging with local cafeteria owners to explore alternative uses for coffee residues.
Success Factors	<ul style="list-style-type: none"> • Active involvement of local stakeholders • Targeted interventions to increase awareness • Establishment of the "Biowaste Club" for engagement
Key Takeaways for Replication	<ul style="list-style-type: none"> • Leverage existing local events and networks to increase awareness effectively • Foster a sense of ownership and shared purpose through informal stakeholder groups • Tailor engagement strategies to local habits (e.g. focusing on coffee waste in cafés)
Key Challenges	<ul style="list-style-type: none"> • Lack of awareness and participation • Need for structured coordination among stakeholders
How Challenges Were Addressed	<ul style="list-style-type: none"> • Distribution of educational leaflets and collection bags • Meetings with key stakeholders to discuss practical implementation steps
Relevant Links & References	Link 1 , Link 2

Success Story No. 8 from Greece	
Title	National Program for Improved Municipal Waste Separation and Recycling in Serbia
Country & Region	Serbia, Regions of Duboko, Pirot, Srem-Mačva, and Pančevo
Policy Area	Waste Management, Circular Economy, Governance
Brief Description	In response to severe municipal waste challenges - particularly high landfill dependency and lack of pre-treatment - Serbia launched a major initiative to improve source separation of recyclables. Supported by the EU and Sweden, the programme targets four key regions through investment in collection infrastructure, technical assistance, and broad public awareness campaigns to boost recycling and advance circular economy goals.
Success Factors	<ul style="list-style-type: none"> • Strong financial and technical support from international partners (EU, Sweden). • Clear national waste management program with defined targets (2022-2031). • Comprehensive provision of essential infrastructure (containers, bins).

	<ul style="list-style-type: none"> Local co-financing and ownership of future systems by national and local institutions.
Key Takeaways for Replication	<ul style="list-style-type: none"> Secure significant international or national funding and technical assistance for large-scale projects. Develop a clear, long-term national waste management strategy with specific goals. Invest comprehensively in physical infrastructure (collection vehicles, bins, containers). Ensure local ownership and co-financing for long-term sustainability.
Key Challenges	<ul style="list-style-type: none"> High percentage of municipal waste disposed of in landfills (79.45% in 2020). Lack of systematic waste treatment before landfilling. Need to significantly increase recycling rates and reduce biodegradable waste in landfills. Ensuring effective public participation and behavioural change.
How Challenges Were Addressed	<ul style="list-style-type: none"> High landfilling/no pre-treatment: Implementation of a national program to increase source separation and recycling, thereby diverting waste from landfills. Low recycling/biodegradable waste: Direct investment in infrastructure (bins, vehicles) and public campaigns to facilitate separation and collection. Effective public participation: Organization of extensive public information campaigns based on studies and surveys, with specific communication expertise.
Relevant Links & References	Link1 , Link2 , Link3

Success Story No. 9 from Greece	
Title	Synergies and consulting services for urban bioeconomy
Country & Region	Serbia / Belgrade
Policy Area	Sustainable Urban Development, Green Infrastructure, International Cooperation & Knowledge Exchange
Brief Description	Serbia, with ambitious plans to green a quarter of its urban spaces by 2025, is leveraging international collaboration to achieve these goals. The "Green Cities Serbia" project, a Dutch public-private partnership, offers sustainable and innovative solutions for urban greening, including the design of public and commercial green spaces. The initiative facilitates knowledge exchange through study visits of Serbian experts to the Netherlands and aims to enhance the social and economic well-being of Serbia's urban population by integrating green infrastructure into urban planning.
Success Factors	<ul style="list-style-type: none"> Strong commitment from the Serbian government and cities to ambitious greening targets. Financial backing from the Government of the Kingdom of the Netherlands. Effective knowledge exchange through organized study visits, model locations, exhibitions, and interactive workshops. Direct collaboration and sharing of expertise between Dutch solution providers and Serbian stakeholders.
Key Takeaways for Replication	<ul style="list-style-type: none"> Foster international public-private partnerships to leverage expertise and funding for green initiatives.

	<ul style="list-style-type: none"> Organize structured knowledge exchange programs, including study visits to leading "green cities" and interactive workshops. Focus on practical solutions and demonstration projects to showcase the benefits of green infrastructure. Ensure high-level governmental and diplomatic support for such collaborative projects.
Key Challenges	<ul style="list-style-type: none"> Achieving ambitious urban greening targets within a tight timeframe (e.g., 25% by 2025). Integrating sustainable and innovative green infrastructure solutions into existing urban frameworks. Adapting international best practices to local Serbian contexts and regulations. Securing sufficient investments for large-scale green infrastructure projects.
How Challenges Were Addressed	<ul style="list-style-type: none"> Ambitious targets/innovation: The "Green Cities Serbia" project provides sustainable and innovative solutions through Dutch expertise. Knowledge/integration: Knowledge exchange activities (study visits, workshops) enable Serbian experts to learn about and recognize inspiring solutions. Investment: The project is funded through a partnership, providing external investment and facilitating private sector involvement.
Relevant Links & References	Link1 , Link2 , Link3

Success Story No. 10 from Greece	
Title	Funding programmes for green transition, including bioeconomy
Country & Region	North Macedonia / National level
Policy Area	Funding & Investment, Green Economy Transition, Economic Development
Brief Description	North Macedonia's Strategic Green Investment Fund (SGIF) supports the transition to a zero-emission economy by 2050. The fund aims to raise €70 million mainly from private capital to finance green infrastructure, technologies, and bioeconomy projects in industrial zones, targeting medium and large companies to stimulate €750 million in investments over four years.
Success Factors	<ul style="list-style-type: none"> Strong governmental commitment demonstrated by the "Plan for Accelerated Economic Development". Design of a specific, targeted financing mechanism (SGIF). Leveraged substantial private capital (domestic and foreign banks) for green investments. Expert panel for investment project decision-making.
Key Takeaways for Replication	<ul style="list-style-type: none"> Develop a national plan for green economic development to guide investment. Design strategic investment funds with clear targets and financing mechanisms. Prioritize leveraging private capital to supplement public funds for green transition. Establish an expert panel for transparent and effective project selection.
Key Challenges	<ul style="list-style-type: none"> Mobilizing significant private sector financing for green transition initiatives. Attracting both foreign and domestic investors to specific industrial development zones.

	<ul style="list-style-type: none"> • Bridging the gap between ambitious national plans and practical implementation of financing mechanisms.
How Challenges Were Addressed	<ul style="list-style-type: none"> • Mobilizing private financing: The fund is designed with a high reliance (90%) on private capital from domestic and foreign banks, with only 10% government participation. • Attracting investors/project selection: The fund targets foreign and domestic investors, and an expert panel adopts decisions for investment projects. • Bridging gap/implementation: The SGIF is presented as a concrete financing mechanism within the broader "Plan for Accelerated Economic Development," with two large projects already in the pipeline.
Relevant Links & References	Link1 , Link2 , Link3

Success Story No. 11 from Ireland	
Title	Edible Landscapes Project
Country & Region	Ireland – Northern & Western
Policy Area	Social Innovation, Educational, Sustainable Agriculture
Brief Description	Edible Landscapes is a social enterprise project based in the west of Ireland. The aim of the project is to engage primary schools' children to participate in the growing and consuming of food in an environmentally sustainable, climate smart way as a practical and enjoyable means of teaching them about climate change and sustainability. The Food Forest - Climate Education Program was developed by teachers, for teachers, and in November 2021 was launched in local primary schools in Co. Mayo.
Success Factors	<ul style="list-style-type: none"> • Project promoters come from an educational background. • Community development practices of bottom-up stakeholder involvement.
Key Takeaways for Replication	<ul style="list-style-type: none"> • Stakeholder engagement and involvement of teachers, climate and community activists was key to further replication of the success of Edible Landscapes in both primary and secondary school settings. • Encouraging school children to get their hands dirty and to have fun growing food instilled in them an appreciation of where their food comes from and is a practical means of teaching about sustainability and climate change.
Key Challenges	<ul style="list-style-type: none"> • Access to funding as a non-profit organisation. • Overcoming feelings of helplessness among citizens that there is anything practical that they can do in their own lives to combat climate change. • Scalability: how to scale from the local to the regional and national.
How Challenges Were Addressed	<ul style="list-style-type: none"> • Collaborating with research institutions to exploit funding opportunities • Promoting the concept of self-sufficient food communities. • Education about consumption tracking and food air miles versus food grown and produced locally, leading to greater buy-in from participants • Focus on creating good governance practices helped the project to scale.
Relevant Links & References	https://www.ediblelandscapeproject.ie/

Success Story No. 12 from Ireland	
Title	Ireland's Knowledge Centre for Carbon, Climate and Community Action (IKC3)
Country & Region	Ireland – national but with regional impact
Policy Area	Educational, Stakeholder Engagement
Brief Description	IKC3 is a national platform co-developing and delivering knowledge and skills to help enterprises and society transition to a low-carbon economy and promote sustainable living. Funded by the Government's Future Jobs Initiative and the Higher Education Authority, it is led by Munster Technological University in partnership with Trinity College Dublin and University College Dublin.
Success Factors	<ul style="list-style-type: none"> Strong connections to industry stakeholder networks in the food and engineering sectors have facilitated identification of industry skills needs and gaps. Linkages with national and EU partners. A dedicated research team with the expertise and capacity to carry out focused research on skills and education needs in the bioeconomy in Ireland. Roll out of accredited courses in Circular Bioeconomy and Bioeconomy and Business.
Key Takeaways for Replication	<ul style="list-style-type: none"> Importance of constructing practical and accessible pathways between education, skills and industry based on assessed needs of industry. Cultivating partnerships with industry representative bodies and networks not only helps to identify skills needs but also to raise awareness of sustainability and the transition to a low carbon economy. Co-ordination on an EU-wide level to understand trends that EU partners may find in order to prepare to meet challenges in skills shortages and demands.
Key Challenges	<ul style="list-style-type: none"> Matching industry needs with existing skills in the workforce. Managing gaps in knowledge and information-sharing among industry professionals.
How Challenges Were Addressed	<ul style="list-style-type: none"> Identified skills and knowledge gaps to inform education, training and skills courses development. Established the IKC3 Sustainability Professional Network comprising industry, enterprise, SMEs, community groups, social enterprises, and interested individuals to develop their knowledge and skills and share their experiences.
Relevant Links & References	https://ikc3.ie/

Success Story No. 13 from Ireland	
Title	Bioeconomy Ireland Week
Country & Region	Ireland – national but with regional impact
Policy Area	Governance, Stakeholder Engagement, Educational
Brief Description	Bioeconomy Ireland Week, held each October, promotes Ireland's growing bioeconomy through nationwide events involving industry, communities, producers, researchers, and students. Activities include study visits, seminars, and webinars tailored to diverse stakeholders.

Success Factors	<ul style="list-style-type: none"> Event is sponsored and promoted by key Government Departments with responsibility for bioeconomy, ensuring good visibility and political influence. Events are planned to engage diverse stakeholder groups through the most suitable formats, ensuring broad and effective outreach. Event is a key delivery vehicle of Action 1.1 in the Bioeconomy Action Plan 2023-2025 to <i>“facilitate increased public and stakeholder understanding and awareness of bioeconomy and biobased innovation and solutions through undertaking a bioeconomy communications campaign”</i>.
Key Takeaways for Replication	<ul style="list-style-type: none"> Clustering bioeconomy events within a dedicated week enhances visibility and stakeholder engagement compared to standalone activities. Offering a mix of formats—workshops, site visits, webinars—helps engage all quadruple helix stakeholders more effectively.
Key Challenges	<ul style="list-style-type: none"> Scheduling overlaps during Bioeconomy Week Ireland limited stakeholder participation across multiple events due to the small size of the national bioeconomy community, High demand for expert speakers created challenges in securing participation from a limited pool of qualified individuals.
How Challenges Were Addressed	<ul style="list-style-type: none"> Hybrid formats and improved event coordination allowed broader participation and easier recruitment of speakers. Outreach in schools, colleges, and communities increased public awareness of the bioeconomy.
Relevant Links & References	https://irishbioeconomy.ucd.ie/biw/

Success Story No. 14 from Ireland	
Title	Sustainable Tipperary Energy Roadshow 2022
Country & Region	Ireland – Southern Region
Policy Area	Educational, Networking, Other
Brief Description	A joint initiative of Local Enterprise Office Tipperary, County Tipperary Chamber (both of which provide supports to small enterprises in the county), Skillnet (the national talent development agency in Ireland) and Tipperary Energy Agency. The event brought together like-minded companies working on renewable energy, circular economy, maximising resources and lowering carbon footprint. The event offered advice and details of grants and services available to fulfil organisations' sustainability goals.
Success Factors	<ul style="list-style-type: none"> Public-private collaboration between sustainable energy practitioners, enterprise support organisations and training providers. One-stop shop roadshow for advice on different elements of sustainable energy, highlighting services and financial and non-financial supports available from state agencies. The roadshow travelled to different parts of the County making the information accessible to a greater number of communities, individuals, farmers, homeowners and business owners.
Key Takeaways for Replication	<ul style="list-style-type: none"> First event of its kind in Tipperary and has potential for regional replication. The event was organised on a county level which makes its impact more dynamic and responsive to local/regional needs.

Key Challenges	<ul style="list-style-type: none"> • Low level of public knowledge about supports available for changeover to renewable energy. • This was the first year of the event (2022).
How Challenges Were Addressed	<ul style="list-style-type: none"> • The roadshow was pitched at and promoted to a large stakeholder group – homeowners, small business owners, farmers, communities. • Promotion campaign advertising the event well in advance in local newspapers, on participating organisations' websites and via social media channels.
Relevant Links & References	http://sustainabletipp.ie/sustainable-tipp-energy-expo-roadshow/

Success Story No. 15 from Ireland	
Title	ABC Economy
Country & Region	Ireland, Southern Region, Northern & Western Region
Policy Area	Governance
Brief Description	The ABC Economy project, led by University College Dublin and partners, developed sustainable bioeconomy value chains by mapping regional biomass, engaging stakeholders, and assessing technologies like anaerobic digestion and pyrolysis. Focusing on agricultural residues, it produced a seven-step Bioeconomy Innovation Blueprint to guide local and regional strategy development in Ireland.
Success Factors	<ul style="list-style-type: none"> • Regional Biomass Assessment: Comprehensive mapping of local biomass resources, such as poultry litter in Monaghan and cattle slurry in Tipperary, enabled the identification of viable feedstocks for bio-based value chains. • Stakeholder Engagement: Active collaboration with primary producers, processors, and waste management companies ensured that proposed solutions were grounded in practical realities and local needs. • Technology Evaluation: Assessment of various technologies, including anaerobic digestion and pyrolysis, facilitated the development of appropriate cascading systems tailored to regional contexts.
Key Takeaways for Replication	<ul style="list-style-type: none"> • Start with Regional Biomass Mapping: Understanding local bioresources is essential for designing realistic and sustainable bioeconomy value chains. • Engage Stakeholders Early: Involving farmers, processors, local authorities, and technology providers from the outset ensures buy-in. • Focus on Proven Technologies: Favouring mature technologies like anaerobic digestion increases feasibility and accelerates implementation.
Key Challenges	<ul style="list-style-type: none"> • Data Gaps on Biomass Availability: Limited access to reliable, region-specific data on bioresource quantities and quality hindered planning. • Fragmented Stakeholder Landscape: Coordinating between diverse actors – farmers, processors, local authorities, and technology providers – was time-consuming and complex. • Regulatory and Planning Barriers: Planning permission, environmental regulations, and licensing for bio-based facilities posed obstacles, especially for smaller operators.
How Challenges Were Addressed	<ul style="list-style-type: none"> • Data Gaps on Biomass Availability – Conducted detailed regional biomass resource mapping for Tipperary and Monaghan, including agricultural and food waste streams, to inform value chain design.

	<ul style="list-style-type: none"> • Fragmented Stakeholder Landscape – Facilitated stakeholder workshops and interviews to build trust, share knowledge, and co-design solutions suited to local needs. • Regulatory and Planning Barriers – Engaged with local authorities to understand planning constraints and included regulatory considerations in feasibility assessments.
Relevant Links & References	https://www.cre.ie/web/abc-economy/

Success Story No. 16 from Slovakia	
Title	Local Suppliers Providing Food to Regional Schools and Other Facilities
Country & Region	Slovakia – Banská Bystrica Self-governing Region
Policy Area	Public Procurement, Social Economy, Sustainable Agriculture
Brief Description	<p>The initiative aims to prioritize locally sourced food for regional schools and other facilities while supporting local food producers and sustainable short supply chains. To comply with regulations, food procurement is limited to suppliers registered as social enterprises under the Social Economy Act. The region also facilitated the establishment of a social enterprise to enable participation in this initiative.</p>
Success Factors	<ul style="list-style-type: none"> • Strong alignment with public procurement regulations • Support for local food producers and social enterprises • Creation of a stable market for local farmers • Regional government assistance in setting up social enterprises
Key Takeaways for Replication	<ul style="list-style-type: none"> • Public procurement can be leveraged to promote local food systems • Collaboration between regional authorities and social enterprises is essential • A well-structured tender process ensures fairness and efficiency
Key Challenges	<ul style="list-style-type: none"> • Ensuring compliance with public procurement laws • Encouraging local producers to become registered social enterprises
How Challenges Were Addressed	<ul style="list-style-type: none"> • Limiting participation to registered social enterprises under Social Economy Act • Providing regional support for setting up social enterprises
Relevant Links & References	https://www.bbsk.sk/vyzva

Success Story No. 17 from Slovakia	
Title	Landscape Recovery Program of the Košice Region
Country & Region	Slovakia – Košice Region
Policy Area	Climate Adaptation, Water and Land Management, Ecosystem Restoration
Brief Description	<p>The Landscape Recovery Program (2021–2030) aims to optimize land use in response to climate change challenges. Six Water Councils, comprising 120 representatives from local and regional authorities, agriculturists, activists, and foresters, were established to implement integrated water and land-use management. The councils focus on retaining</p>

	rainwater, increasing soil fertility, and restoring biodiversity to enhance resilience against extreme weather conditions such as droughts and floods.
Success Factors	<ul style="list-style-type: none"> Strong collaboration among multiple stakeholders (local government, district authorities, and environmental experts) Establishment of Water Councils to ensure long-term governance and implementation Focus on ecosystem restoration and biodiversity renewal
Key Takeaways for Replication	<ul style="list-style-type: none"> The Water Council model can be adapted to other regions facing similar climate challenges Local stakeholder engagement is crucial for effective land and water management Rainwater retention strategies help prevent natural disasters and ensure sustainable water supply
Key Challenges	<ul style="list-style-type: none"> Coordinating multiple stakeholders with diverse interests Ensuring sustained funding and resources for long-term implementation
How Challenges Were Addressed	<ul style="list-style-type: none"> Establishment of Water Councils to ensure structured decision-making and coordination Implementation of localized water retention and soil fertility measures tailored to each territory
Relevant Links & References	https://web.vucke.sk/files/sk/kompetencie/regionálny-rozvoj/program-obnovy-krajiny/plan_vodnych_rad.pdf

Success Story No. 18 from Slovakia	
Title	Regional Municipal Biomass Project on Poľana
Country & Region	Slovakia – Banská Bystrica Self-governing Region
Policy Area	Renewable Energy, Energy Self-Sufficiency, Sustainable Development
Brief Description	A collaborative initiative involving eight mountain villages around Banská Bystrica, this project provides local heat production from waste biomass to supply 32 municipal buildings. Led by Friends of the Earth-CEPA, it aims to reduce heating costs, improve air quality, and promote energy self-sufficiency. The project covers the entire chain from fuel preparation, storage, and distribution to heat production in 15 modernized biomass boiler rooms. Over ten years, it has contributed to a reduction of approximately 8,500 tons of CO ₂ emissions.
Success Factors	<ul style="list-style-type: none"> Strong collaboration among municipalities, supported by NGOs (CEPA and Friends of the Earth) Comprehensive approach covering the entire biomass heating process Significant reduction in CO₂ emissions and improved air quality Economic savings and increased energy independence for rural communities
Key Takeaways for Replication	<ul style="list-style-type: none"> Strong local governance and partnerships are crucial for successful implementation Long-term planning and commitment are required to transition to renewable energy sources Economic self-sufficiency can be improved through decentralized energy solutions

Key Challenges	<ul style="list-style-type: none"> • Long preparation and implementation time (nearly 10 years) • Initial investment costs for infrastructure and modernization of heating systems
How Challenges Were Addressed	<ul style="list-style-type: none"> • Collaboration with NGOs provided technical and financial support • Gradual implementation allowed for financial sustainability and adaptation
Relevant Links & References	https://www.inforse.org/europe/fae/Biomass%20for%20Polana%20region.htm

Success Story No. 19 from Slovakia	
Title	Joint Chemical Laboratory for the Service of Bioeconomy in the Slovak-Hungarian Border Region
Country & Region	Slovakia-Hungary Border Region
Policy Area	Waste Biomass Utilization, Cross-Border Cooperation
Brief Description	Established in 2012, this joint chemical laboratory is a collaboration between two institutions from Slovakia and Hungary. The initiative focuses on studying the chemical utilization of waste biomass in the border region, with the goal of supporting bioeconomic activities. The project aims to expand the operational infrastructure of the existing laboratory to better serve regional agribusinesses, farmers, and other local actors by providing enhanced chemical analysis services. Additionally, it seeks to strengthen cross-border cooperation between institutions and stakeholders involved in biomass management.
Success Factors	<ul style="list-style-type: none"> • Long-term cross-border cooperation between Slovak and Hungarian institutions • Continuous operation beyond initial funding, sustained through institutional resources • Direct support for bioeconomy stakeholders through chemical analysis of biomass waste and by-products • Strengthened inter-institutional and citizen-level cooperation across borders
Key Takeaways for Replication	<ul style="list-style-type: none"> • Cross-border scientific collaboration can effectively support regional bioeconomic development • Providing practical chemical information to stakeholders enhances sustainable waste biomass utilization • Expanding laboratory capacity allows for greater support of agribusinesses and local bioeconomy actors
Key Challenges	<ul style="list-style-type: none"> • Ensuring long-term financial sustainability of the joint laboratory • Expanding partnerships and engagement with local stakeholders
How Challenges Were Addressed	<ul style="list-style-type: none"> • Partners continued collaboration using their own resources after initial project phase • The laboratory's role was broadened to attract more stakeholders from agribusiness and biomass industries
Relevant Links & References	https://www.skhu.eu/funded-projects/joint-chemical-laboratory-for-the-service-of-bioeconomy-in-the-slovak-hungarian-border-region

Success Story No. 20 from Slovakia

Title	Energy Use of Biomass in Kysucký Lieskovec
Country & Region	Slovakia - Žilina region
Policy Area	Renewable Energy, Sustainable Biomass Utilization
Brief Description	A biomass facility in Kysucký Lieskovec processes 25,000 tons of biomass annually, covering the entire wood biofuel supply chain, from raw material production to quality-controlled fuel distribution. The BIOMASA association played a key role in reconstructing 44 furnaces in small and medium-sized facilities, promoting biomass as a sustainable energy source. The initiative won the Climate Star 2004 award for its contribution to sustainable energy.
Success Factors	<ul style="list-style-type: none"> • Comprehensive approach covering the full supply chain. • International recognition, boosting credibility and awareness. • A focus on quality control and efficiency in biomass production.
Key Takeaways for Replication	<ul style="list-style-type: none"> • Establish a well-integrated biomass supply chain to ensure sustainability. • Promote awareness and educate stakeholders on biomass benefits. • Secure funding and institutional backing to scale up impact.
Key Challenges	<ul style="list-style-type: none"> • Ensuring a consistent supply of raw biomass materials. • Overcoming logistical barriers in distribution. • Raising public awareness and acceptance of biomass energy.
How Challenges Were Addressed	<ul style="list-style-type: none"> • Established long-term partnerships with suppliers to stabilize raw material flow. • Developed an optimized logistics network for efficient distribution. • Launched educational campaigns to showcase the environmental and economic benefits of biomass energy.
Relevant Links & References	https://www.biopel.sk/sk/kontakt

Success Story No. 21 from Spain	
Title	Circular Bioeconomy Forum
Country & Region	Spain & Andalusia
Policy Area	Governance, Stakeholder Engagement
Brief Description	The Circular Bioeconomy Forum in Andalusia brought together key actors from government, industry, civil society, and research across regional, national, European, and Central American levels. Organized by Andalusia's Ministry of Agriculture in collaboration with JRC and IFAPA, the Forum facilitated experience sharing on bioeconomy policies, strategies, challenges, and opportunities. All event materials are available online.
Success Factors	<ul style="list-style-type: none"> • Clarity in the objectives and vision. • Appropriate selection of speakers and experts. • The Forum featured relevant and up-to-date content, including bioeconomy policies and strategies across regions, SWOT analyses of the model, successful case studies, market and business model insights, bioproducts and biomass resources, and discussions on bioeconomy resilience to environmental and climate challenges.

Key Takeaways for Replication	<ul style="list-style-type: none"> • This event was an international meeting point for the exchange of experiences that brought together more than 350 participants in person and online. • All information is available on the event's website and the monograph 'Circular bioeconomy, the key to sustainable territorial development' has been elaborated.
Key Challenges	<ul style="list-style-type: none"> • Involvement of the quadruple helix stakeholders. • Debate on the circular bioeconomy at regional, national, European and Central American levels.
How Challenges Were Addressed	<ul style="list-style-type: none"> • The event was attended by 26 speakers from different sectors at European, national, regional and Central American level and with the participation of more than 350 people, both in person and online of quadruple helix sector. • The Forum was structured around an introductory keynote speech on the situation and prospects of the bioeconomy in the European Union, followed by four round tables: Policies and Strategies, Territorial Governance, Success Stories and Value Chain.
Relevant Links & References	<p>https://www.bioeconomiaandalucia.es/foro-de-bioeconomia-circular/</p> <p>https://journals.uco.es/bioeconomy/article/view/17445/15843</p>

Success Story No. 22 from Spain	
Best Practice Title	Use of treated sewage sludge in the agricultural sector
Country & Region	Spain & Andalusia
Policy Area	Legislation, Environmental Action
Brief Description	The use of treated sewage sludge in agriculture has been regulated, specifically in the soils of the Andalusian region. Through this practice, waste is valorised and represents a benefit to agriculture in line with what is proposed in the Andalusian Strategy for Circular Bioeconomy, by converting waste streams into value-added products (in particular, through the contribution of organic matter and phosphorus, deficient materials in Mediterranean soils) to improve production and efficiency in the use of sustainable resources. Treated sewage sludge will maintain its waste status until its effective incorporation into the soil, and as such must be handled and applied by the entities legally established for this purpose.
Success Factors	<ul style="list-style-type: none"> • Valorisation of waste (treated sewage sludge) and benefit for agriculture. • Improvement in the management of treated sewage sludge. • Awareness-raising on the use of waste (treated sewage sludge). • Reducing consumption of traditional products on agricultural soils, reducing the costs for farmer.
Key Takeaways for Replication	<ul style="list-style-type: none"> • It has been transferred to the eight provinces of Andalusia. • It has no deployment barriers for other regions. • There are more than 4.600 agriculture areas have availed of this practice.
Key Challenges	<ul style="list-style-type: none"> • To update and improve the monitoring and control mechanisms on the use of treated sludge from the treatment plant in the agricultural sector in the Autonomous Community of Andalusia, guaranteeing adequate recovery in agricultural soils.

How Challenges Were Addressed	<ul style="list-style-type: none"> This practice is established by the Orden of 6 August 2018 (jointly issued by the Ministries of Agriculture, Fisheries and Rural Development, and Environment and Spatial Planning), regulating the use of treated sewage sludge in agriculture.
Relevant Links & References	https://www.juntadeandalucia.es/organismos/agriculturapescaaguaydesarrollorural/areas/agricultura/produccion-agricola/paginas/lodos.html

Success Story No. 23 from Spain	
Best Practice Title	Greenhouse soil biosolarisation in horticulture
Country & Region	Spain & Andalusia (Almería)
Policy Area	Technological Agriculture Innovation
Brief Description	This practice helps growers design crop rotations and control strategies to reduce soil-borne diseases. Biosolarisation involves adding fresh organic matter (crop residues) to soil before solarisation, enhancing its effectiveness by improving soil health and beneficial microorganisms. It offers an eco-friendly way to manage crop residues and is supported by Spain's national environmental directives, promoted by IFAPA.
Success Factors	<ul style="list-style-type: none"> Incorporation of crop residues as organic soil amendments. Environmentally friendly practice serving as a reference for horticultural production and organic farming transitions. Innovative control strategies presented via clear tutorial videos and detailed factsheets. Cost reductions achieved by eliminating plastic solarisation, avoiding plastic purchases, lowering chemical fumigant use, and enabling valorisation of crop residues.
Key Takeaways for Replication	<ul style="list-style-type: none"> This practice has been driven by the Best4Soil thematic network, through Bes4soil Project, which has received funding from the European Union's Horizon 2020. It has been transferred to 20 European countries. There are not regional deployment barriers in other regions. This practice inter-connects growers, advisers, educators and researchers
Key Challenges	<ul style="list-style-type: none"> To maintain, improve or re-establish soil health in Europe.
How Challenges Were Addressed	<ul style="list-style-type: none"> In the Best4soil thematic network 20 European countries have involved, where the knowledge of soil health with the communities of practice has been exchanged.
Relevant Links & References	https://www.best4soil.eu/

Success Story No. 24 from Spain	
Best Practice Title	Green manures and cover crops in field and horticultural crops.
Country & Region	Spain & Andalusia (Almería)
Policy Area	Technological Agriculture Innovation

Brief Description	This practice supports practitioners in building crop rotations and control strategies to reduce soil-borne diseases. Cover crops and green manures improve soil structure, reduce erosion and nutrient leaching, suppress weeds, and feed the soil microbiome. Some fix or make nutrients more available, while also helping sequester carbon. Included in Spain's national environmental directives, it's promoted by IFAPA.
Success Factors	<ul style="list-style-type: none"> Reducing the leaching of nutrients, avoiding erosion, improving soil structure or suppressing weeds. Promoting soil microbiological biodiversity. Improving soil water availability. Greater satisfaction and social benefit due to the multiple positive externalities derived from good practice.
Key Takeaways for Replication	<ul style="list-style-type: none"> It has been transferred to 20 European countries. There are not regional deployment barriers in other regions. This practice inter-connects growers, advisers, educators and researchers.
Key Challenges	<ul style="list-style-type: none"> To maintain, improve or re-establish soil health in Europe.
How Challenges Were Addressed	<ul style="list-style-type: none"> In the Best4soil thematic network 20 European countries have involved, where the knowledge of soil health with the communities of practice has been exchanged.
Relevant Links & References	https://www.best4soil.eu/

Success Story No. 25 from Spain

Best Practice Title	Interactive map Atresbio
Country & Region	Spain & Andalusia
Policy Area	Stakeholder Mapping and Networking
Brief Description	ATRESBIO, led by CTA, promoted bio-based value chains from olive groves, horticulture, and algae in Andalusia. The project assessed regional research and innovation capacities, identified improvement areas, and created a roadmap and technological monitoring system to boost competitiveness, sustainability, and job growth in Andalusia's bioeconomy sector.
Success Factors	<ul style="list-style-type: none"> Delimited number of mapping requirements Use of intermediary entities (as universities results transfer offices) Intensive communication strategy
Key Takeaways for Replication	Mapping activity could be an endlessly and quick outdated action, thus establishing specific requirements to narrow down the research, as well as identify potential benefits for mapped entities to inform regarding updated proactively could mitigate it.
Key Challenges	<ul style="list-style-type: none"> Missing relevant actors from the mapping Track changes within the information obtained Disseminate and communicate the mapping as a regional tool
How Challenges Were Addressed	See "Key Takeaways for Replication".

Relevant Links & References	https://atresbio.corporaciontecnologica.com/en/the-project/
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2.5.5 *Lessons Learnt*

This section shares 8 lessons drawn from challenges experienced in the ROBIN pilot regions. Each lesson includes the title, country and region, and policy area, along with a brief description of the situation. It outlines the key challenges, explains lessons learnt, and reflects on what should be avoided in future implementations. Relevant links and references are included for additional context.

Lesson Learnt No. 1 from Germany	
Title	Importance of personal contacts and reputation
Country & Region	Germany, Baden-Württemberg
Policy Area	Stakeholder engagement, networking
Brief Description	Involving key stakeholders during project workshops
Key Challenges	After the withdrawal of BIOPRO as project partner, S2i was left as the single representant for Baden-Württemberg. Although S2i has been involved in various bioeconomy projects, it did not have the same, wide network as BIOPRO. It has been a challenge to reach and involve all key stakeholders at the beginning.
What Went Wrong	<ul style="list-style-type: none"> • Engaging stakeholders beyond our existing network • Achieving high attendance despite limited personal contacts
Lessons Learnt	<p>Personal connection / network is important:</p> <ul style="list-style-type: none"> • Identify a person that is well connected with the relevant stakeholders to help reach these stakeholders. Once you get to know these stakeholders personally, it is easier to involve them in further events or activities • Try to maintain (regular) contact with the stakeholders • Attend relevant events to network and get to know stakeholders
Relevant Links & References	N/A

Lesson Learnt No. 2 from Greece	
Title	The Importance of Personal Outreach in Stakeholder Engagement
Country & Region	Greece – Central Macedonia
Policy Area	Stakeholder Engagement / Youth Engagement / Awareness Raising
Brief Description	Networking for Bioeconomy Careers: The Bioeconomy Changemakers Festival Satellite Event

Key Challenges	As part of the Bioeconomy Changemakers Festival, Q-PLAN organised the event “Careers and Opportunities in the Bioeconomy Sector” in Thessaloniki. The event connected students and young professionals with experienced figures in the Greek bioeconomy sector through storytelling and knowledge exchange. It also helped strengthen connections within the regional ecosystem.
What Went Wrong	<ul style="list-style-type: none"> • Engaging stakeholders beyond our existing network • Encouraging participation from youth unfamiliar with bioeconomy careers • Achieving high attendance despite limited personal contacts with some invitees
Lessons Learnt	<p>While general outreach through email and social media was valuable, we noticed that engagement was stronger when personal connections or prior relationships existed. Cold outreach to unfamiliar stakeholders resulted in fewer responses.</p> <ul style="list-style-type: none"> • Personalised outreach and leveraging existing networks can significantly improve event participation • Early involvement of key contacts and speakers supports visibility and trust • Broad awareness campaigns benefit from being complemented with direct, relationship-based communication
Relevant Links & References	N/A

Lesson Learnt No. 3 from Greece	
Title	Stakeholders Engagement Event: Academia
Country & Region	Greece, Region of Central Macedonia
Policy Area	Stakeholder Engagement
Brief Description	The primary goal of this action was to foster collaboration and knowledge exchange in Central Macedonia and local academic entities. By engaging with universities, colleges, research institutions, and scholars, the action aimed to bridge the gap between industry and academia, promoting the dissemination of research, best practices, and innovative ideas. This engagement not only facilitated mutual learning but also sought to identify areas of potential collaboration and contribution from academia to the bioeconomy cluster.
Key Challenges	<ul style="list-style-type: none"> • It was challenging to find people willing to engage. The primary challenge was to find stakeholders who were willing to participate and engage in this action. • Fixed curricula and lack of time in academia was limiting engagement opportunities. • It was difficult to connect stakeholders working in the bioeconomy sector but that didn't necessarily refer to themselves as bioeconomy stakeholders.
What Went Wrong	<ul style="list-style-type: none"> • Some stakeholders lacked full understanding of the regional bioeconomy status, needs, and challenges, so significant time was devoted to explaining the ROBIN project's objectives and how its tools support regional decision-making. • Although the event focused on academia, many stakeholders emphasized public sector and regional development actions, reflecting ROBIN's role in supporting regional authorities and fostering discussions on improving local models and policies.

Lessons Learnt	<ul style="list-style-type: none"> • A major obstacle is the absence of clear strategies and bureaucratic barriers in regional policymaking, which undermine actors' motivation for transformative change. • Targeted stakeholder engagement is crucial; organizing tailored events for specific groups can improve participation. • Greater awareness of ROBIN tools and the toolbox among stakeholders is needed. • Stakeholder engagement should be continuous, supported by all relevant regional actors.
Relevant Links & References	N/A

Lesson Learnt No. 4 from Ireland	
Title	'Towards 2030: Developing a Circular Bioeconomy Governance Model for our Communities, Cities and Regions' stakeholder event
Country & Region	Ireland – Southern Region
Policy Area	Governance, Stakeholder Engagement, Networking
Brief Description	<p>This workshop formed part of the ROBIN Project contribution in the southern region to help create a bioeconomy governance model for regional and local authorities in Ireland aligned to the Actions set out in the Bioeconomy Action Plan. The workshop consisted of presentations from key stakeholders in the Irish bioeconomy and was followed by a beta validation workshop of two of the tools in development by the ROBIN Project to support regions to develop bioeconomy governance models and strategies – the Circular Bioeconomy Governance Model Canvas and the Policy Monitoring Tool.</p>
Key Challenges	<ul style="list-style-type: none"> • Difficulty achieving meaningful engagement with civil society stakeholders • Communicating the benefits of attendance to a wider range of stakeholders, including business and producers • Bioeconomy in Ireland is still in its early stages, with the respective roles of the different tiers of government still in development as to bioeconomy policy delivery
What Went Wrong	<ul style="list-style-type: none"> • Lower than expected engagement with producers, industry and civil society stakeholders. • The event formed part of a national week of activities to promote the bioeconomy, so it was not possible to attract a high-profile speaker from government. • There was a wide disparity of knowledge and experience of the bioeconomy among stakeholders in attendance, and this made it challenging to acquire valuable feedback on the Project tools and their usability.
Lessons Learnt	<ul style="list-style-type: none"> • Prioritise the harder to reach stakeholder groups when organising events • Better communication with and from national organisers of the Bioeconomy Ireland Week event to avoid timetable clashes that lead to reduced numbers of attendees.
Relevant Links & References	<p>https://irishbioeconomy.ucd.ie/biw/</p>

Lesson Learnt No. 5 from Ireland	
Title	Engagement with national bioeconomy governance structures
Country & Region	Ireland – Southern Region
Policy Area	Governance
Brief Description	<p>The National Bioeconomy Implementation Group is led by the Department of Agriculture, Food and the Marine and the Department of the Environment, Climate and Communications. The Group is tasked with developing bioeconomy policy. Aside from gaining views from across the bioeconomy, and developing a participatory approach, the forum also enables networking and engagement among bioeconomy stakeholders. The Forum is advised by a scientific advisory group bringing various expertise across bioeconomy topics.</p>
Key Challenges	<ul style="list-style-type: none"> • Ireland is at an early stage in its development of bioeconomy governance and assigning responsibility for delivery at the various tiers of government remains underdeveloped. • Ireland is an immature bioeconomy and there are difficulties in pointing to tangible and relatable examples to sell the benefits to stakeholders • Regional government in Ireland is comparatively weak by EU standards
Lessons Learnt	<ul style="list-style-type: none"> • Achieving comprehensive stakeholder buy-in when responsibility for implementation at different tiers of government is, as of yet, not well defined • Weak recognition of regional needs in national planning, including in bioeconomy policy
Lessons Learnt	<ul style="list-style-type: none"> • National bioeconomy policy should be led by regional planning strategies and regional needs • Earlier and clearer communication of roles and responsibilities of the regional authority to project partners and stakeholders so that expectations are better managed.
Relevant Links & References	N/A

Lesson Learnt No. 6 from Slovakia	
Title	Biomass as a Source of Heating in Oravská Polhora
Country & Region	Slovakia - Žilina Region
Policy Area	Renewable Energy, Bioeconomy Development, Municipal Energy Transition
Brief Description	<p>The municipality of Oravská Polhora implemented a transition to wood pellet heating in municipal buildings, including a school, kindergarten, municipal office, and cultural center. The project aimed to reduce energy intensity and integrate renewable sources, such as photovoltaic panels, to enhance sustainability.</p>
Key Challenges	<ul style="list-style-type: none"> • Transitioning from solid fuels to wood pellets required substantial infrastructure adaptation. • Securing financing for biomass facility upgrades proved complex. • Ensuring long-term sustainability and policy support for bioeconomy expansion.

Lessons Learnt	<ul style="list-style-type: none"> The financing model focused on modernizing existing fossil fuel-based energy facilities, rather than a direct investment in new, fully optimized biomass infrastructure. This approach limited efficiency gains and prolonged reliance on outdated systems.
Lessons Learnt	<ul style="list-style-type: none"> Bioeconomy development requires proactive financial and policy support, not just strategic goal setting. Future projects should prioritize new, fully optimized biomass-based energy systems rather than simply retrofitting fossil fuel infrastructure. A clear and long-term investment strategy is necessary to ensure the sustainability of renewable energy transitions.
Relevant Links & References	https://www.oravskapolhora.sk/

Lesson Learnt No. 7 from Slovakia	
Title	Straw Boiler in the Primary School in Hrušov
Country & Region	Slovakia - Banská Bystrica Region
Policy Area	Renewable Energy, Bioeconomy, Rural Development
Brief Description	In 2006, the primary school in Hrušov, a small village in the Veľký Krtíš district, underwent a renovation that included insulation and a switch to straw-based heating. This transition resulted in a 60% reduction in energy consumption and halved heating costs, demonstrating the potential of local renewable energy sources for rural communities.
Key Challenges	<ul style="list-style-type: none"> Exploring the feasibility of locally available biomass for small and medium-scale heating facilities. Addressing economic constraints in less affluent regions. Ensuring a reliable and sustainable supply chain of straw for heating.
What Went Wrong	<ul style="list-style-type: none"> Challenges in securing a consistent straw supply for heating, highlighting the need for a more structured biomass sourcing strategy.
Lessons Learnt	<ul style="list-style-type: none"> A thorough feasibility analysis of biomass production and consumption partnerships is essential to avoid supply chain issues. Sustainable development requires coordinated cooperation between regional biomass producers and local consumers. Environmental, economic, and social aspects must all be carefully evaluated to ensure long-term viability.
Relevant Links & References	https://www.hrusov.sk/

Lesson Learnt No. 8 from Spain	
Title	Identification of key stakeholders for regional bioeconomy development
Country & Region	Andalusia, Spain

Policy Area	Stakeholder Engagement
Brief Description	To identify and analyse the key relevant stakeholders who play a significant role in the regional bioeconomy. It implies including stakeholders of the Andalusian quadruple helix. The identification of key stakeholders for regional bioeconomy development would allow the construction of value chains and the generation of a market for bio-based products in Andalusia.
Key Challenges	<ul style="list-style-type: none"> • Perform a comprehensive review of all the potential stakeholders • Quick outdate of the information recorded • High demand for resources
Lessons Learnt	The list of stakeholders could have left out some regional player.
Lessons Learnt	Mappings should include some frameworks to narrow down the search. For keeping it updated, resources should be allocated periodically.
Relevant Links & References	N/A

2.6 Summary of the Replication Guide's Key Messages and Next Steps

Summary of the Replication Guide and Toolkit

The ROBIN Replication Guide and Toolkit serves as a comprehensive, step-by-step framework to help European regions replicate and adapt circular bioeconomy governance models tested in the ROBIN project. Rooted in co-creation, pilot validation, and cross-regional learning, the guide provides actionable methods for stakeholder engagement, governance innovation, and policy implementation.

It consists of five main steps:

1. **INITIATE** – Establish Multi-Actor Regional Constellations (MARCs) to build inclusive governance platforms.
2. **ASSESS** – Analyse governance landscapes using tools like the Typology Matrix and case study benchmarks.
3. **ENVISION & PLAN** – Co-create governance models and design regional implementation strategies.
4. **IMPLEMENT** – Apply tools from the ROBIN Toolbox, including monitoring systems and planning instruments.
5. **EVALUATE** – Monitor impact using ROBIN's Policy Monitoring System and engage with EU-level initiatives like CCRI-CSO.

The accompanying Toolkit includes digital tools, training modules, good practice examples, glossary and other related materials. Its design supports users across various sectors and governance levels, enabling flexibility and adaptation to local contexts. Pilot experiences from five regions and beyond demonstrate its usability and transferability.

Key Messages

- **Replication is feasible and scalable:** The ROBIN methodology is tested, structured, and transferable to different regional contexts with proper stakeholder engagement and institutional support.
- **Stakeholder inclusion is central:** Building trust and co-creating with diverse actors (public, private, civil, academic) ensures legitimacy, adaptability, and long-term impact.
- **Policy alignment adds value:** The guide supports regions in aligning their initiatives with broader EU frameworks like the Green Deal, Circular Economy Action Plan, and CCRI.
- **Tools increase capacity:** The ROBIN Toolbox and Toolkit provide user-friendly resources for governance design, policy monitoring, and environmental planning.
- **Cross-regional learning is essential:** Lessons from pilot regions help others avoid pitfalls, refine strategies, and scale innovations more effectively.

These key messages are further illustrated and summarized in *Figure 6*.

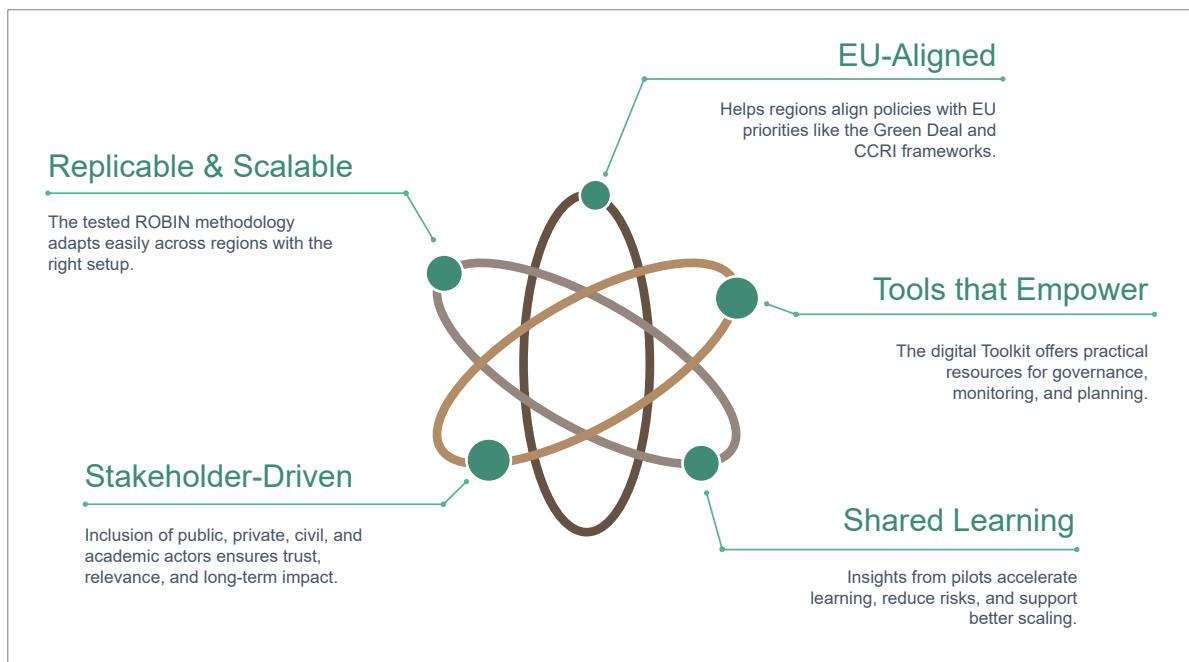


Figure 6: Key Messages of the ROBIN Replication Guide & Toolkit

Next Steps

- **Dissemination and Training:** Promote the Replication Guide and Toolkit across regional governance networks, using webinars, workshops, and the Train-the-Trainer format.
- **Pilot New Regions:** Identify and support new European regions willing to pilot the ROBIN approach using tailored action plans and technical support.
- **Strengthen the CCRI Link:** Formalize collaboration with the CCRI-CSO through stakeholder engagement and resource sharing.
- **Foster Policy Uptake:** Advocate for the inclusion of ROBIN-inspired practices in EU and national bioeconomy strategies through policy briefs and dialogues.

3. Policy Recommendations List

3.1 Background and Context

The Policy Recommendations presented herein provide practical guidance for European regions and Member States in the design, implementation, and management of circular bioeconomy governance models. They are grounded in the empirical findings of the ROBIN project, enriched by extensive synergy activities with related EU-funded initiatives, and aligned with the overarching objectives of the EU Bioeconomy Strategy. The recommendations deliver actionable policy insights aimed at accelerating the bioeconomy transition, while simultaneously promoting regional development, environmental sustainability, and economic competitiveness.

Recognising the diversity of regional contexts and varying stages of bioeconomy development across Europe, the recommendations reflect a spectrum of experiences. Some are derived from more advanced regions with established bioeconomy practices, while others are informed by the emerging efforts and challenges faced by less developed regions in this domain.

3.2 Methodology

The Policy Recommendations List results from a structured and participatory methodological process grounded in the ROBIN project's multi-actor and co-creation principles. The methodology integrated region-specific insights, cross-project knowledge exchange, and interactive validation tools, ensuring that the recommendations are both context-sensitive and relevant across different regional and governance landscapes. This methodological approach is visually summarized in *Figure 7*.



Figure 7: Policy Recommendations Methodology Visualisation

Steps in the Methodological Development

1. Regional Insights from MARCs and Governance Co-Creation:

The foundation of the Policy Recommendations was built through an extensive process of stakeholder engagement in ROBIN’s five pilot regions. Each region established a Multi-Actor Regional Constellation and collaboratively developed its Circular Bioeconomy Governance Model. These locally tailored models revealed practical challenges, gaps, and enabling conditions which were systematically analysed across the project regions to extract transferrable insights and action points.

2. Cross-Regional Learning and Consolidation:

Beyond local engagements, ROBIN’s methodology incorporated a cross-regional lens through synthesis workshops. These helped identify recurring issues and innovative governance responses that could be scaled or adapted across different European contexts.

3. A Forum Stimulating Mutual Learning and Knowledge Exchange Between Key Stakeholders

A key component of the methodology was the Mutual Learning Workshops, especially the 2nd European Mutual Learning Workshop (titled “*BioFUTURE – Knowledge sharing for unlocking the potential of bioeconomy in Europe from the regional policy perspective*”). This workshop significantly contributed to the policy recommendations in several ways:

- **Project Synergy Session:** Several pre-workshop organisational meetings gathered policy-relevant insights from all participating EU-funded projects (BIOTRANSFORM, BIOMODEL4REGIONS, ShapingBio, and ROBIN). Project representatives were invited to reflect on key focus areas and barriers identified within their respective initiatives.
- **Creation of a 10-Topic Shortlist (see Annex III):** A condensed list of ten trending policy-relevant topics was developed to synthesise and guide the structure of the recommendations. This list was compiled by PED through coordination with participating projects and served as the analytical backbone for clustering the recommendations.
- **Significance of the 2nd Mutual Learning Workshop:** By acting as both a sounding board and knowledge integrator, the 2nd MLW served as a pivotal moment in ROBIN’s policy development process. It not only enabled the collection of evidence and perspectives beyond ROBIN but also offered a meta-analytical layer – identifying strategic overlaps among Horizon Europe bioeconomy projects.
- **Real-Time Feedback Using Mentimeter (see Annex IV):** The Mentimeter, an interactive polling tool, was used during the workshop to gather real-time validation of emerging policy priorities of ROBIN. Participants were asked to prioritise specific recommendations, evaluate their perceived relevance and feasibility, and contribute qualitative comments. This interactive layer added a quantitative and sentiment-based dimension to the recommendation refinement process, helping to identify areas of consensus and divergence. This real-time feedback process is illustrated by screenshots from the Mentimeter session, as shown in *Figure 8*.

The 10-topic list and Mentimeter results are thus not merely consultation tools but represent structured contributions to the methodological rigour of the final policy outcomes.

4. Strategic Validation through the Advisory Board and Expert Review:

Recommendations were further shaped through collaborative analysis involving the ROBIN partners, pilot region representatives, and Advisory Board members, ensuring relevance and evidence-backing. The draft Policy Recommendations were presented to the ROBIN Advisory Board during the 6th ROBIN Project Meeting. Their feedback contributed to refining the clarity, policy alignment, and strategic orientation of the final list.

5. Joint Policy Recommendations through EU Project Synergies:

In addition to project-internal processes, the ROBIN Policy Recommendations were harmonised with the *Joint Policy Recommendations for the Transition to Circular Bioeconomy in EU Regions and Cities*. These joint recommendations were developed in collaboration with the BIOTRANSFORM, BIOMODEL4REGIONS, and SUSTRACK projects. The joint effort addressed EU- and national-level policy guidance on governance, financing, education, and data. Key insights from this collaborative work were integrated into ROBIN's final policy proposals to ensure alignment and increase transferability across the EU policy landscape.

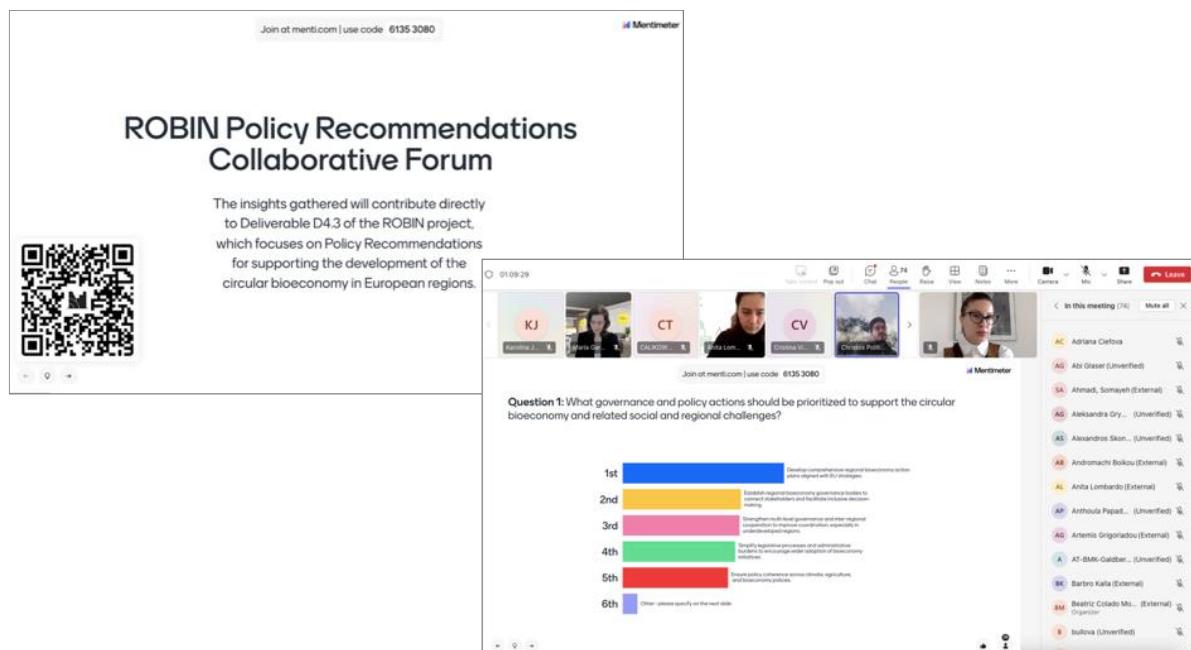


Figure 8: Screenshots from the 2nd Mutual Learning Workshop – Mentimeter session

Dissemination Strategy

The final version of this deliverable was:

- **Digitally packaged** in user-friendly format and **actively disseminated** through **Policy Briefs** (see **Annex I**) and **White Paper** (see **Annex II**) to stakeholders.
- **Leveraged via ROBIN's partner networks** and the **Advisory Board**, ensuring visibility across European governance and bioeconomy communities.

3.3 ROBIN Policy Recommendations

A set of 20 actionable Policy Recommendations is organized into seven strategic areas aimed at supporting the development of bioeconomy governance frameworks and enabling a just and sustainable transition, as depicted in *Figure 9*.



Figure 9: Set of 20 ROBIN Policy Recommendations

3.3.1 **Policy and Governance Models Frameworks**

Objective: Establish effective, coherent, and inclusive governance systems to foster circular bioeconomy initiatives.

This area focuses on the role of governance frameworks in facilitating circular bioeconomy initiatives. It provides recommendations for simplifying legislative processes, reducing administrative burdens, and harmonizing policies with EU directives. The proposed governance models emphasize flexibility, regional autonomy, and stakeholder inclusivity, enabling effective policy adoption and implementation.

Policy Recommendation 1: Develop Integrated Circular Bioeconomy Strategy

- Develop comprehensive regional bioeconomy action plans that are aligned with the existing EU strategies.
- Align these plans with the European Green Deal, Circular Economy Action Plan, and CAP.
- Check the [Knowledge and Support sections of CCRI-CSO](#) for support and useful resources.

Policy Recommendation 2: Promote Multi-Level Governance and Coordination

- Establish inter-regional cooperation frameworks to share knowledge and best practices.
- Create governance bodies that connect local, regional, and national authorities.
- Support regional coordination mechanisms and appoint transition brokers to connect actors and align strategies.

Policy Recommendation 3: Ensure Policy Coherence Across Sectors

- Align bioeconomy policies with climate, energy, and agricultural strategies.
- Reduce regulatory conflicts.
- Ensure that efforts to improve policy coherence build on clearly defined regional bioeconomy priorities and strategies.

3.3.2 *Stakeholder Engagement and Capacity Building*

Objective: Strengthen multi-sector collaboration and build skills to support innovation and governance.

This area outlines strategies to foster collaboration between public, private, academic, and societal stakeholders. It highlights the importance of inclusive governance and multi-stakeholder platforms for innovation and decision-making. The recommendations aim to enhance cooperation across sectors, creating an ecosystem conducive to circular bioeconomy development.

Policy Recommendation 4: Foster Regional Innovation Clusters

- Support innovation clusters and hubs focused on bioeconomy start-ups and SMEs.

Policy Recommendation 5: Strengthen Multi-Stakeholder Governance

- Set up regional bioeconomy councils with representatives from governments, businesses, academia, and civil society.
- Use participatory tools such as citizen forums and public consultations.

Policy Recommendation 6: Develop Skills and Competences

- Launch training programs and education courses focused on bioeconomy skills.
- Utilize EU funding instruments to support these programs.
- Establish regional training hubs and bioeconomy certification systems.

3.3.3 *Financing and Investment*

Objective: Strengthen financial mechanisms to support circular bioeconomy innovation, projects, and SMEs.

This area addresses the financial mechanisms needed to support circular bioeconomy initiatives. It provides recommendations for creating funding opportunities, incentivizing bio-based innovations, and supporting SMEs and start-ups. By emphasizing the economic benefits of the bioeconomy, this chapter encourages investment and job creation while promoting equitable growth.

Policy Recommendation 7: Provide Tax Incentives and Subsidies for Innovation

- Introduce VAT reductions and tax incentives and subsidies for sustainable bio-based innovations and products.
- Facilitate access to EU funding opportunities like Horizon Europe, CBE-JU, LIFE, and Interreg.
- Learn about suitable funding options for Circular Systemic Solutions, or their components, at different stages of development and with varying risk profiles on the CCRI-CSO website: [Funding and financing | Circular Cities and Regions Initiative](#).
- Read about Bioeconomy Financing in Europe – [ShapingBio Project Analysis](#).

Policy Recommendation 8: Support Public-Private Partnerships

- Facilitate collaborations between local authorities and private investors.
- Include investment de-risking tools and TRL-specific funding guidance.

Policy Recommendation 9: Use Green Public Procurement

- Apply EU criteria for sustainable purchasing.
- Require bio-based content in public contracts to stimulate demand.

3.3.4 *Research, Innovation, and Education*

Objective: Foster a culture of research, innovation, and education to accelerate bioeconomy transitions.

This area advocates for policies that support research and development, innovation, and capacity building. It includes recommendations for integrating circular bioeconomy concepts into educational curricula and public awareness campaigns. By fostering a culture of innovation and sustainability, this chapter aims to equip future generations with the skills and knowledge to advance the bioeconomy.

Policy Recommendation 10: Invest in Research and Development

- Support pilot and proof-of-concept demonstration projects that enable scaling of bio-based innovations.
- Prioritize funding for research on bio-based materials, waste valorisation, and circular design.

Policy Recommendation 11: Build a Data-Driven Monitoring System

- Set up regional observatories to track real-time bioeconomy progress.

- Use EU Bioeconomy Monitoring System data and other indicators for evaluation.

Policy Recommendation 12: Share Knowledge and Best Practices

- Create inter-regional platforms for sharing insights, data, and success stories.
- Organize knowledge-sharing events such as workshops and conferences.
- Participate in knowledge-sharing events such as those organized by CCRI or CCRI stakeholders.

3.3.5 Social Fairness and Environmental Impact

Objective: Ensure an inclusive and fair transition to the circular bioeconomy while addressing environmental challenges.

This area emphasizes the importance of ensuring a just transition in the move toward a circular bioeconomy. It provides recommendations for addressing socioeconomic disparities, promoting social fairness, and aligning initiatives with SDG targets. The chapter also highlights the need to balance environmental sustainability with economic and social objectives.

Policy Recommendation 13: Ensure Just Transition

- Address socioeconomic inequalities during bioeconomy transitions with targeted policy measures.

Policy Recommendation 14: Align with SDGs

- Integrate Sustainable Development Goals into regional and national bioeconomy policies.

Policy Recommendation 15: Promote Equitable Access to Resources

- Support vulnerable groups and communities in accessing bioeconomy opportunities.
- Ensure fair distribution of resources and opportunities in circular bioeconomy initiatives.

3.3.6 Awareness Raising

Objective: Improve public understanding and engagement in the bioeconomy transition through targeted communication strategies.

This area provides strategies for effectively communicating policy recommendations to key stakeholders, including policymakers, regional authorities, and the public. It includes plans for policy briefs, white papers, and stakeholder engagement activities to ensure widespread adoption and support.

Policy Recommendation 16: Implement Effective Bioeconomy Dissemination Activities

- Create policy briefs, white papers, and communication campaigns targeting decision-makers and the public.

Policy Recommendation 17: Raise Awareness in Education Systems

- Integrate bioeconomy-related topics into school and higher education curricula.
- Foster outreach campaigns targeting different educational levels and the public.

3.3.7 *Data-Driven Monitoring and Evaluation*

Objective: Strengthen transparency, accountability, and evidence-based decision-making through better monitoring and evaluation.

This area offers guidance on implementing robust monitoring frameworks to assess the impact of bioeconomy policies. It includes recommendations for leveraging data-driven insights to inform policy adjustments and ensure continuous improvement. By fostering transparency and accountability, this chapter supports evidence-based decision-making.

Policy Recommendation 18: Establish Robust Monitoring Frameworks

- Develop real-time data tracking systems to evaluate the progress of bioeconomy strategies.
- Use the CCRI self-assessment tool to select indicators and track implementation progress

Policy Recommendation 19: Adopt Data-Driven Decision-Making

- Use data from regional and EU bioeconomy monitoring systems to inform policy adjustments and planning.

Policy Recommendation 20: Strengthen Evaluation Mechanisms

- Implement periodic reviews of governance models to assess their effectiveness and identify necessary adjustments.

3.4 Alignment with Joint Policy Recommendations

In addition to the ROBIN project's dedicated Policy Recommendations, the ROBIN partners contributed to the development of Joint Policy Recommendations led by the BIOTRANSFORM project, in close collaboration with other EU-funded initiatives: ROBIN, SUSTRACK, and BIOMODEL4REGIONS. These joint recommendations aim to promote strategic alignment across projects focused on advancing sustainable and circular bioeconomy transitions at regional and systemic levels.

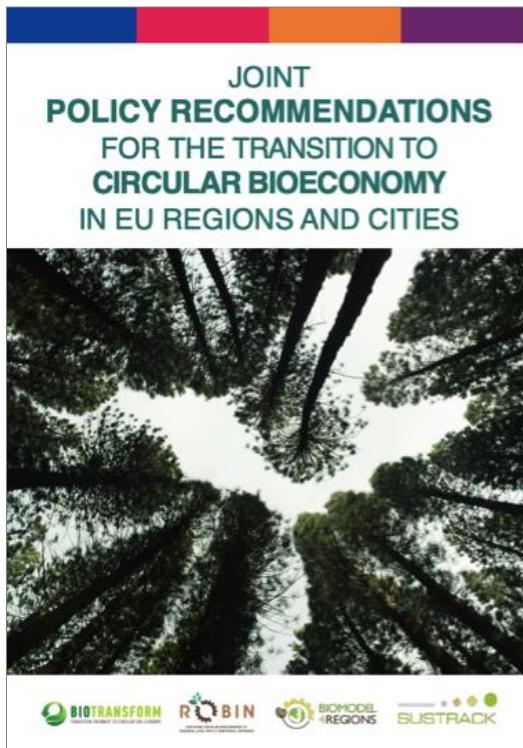
The ROBIN results significantly informed sections of the Joint Policy Recommendations focused on:

- **Empowering regional governance**, particularly through inclusive, multi-actor, and adaptive governance approaches;
- **Developing coherent regional action plans**, integrating social, environmental, and economic priorities;
- **Supporting capacity-building and awareness-raising**, ensuring that regional actors are equipped with the tools and skills needed for implementation;
- **Fostering systemic and cross-sectoral coordination**, supported by monitoring frameworks and digital tools such as the ROBIN Toolbox.

These cross-project recommendations reflect not only shared challenges but also a collective vision for a sustainable, inclusive, and circular bioeconomy. By participating in this initiative, ROBIN

ensures that its outputs contribute to a broader community of practice and policy influence at EU level.

A visual extract from the Joint Policy Recommendations is provided in *Figure 10*. The full document is accessible via the following link: [Joint Policy Recommendations](#).



INTRODUCTION

The report formulates general policy recommendations targeting the European Union (EU) and national levels, to streamline the uptake of circular bioeconomy in European regions.

The objective of these joint policy recommendations is to accelerate the transition of EU regions from linear to circular bioeconomy (CBE). The following joint policy recommendations were mainly based on the research of the BIOTRANSFORM project, with the collaboration of other EU projects - SUSTRACK, ROBIN and BIOMODEL4REGIONS.

The recommendations are based on the challenges and opportunities found in the studies conducted in the projects' pilot areas. The target audience is defined as decision-makers at EU level and national policy makers, and focus on regulation, economic instruments, and technical support.

The recommendations are divided into four main areas and are the following:

Data for Decisions

- Enable postal code-based resource flow tracking;
- Develop EU-wide standardised guidelines for collection and analysis of data on secondary streams;
- Establish publicly available regional databases for feedstock availability and utilisation;
- Support regional resource mapping initiatives;
- Support regions in the definition of sets of indicators to monitor the progress of regional strategies

Financing and Business Opportunities

- Introduce market incentives to promote bio-based products;
- Strengthen public procurement for secondary bio-based products, guided by EU recommendations for bio-based products;
- Create and/or ease access to dedicated financial mechanisms for scaling bioeconomy projects

Governance

- Support the creation of regional coordination mechanisms;
- Build regional knowledge and awareness;
- Support the creation of transition broker role at regional level

Knowledge Sharing and Education

- Establish regional bioeconomy training hubs;
- Develop EU-funded bioeconomy education programmes;
- Integrate bioeconomy into existing curricula;
- Create a bioeconomy skills certification system

These recommendations are to be implemented at either the national or EU level, as denoted by the following pictograms:

National

EU

Joint Policy Recommendations for the Transition to Circular Bioeconomy in EU Regions and Cities

2

Figure 10: Joint Policy Recommendations of BIOTRANSFORM, ROBIN, BIOMODEL4REGIONS and SUSTRACK.

4. Conclusion

The concluding chapter synthesizes the key findings of Deliverable 4.3 "Replication Guide, Toolkit and Policy Recommendations", highlighting the culmination of the ROBIN project's efforts to support European regions in replicating and scaling circular bioeconomy governance models. This deliverable brings together practical guidance, methodological tools, and strategic policy input to foster sustainable, resilient, and inclusive bioeconomy systems at the regional level.

Summary of Findings

Deliverable 4.3 presents three core outputs: the Replication Guide, the Toolkit, and a set of Policy Recommendations. These components serve as a comprehensive resource for regional authorities, policymakers, and stakeholders, supporting the design, adaptation, and implementation of circular bioeconomy governance models. Key governance and policy priorities include the formulation of regional bioeconomy action plans aligned with EU-level strategies, the creation of effective regional bioeconomy governance structures, the enhancement of multi-level governance, and the promotion of inter-regional cooperation. The deliverable also emphasizes the critical role of data in evidence-based policymaking.

Interpretation of Results

The findings demonstrate that structured guidance and adaptable tools can significantly enhance regional capacities for initiating and institutionalizing circular bioeconomy strategies. The Replication Guide and Toolkit offer step-by-step support and actionable templates, while the Policy Recommendations provide insights for effective stakeholder engagement, governance enhancement, and systemic coordination. Collectively, these tools respond to real implementation needs observed in diverse regional contexts across Europe.

Implications

The deliverable has strong practical relevance for ongoing and future bioeconomy initiatives. By translating theoretical governance models into accessible, hands-on resources, Deliverable 4.3 contributes to capacity-building and policy coherence at regional and inter-regional levels. It encourages a participatory and evidence-driven approach to governance, thus supporting the EU's broader ambitions for a green and just transition.

Limitations

While the deliverable provides a robust foundation, its application in practice will depend on several external variables, including political will, institutional capacity, stakeholder buy-in, and availability of financial and human resources. Additionally, the generalizability of the recommendations may vary across different regional governance landscapes and socio-economic conditions.

Final Thoughts

Deliverable 4.3 bridges the gap between EU policy ambition and local implementation. It offers a tested and adaptable methodology to help regions navigate the complexities of the circular

bioeconomy, reinforcing the value of collaboration, continuous learning, and responsiveness to local needs.

Future Directions

Moving forward, further support should be directed toward capacity-building, peer-learning platforms, and dynamic monitoring mechanisms to track implementation progress. Tailored pilot actions, targeted funding schemes, and more robust inter-regional exchange can also accelerate uptake and ensure the replicability and scalability of bioeconomy governance innovations across the EU.

Annexes

The Annexes provide complementary materials that enrich and support the main content of the deliverable. They include key outputs developed during the ROBIN project, such as policy-oriented publications and workshop results, offering additional context, insights, and validation evidence.

Included annexes:

- **ROBIN Policy Briefs**
- **ROBIN White Paper**
- **10-topic shortlist on trending policy priorities** (output of project synergies)
- **Real-time Mentimeter feedback from the 2nd Mutual Learning Workshop**

Annex I: ROBIN Policy Briefs

Below is a visual overview of the ROBIN Policy Briefs developed based on this deliverable. Digital version with links is available at the [ROBIN project website](#).



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AUTHORS (Organisation)	Adriana Čiefová, Kristína Kolárová, Radoslav Považan, Robert Miškuf (PEDAL Consulting)
REVIEWERS	All Partners
GRAPHICAL PREPARATION	Ioanna Nydrioti, Artemis Grigoriadou (White Research)
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KEY SECTIONS

- Policy Brief #1:** Replication Guide consisting of Steps for Replicating Circular Bioeconomy Governance
- Policy Brief #2:** The ROBIN Toolkit – Digital Tools for Regional Transformation
- Policy Brief #3:** Policy Recommendations for Circular Bioeconomy Governance in Europe
- Policy Brief #4:** From Evidence to Action – Key Policy Options from ROBIN Pilots

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Accelerating Circular Bioeconomy Transformation in European Regions

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1. Introduction: Regional Solutions for a Circular Bioeconomy Transformation

1.1 Why Regional Action in the Circular Bioeconomy is Crucial

The circular bioeconomy is not just about technological innovation – it is about creating inclusive, sustainable, and regionally grounded solutions. As key drivers of territorial development, regions play a pivotal role in leading this transformation.

The ROBIN project (Horizon Europe, 2022 – 2025) supports European regions in developing and replicating inclusive, place-based governance models for the circular bioeconomy. Drawing on real-world testing across five pilot regions (Andalusia in Spain, Baden-Württemberg in Germany, Central Macedonia in Greece, Southern Region in Ireland, and Žilina Region in Slovakia), ROBIN delivers tested replications methodologies, practical digital tools, and evidence-based Policy Recommendations tailored to regional contexts.

This collection of four Policy Briefs summarizes the key outputs of ROBIN's Deliverable 4.3 titled “Replication Guide, Toolkit, and Policy Recommendations”. Built on the principles of co-creation, participatory governance, and mutual learning, they provide a comprehensive roadmap to accelerate systemic, just, and place-based circular bioeconomy development across Europe – while aligning with the EU Bioeconomy Strategy, European Green Deal, and Sustainable Development Goals.

Key Messages at a Glance:

- ♦ **Policy Brief No 1: Step-by-step Replication Guide to help regional authorities design and implement circular bioeconomy governance – from initiation to evaluation.**
- ♦ **Policy Brief No 2: Practical ROBIN Toolkit containing interactive tools of ROBIN Toolbox readily available online, as well as training modules, informative materials, glossary and FAQs, case studies of successful implementations, and lessons learned from challenges encountered.**
- ♦ **Policy Brief No 3: 20 targeted Policy Recommendations tailored to the needs of European regions, addressing governance models, financing methods, awareness strategies, and more.**
- ♦ **Policy Brief No 4: From Evidence to Action – Policy Options from ROBIN Pilots which translate ROBIN's Evidence into Policy Guidance.**

2. Policy Brief No. 1: ROBIN Replication Guide for Replicating Circular Bioeconomy Governance

2.1 ROBIN Replication Guide

This *Guide* presents a structured five-step framework: **Initiate, Assess, Envision & Plan, Implement, and Evaluate**. Each phase is supported by practical tools, templates, and documents for further reading. The approach is adaptable to diverse territorial realities and is designed to foster inclusive, sustainable, and place-based circular bioeconomy governance.



1. First Replication Step: INITIATE – Build Multi-Actor Regional Constellations

Start by establishing **Multi-Actor Regional Constellations** – cross-sectoral governance platforms that bring together key regional stakeholders. Use the *Typology Matrix* to assess governance readiness and the *Stakeholder Mapping Framework* to identify relevant actors and power dynamics. Convene inclusive dialogues, define shared objectives, and build trust through transparent, participatory processes. Tested in ROBIN pilot regions, *Multi-Actor Regional Constellations* fostered local ownership, legitimacy, and long-term collaboration.

[ROBIN Toolbox – Typology Matrix](#)

2. Second Replication Step: ASSESS – Understand Governance Landscape and Analyse Governance Models

Analyse your region's governance and policy landscape to identify strengths and gaps. Use the *ROBIN Knowledge Platform* to explore governance models, benchmark against good practices, and position your region within ROBIN's typology. Draw inspiration from regional case studies to adapt successful approaches to your local context.

[ROBIN Toolbox – Knowledge Platform](#)

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3. Third Replication Step: ENVISION & PLAN – Co-Create Governance Models

Translate shared visions into actionable plans by co-designing governance models with regional stakeholders. Use the ROBIN Governance Model Canvas to guide participatory design, develop implementation roadmaps, and formalise partnerships through trust-based agreements. This step anchors circular bioeconomy strategies in long-term institutional frameworks.

[ROBIN Toolbox – Canvas](#)

4. Fourth Replication Step: IMPLEMENT – Use the ROBIN Toolbox

Put your plans into action using the ROBIN Toolbox, a set of practical, online tools designed to support governance implementation. Apply the Policy Monitoring System to evaluate environmental, social and governance, and responsible research and innovation dimensions; use the Environmental Protection Planning Tool to identify unsustainable practices; and consult the Support Actions Portfolio for capacity-building measures. Leverage the Circular Bioeconomy Governance Model Canvas to design or update your region's governance model by outlining its value proposition, beneficiaries, activities, partnerships, infrastructure, resources, cost structure, and sustainability-related costs and benefits. Each tool includes user guidance and has been tested in real regional settings.

[ROBIN Toolbox](#)

5. Fifth Replication Step: EVALUATE – Monitor, Learn and Engage with the CCRI-CSO

Close the loop by assessing the impact of your governance model through monitoring and assessing your circular bioeconomy policies using ROBIN tools like the Policy Monitoring System and Environmental Protection Planning Tool. Use ROBIN's evaluation framework to track progress and impact. At the same time, engage with the CCRI-CSO, the EU's circular economy support body: register as a stakeholder, share events and publications, join working groups, and subscribe to their newsletter. Formalise collaboration to strengthen ties and align with EU-wide circular economy initiatives.

[Circular Cities and Regions Initiative](#)

ROBIN Policy Briefs – Accelerating Circular Bioeconomy Governance in European Regions



Figure 1. A five-step framework

Key Takeaways:

- Replication is not about copying – it is about adapting proven strategies to local realities.
- Strong stakeholder constellations and shared ownership are critical for sustainability.
- Evaluation is essential – embed monitoring from the start.

3. Policy Brief No. 2: ROBIN Toolkit – Resources for Regional Transformation

3.1 ROBIN Toolkit – Resources for Your Regional Strategy

Interactive modules designed for planning, evaluation, and stakeholder engagement, accessible via the ROBIN online platform.

The ROBIN Toolkit is a practical and accessible “umbrella” resource developed to support regional actors in implementing circular bioeconomy governance strategies. It enables the replication of innovative governance models across diverse European contexts and contributes to a broader transition toward sustainable, place-based bioeconomy systems.

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The Toolkit brings together a wide range of supportive elements: interactive decision-support tools, training materials, policy templates, data repositories, and documentation. It also includes a glossary of essential terms, a Frequently Asked Questions (FAQ) section, and curated learning materials to ensure that the content remains accessible and applicable for a broad audience of policymakers, practitioners, and local stakeholders.



A key distinction must be made between the Toolkit and the Toolbox:



Figure 2. Toolkit VS Toolbox

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ROBIN Toolbox

1. POLICY MONITORING SYSTEM TOOL

Evaluates circular bioeconomy governance using ESG (Environmental, Socioeconomic, Governance) and RRI (Responsible Research & Innovation) indicators.

- ◆ [Policy Monitoring System Tool](#)

2. ENVIRONMENTAL PROTECTION PLANNING TOOL

Identifies unsustainable practices and designs strategies for restoring local ecosystems.

- ◆ [Environmental Protection Planning Tool](#)

3. CIRCULAR BIOECONOMY GOVERNANCE MODEL CANVAS

Helps co-design inclusive, place-based governance models by mapping partnerships, resources, actions, and strategic goals.

- ◆ [Circular Bioeconomy Governance Model Canvas](#)

4. SUPPORT ACTIONS PORTFOLIO

Provides examples of support actions for regional capacity building, including searchable measures by type (Regional Analysis, Social, Technical) to strengthen stakeholder awareness and engagement.

- ◆ [Support Actions Portfolio](#)

5. KNOWLEDGE PLATFORM – REGIONAL GOVERNANCE MODELS

Showcases diverse circular bioeconomy governance models tailored to regional contexts across the EU, accounting for governance mechanisms, territorial conditions, and sustainability goals.

- ◆ [Knowledge Platform – Regional Governance Models](#)

6. KNOWLEDGE PLATFORM – GOOD PRACTICES

Compiles governance practices from EU regions, featuring policy and social measures classified by regional characteristics and observed impacts.

◆ [Knowledge Platform – Good Practices](#)

7. KNOWLEDGE PLATFORM – TYPOLOGY MATRIX

Categorises governance models and evaluates their effectiveness based on transparent and clearly defined assessment criteria.

◆ [Knowledge Platform – Typology Matrix](#)

Other Components of Toolkit:

Glossary of Key Terms: Definitions of core bioeconomy and governance concepts used in ROBIN.
→ [\[Glossary section of the Toolbox on the website\]](#)

Frequently Asked Questions (FAQs): Quick answers to practical questions about applying ROBIN tools.
→ [\[FAQ section of the Toolbox on the website\]](#)

Informative Materials and Useful Tips: Collection of materials (practical guides from ROBIN, and resources from other initiatives) along with tips to support stakeholders in effectively applying key concepts.
→ [\[Deliverable 3.2 link on the website\]](#) and [\[Deliverable 4.3 link on the website\]](#)

Case Studies (Success Stories and Lessons Learnt): 20+ case studies from the ROBIN regions and beyond, highlighting success factors, challenges, and lessons learned to guide future implementations.
→ [\[Deliverable 4.3 link on the website\]](#)

Key Takeaways:

- The **Toolkit** helps regions plan, implement, and evaluate strategies with confidence.
- Tools are adaptable, digital, and free to access.
- It supports both beginners and advanced users.

◆ Explore additional interactive tools and training modules in the full ROBIN Toolbox at
<https://robintoolbox.web.auth.gr>

4. Policy Brief No. 3: ROBIN Policy Recommendations for Circular Bioeconomy Governance in Europe

4.1 ROBIN Policy Recommendations – Priority Actions for Regions

The ROBIN Policy Recommendations provide practical guidance for European regions and Member States in the design, implementation, and management of circular bioeconomy governance models. They are grounded in the empirical findings of the ROBIN project, enriched by extensive synergy activities with related EU-funded initiatives, and aligned with the overarching objectives of the EU Bioeconomy Strategy. The Recommendations deliver actionable policy insights aimed at accelerating the bioeconomy transition, while simultaneously promoting regional development, environmental sustainability, and economic competitiveness.



In total 20 recommendations are organised into 7 strategic areas, each designed to support regional and local governance efforts and promote a just, inclusive, and sustainable bioeconomy transition. These areas include:

I. Strategic Area: Policy and Governance Models Frameworks

Recommendations for creating cohesive, multi-level governance structures that ensure policy alignment and foster cross-regional cooperation.

◆ [Policy Recommendation 1: Develop Integrated Circular Bioeconomy Strategy](#)

ROBIN Policy Briefs – Accelerating Circular Bioeconomy Governance in European Regions

- ◆ *Policy Recommendation 2: Promote Multi-Level Governance and Coordination*
- ◆ *Policy Recommendation 3: Ensure Policy Coherence Across Sectors*

II. Strategic Area: Stakeholder Engagement and Capacity Building

Guidance on creating multi-stakeholder governance bodies, enhancing community participation, and fostering partnerships between public, private, and research sectors.

- ◆ *Policy Recommendation 4: Foster Regional Innovation Clusters*
- ◆ *Policy Recommendation 5: Strengthen Multi-Stakeholder Governance*
- ◆ *Policy Recommendation 6: Develop Skills and Competences*

III. Strategic Area: Financing and Investment

Strategies for establishing bioeconomy-focused investment funds, promoting public-private partnerships, and leveraging EU funding mechanisms.

- ◆ *Policy Recommendation 7: Provide Tax Incentives and Subsidies for Innovation*
- ◆ *Policy Recommendation 8: Support Public-Private Partnerships*
- ◆ *Policy Recommendation 9: Use Green Public Procurement*

IV. Strategic Area: Research, Innovation, and Education

Proposals for expanding bioeconomy research, supporting innovation hubs, and integrating sustainability concepts into educational programs.

- ◆ *Policy Recommendation 10: Invest in Research and Development*
- ◆ *Policy Recommendation 11: Build a Data-Driven Monitoring System*
- ◆ *Policy Recommendation 12: Share Knowledge and Best Practices*

V. Strategic Area: Social Fairness and Environmental Impact

Measures to ensure a socially equitable bioeconomy transition while addressing environmental sustainability and minimizing ecological footprints.

- ◆ *Policy Recommendation 13: Ensure Just Transition*
- ◆ *Policy Recommendation 14: Align with SDGs*
- ◆ *Policy Recommendation 15: Promote Equitable Access to Resources*

VI. Strategic Area: Awareness Raising

Communication strategies aimed at enhancing public understanding, promoting stakeholder engagement, and building support for bioeconomy initiatives.

- ◆ *Policy Recommendation 16: Implement Effective Bioeconomy Dissemination Activities*

ROBIN Policy Briefs – Accelerating Circular Bioeconomy Governance in European Regions

- ◆ *Policy Recommendation 17: Raise Awareness in Education Systems*

VII. Strategic Area: Data-Driven Monitoring and Evaluation

Frameworks for developing real-time monitoring systems, using performance metrics, and fostering evidence-based policy adjustments.

- ◆ *Policy Recommendation 18: Establish Robust Monitoring Frameworks*
- ◆ *Policy Recommendation 19: Adopt Data-Driven Decision-Making*
- ◆ *Policy Recommendation 20: Strengthen Evaluation Mechanisms*

Key Takeaways:

- Tailor policies to regional realities but anchor them in EU priorities.
- Combine governance reforms with public awareness and inclusive financing.

- ◆ Visit D4.3 to explore all 20 Policy Recommendations in full context.

5. Policy Brief No. 4: From Evidence to Action – Policy Options from ROBIN Pilots

5.1 Translating ROBIN's Evidence into Policy Guidance

Findings from ROBIN's pilot regions and validation activities highlight key gaps and opportunities in implementing circular bioeconomy strategies at the regional level. This section summarizes those insights into concrete policy options and practical recommendations for regional, national, and EU decision-makers.

The following insights are based on ROBIN's pilot testing in five European regions and reflect validated learning across diverse territorial contexts.



Table 1. Key challenges, options, and ROBIN's Recommendations

Key Challenges Identified	Policy Options	ROBIN Recommendations
Fragmented governance limits strategic bioeconomy planning.	Establish multi-actor governance structures.	Institutionalise Multi-Actor Regional Constellations to foster coordination and co-creation.
Policy incoherence across sectors obstructs integration.	Create dedicated coordination roles.	Appoint regional transition brokers to align strategies across departments and policy levels.
SMEs face barriers in accessing circular bioeconomy funding.	Introduce decentralised investment mechanisms.	Develop regional bioeconomy investment funds and funding.

Public knowledge of bioeconomy is limited.	Raise awareness through education and media.	Integrate bioeconomy in school curricula and run targeted outreach campaigns.
Rural areas are underserved in transition plans.	Prioritise territorial inclusion.	Apply Just Transition policies and targeted support for structurally weak regions.
Implementation tools are often missing or underused.	Offer practical, user-friendly tools and resources.	Promote the use of ROBIN's Policy Monitoring System, Environmental Protection and Planning Tool, and Circular Bioeconomy Governance Model Canvas as go-to instruments.

Key Takeaways:

- **Tailor policies** to regional realities but anchor them in EU priorities.
- **Combine governance reforms with public awareness and inclusive financing.**

6. Conclusion

The ROBIN project delivers both evidence and actionable tools to support regional transformation. These policy options offer adaptable, ready-to-use solutions that can accelerate a just, inclusive, and sustainable transformation across Europe.

7. Next Steps: From Briefs to Action

The ROBIN Policy Briefs are designed not only to inform but to empower regional actors to take practical, evidence-based steps toward circular bioeconomy transformation.

Whether you are a policymaker, regional authority, project manager, or practitioner, these briefs provide tools, guidance, and tested models to support you along the way. ROBIN's integrated methodology – spanning replication guidelines, a digital toolkit, and policy recommendations – can be readily adapted to diverse territorial contexts.

How to Engage Further

- Use the ROBIN Replication Guide to structure your regional circular bioeconomy initiative.
- Explore the ROBIN Toolkit and Toolbox to access practical instruments, case studies, and planning support.
- Adopt and adapt the Policy Recommendations to suit your regional governance and development frameworks.
- Share your experience with the ROBIN project by connecting with other regions. Help us spread knowledge and good practices to accelerate the circular bioeconomy transition across Europe.

The circular bioeconomy transition starts with regional leadership – and continues through collaboration, innovation, and learning. ROBIN invites all regions to take part in shaping a more just, inclusive, and sustainable Europe



About the project

Europe's regional authorities have a crucial role to play as agents of inclusive and resilient economic development for their territories. ROBIN sets out to empower them to fulfil this role with support to co-shape their governance structures in to accelerate the deployment of their circular bioeconomy targets, while also promoting social innovation. We demonstrate the potential of innovative circular bioeconomy governance structures and models in 5 regions within Ireland, Germany, Spain, Slovakia and Greece. We set-up Multi-Actor Regional Constellations engaging key stakeholders to co-create novel governance structures, well-embedded within existing structures of our regions and mandated to execute circular bioeconomy strategies and to coordinate effectively with the Circular Cities and Regions Initiative – Coordination and Support Office (CCRI-CSO). We also provide them with tailored support for enhanced stakeholder engagement, as well as a practical toolbox to improve the operation and monitoring of their models. In the process we coordinate our actions with the CCRI-CSO.

Partners	URL
Q-PLAN INTERNATIONAL ADVISORS PC	www.qplan-intl.gr
FUNDACION CORPORACION TECNOLOGICA SE ANDALUCIA	www.corporaciontecnologica.com
WHITE RESEARCH SRL	www.white-research.eu
PEDAL CONSULTING SRO	www.pedal-consulting.eu
STEINBEIS 21 GMBH	www.steinbeis-europa.de
ROZVOJOVA AGENTURA ZILINSKEHO SAMOSPRAVNEHO KRAJA NO	www.razsk.sk
MUNSTER TECHNOLOGICAL UNIVERSITY	www.circbio.ie
ARISTOTELEIO PANEPISTIMIO THESSALONIKIS	www.auth.gr
REGION OF CENTRAL MACEDONIA	www.pkm.gov.gr
CONSEJERIA DE AGRICULTURA, PESCA, AGUA Y DESARROLLO RURAL	www.juntadeandalucia.es
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SOUTHERN REGIONAL ASSEMBLY	www.southernassembly.ie

CONTACT US: info@robin-project.eu

VISIT: www.robin-project.eu

Annex II: ROBIN White Paper

Below is a visual overview of the ROBIN White Paper. Digital version with links is available at the [ROBIN project website](#).



ROBIN White Paper: Overcoming Regional Challenges and Barriers to Circular Bioeconomy Development

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REVIEWERS	All Partners
GRAPHICAL PREPARATION	Ioanna Nydrioti, Artemis Grigoriadou (White Research)
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ROBIN White Paper: Overcoming Regional Challenges and Barriers to Circular Bioeconomy Development

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Executive Summary

Purpose and Scope

This White Paper summarises the main obstacles hindering circular bioeconomy development in European regions and presents concise, actionable solutions. Based on Deliverable 4.3 of the ROBIN project titled "ROBIN Replication Guide, Toolkit and Policy Recommendations", it addresses major limitations to implementing circular bioeconomy strategies such as governance fragmentation, stakeholder engagement gaps, financing shortfalls, or limited data monitoring. Each solution is directly linked to ROBIN Deliverables, tools of ROBIN Toolbox, and the project website for instant access. The aim is to equip regional policymakers and stakeholders with a clear, high-level roadmap to identify key challenges and immediately leverage ROBIN's resources to support a resilient, inclusive circular bioeconomy.

The insights provided in this White Paper are not only analytical but also grounded in the lived realities of ROBIN pilot regions. Drawing from hands-on experience and practical testing, the proposed solutions are field-tested and adaptable across diverse governance contexts. By linking high-level strategies with implementable tools, this document bridges the gap between policy vision and regional execution – enabling stakeholders to move from problem identification to immediate action.

Key Findings

The ROBIN White Paper highlights six primary barriers to developing a circular bioeconomy across European regions and offers practical, ready-to-use solutions:

- ◆ **Governance Fragmentation:** Disconnected regional, national, and EU-level policies hinder coherent strategy.
 - **Solution:** Establish multi-level governance frameworks that align local action plans with EU directives.
- ◆ **Insufficient Stakeholder Engagement:** SMEs, academia, and civil society often lack structured platforms for co-creation.
 - **Solution:** Form Multi-Actor Regional Constellations (MARCs) to ensure inclusive participation.
- ◆ **Limited Financing Options:** Short-term, fragmented funding prevents pilot initiatives from scaling up.
 - **Solution:** Create dedicated regional bioeconomy investment funds and leverage green public procurement.
- ◆ **Low Public Awareness:** Scepticism and limited understanding hinder the adoption of circular practices, as the bioeconomy is often perceived as abstract and disconnected from daily life.
 - **Solution:** Launch targeted awareness campaigns that translate bioeconomy concepts into concrete, relatable examples from everyday life (e.g., sustainable food, waste reduction, eco-

friendly products). Additionally, integrate bioeconomy topics into school curricula and vocational training to build long-term understanding and engagement.

- ◆ **Inadequate Data-Driven Monitoring:** Policymakers lack real-time insights to adjust interventions.
 - **Solution:** Deploy the ROBIN Policy Monitoring System (PMS) and Environmental Protection Planning (EPP) tools of the ROBIN Toolbox.
- ◆ **Social Fairness Concerns:** Unequal benefit distribution risks leaving vulnerable communities behind.
 - **Solution:** Adopt Just Transition policies and strengthen environmental impact assessments.

Each solution is linked to specific ROBIN Deliverables, Toolbox modules, and the ROBIN website for quick reference.



1. Introduction

Transitioning to a circular bioeconomy across European regions is critical for achieving climate neutrality, driving job creation, and fostering sustainable rural development. Although the European Green Deal and the Circular Economy Action Plan provide strong policy incentives, the journey remains hindered by fragmented governance, insufficient stakeholder engagement, and limited access to financing. In this White Paper, we highlight the most prominent challenges and barriers identified in Deliverable 4.3 of the ROBIN project and propose concise, actionable solutions linked directly to specific ROBIN outputs and online resources. By concentrating on areas that demand urgent attention – such as establishing multi-level governance frameworks, fostering multi-actor engagement, designing effective financing instruments, raising public awareness, implementing data-driven monitoring systems, and ensuring social fairness – this White Paper offers a clear roadmap for regional authorities and other stakeholders.

ROBIN White Paper: Overcoming Regional Challenges and Barriers to Circular Bioeconomy Development

Importantly, the White Paper builds on the findings of cross-regional exchanges, thematic workshops, and policy validation activities conducted as part of the ROBIN project. This approach ensures that the barriers described here are not only theoretically relevant but also empirically grounded in the experiences of real stakeholders. In particular, the contributions of regional actors – from policymakers to community groups – have shaped the design of each proposed solution, making the recommendations highly applicable to diverse socio-political environments.

The intended audience includes regional policymakers, municipal planners, civil society organizations, business leaders, and educators. By providing clear links between barriers, solutions, and ROBIN tools, the White Paper helps these actors prioritize action areas and mobilize the right instruments. It also supports knowledge transfer and peer learning by offering examples and lessons that can be replicated or adapted elsewhere. As such, this document complements the more detailed Replication Guide (in D4.3) by acting as a compact decision-making compass for strategic planning and immediate uptake.

Based on the Replication Guide, Toolkit and Policy Recommendations in D4.3, the methodology behind this White Paper entailed a systematic review of D4.3 for policy barriers and recommended measures, an examination of the "Limitations" section to capture persistent obstacles, and a mapping of ROBIN Toolbox modules to identify practical implementation tools. The result is a synthesis of policy analysis, case studies, and gap assessments designed to address systematic causes rather than symptoms.

This document also aims to equip regional stakeholders with a prioritized action agenda, encouraging the adoption of tested frameworks that promote resilience, inclusivity, and environmental stewardship within the emerging circular bioeconomy.

How This White Paper Was Created

This **White Paper** was developed using a mixed-method approach grounded in Deliverable D4.3 of the ROBIN project. The methodology included:

- A systematic content analysis of the Replication Guide, Toolkit and Policy Recommendations;
- Insights from regional stakeholder feedback during ROBIN validation and support actions;
- A mapping of ROBIN Toolbox tools to identified barriers;
- Insights from synergy activities with other projects.

The barriers and solutions presented reflect both empirical insights and expert validation, ensuring relevance across diverse European contexts.

2. Vision Statement: Toward a Resilient and Regenerative Bioeconomy

ROBIN White Paper: Overcoming Regional Challenges and Barriers to Circular Bioeconomy Development

The European bioeconomy of the future is circular, inclusive, and regenerative. It revitalises rural areas through smart use of regional biomass, supports local value chains, and reduces dependency on fossil resources. It is governed through participatory models that bridge policy levels, sectors, and communities. Innovation is not confined to laboratories or capitals but rooted in regions where bio-based solutions emerge from real needs and circular thinking is embedded across education, business, and public procurement.

By 2030, the aim is for circular bioeconomy strategies to be embedded in mainstream policymaking at regional levels, supported by long-term financing, multi-stakeholder cooperation, and citizen engagement. ROBIN envisions a future where every region has the capacity and tools to develop a resilient, low-carbon bioeconomy that strengthens social cohesion and delivers measurable environmental benefits.

Why the Circular Bioeconomy Requires Systems Thinking

The **six key challenges** outlined in this **White Paper** are deeply interlinked. Governance fragmentation makes stakeholder engagement harder and complicates access to financing. A lack of public awareness reduces support for green procurement and innovation, while inadequate monitoring hampers transparency and limits trust. Social fairness is not a stand-alone goal but depends on how governance, funding, and data systems include or exclude vulnerable groups.

Addressing these challenges in isolation is unlikely to yield lasting results. Instead, the **circular bioeconomy demands a systems approach**, where **coordinated solutions across sectors and policy levels are prioritized**. ROBIN's tools, such as MARCs and the Policy Monitoring System, are designed with this interconnectedness in mind.

3. Key Challenges and Proposed Solutions

Governance Fragmentation and Policy Coherence

Barrier #1: A key barrier lies in the absence of integrated, multi-level governance frameworks. Many regional bioeconomy strategies are developed in silos, often without alignment with broader national strategies or overarching EU directives like the European Green Deal or CAP. This leads to policy misalignment, regulatory overlap, and inefficient use of resources. In some regions, unclear mandates and institutional fragmentation further obstruct long-term strategic planning. Without coherent governance linkages, local initiatives risk remaining small-scale and disconnected from systemic impact.

- **Solution 1.1:** Develop integrated regional bioeconomy action plans that align with the European Green Deal, Circular Economy Action Plan, and Common Agricultural Policy (CAP) (see ROBIN Policy Recommendation 1 in D4.3).
 - **Link:** Deliverable D4.3 (Replication Guide, Toolkit and Policy Recommendations), Deliverable D1.1 (Typology of Governance Models).

ROBIN White Paper: Overcoming Regional Challenges and Barriers to Circular Bioeconomy Development

- ◆ **Solution 1.2:** Establish inter-regional cooperation bodies or MARCs to foster horizontal and vertical policy coordination (see MARC setup in Replication Guide § 2.4.1).
 - **Link:** ROBIN Toolbox – Typology Matrix (<https://robintoolbox.web.auth.gr/index.php/typology-matrix/>) ;
 - ROBIN Knowledge Platform – Governance Models (<https://robintoolbox.web.auth.gr/index.php/governance-models/>).

Limited Stakeholder Engagement and Capacity Building

Barrier #2: Robust stakeholder engagement is essential for inclusive and effective circular bioeconomy transitions. However, in many regions, SMEs, academic institutions, civil society groups, and citizens are not adequately represented in policymaking or implementation processes. The lack of structured engagement platforms leads to low legitimacy of decisions, reduced public trust, and missed opportunities for local innovation. Moreover, even when engagement occurs, there are often capacity gaps – particularly among smaller stakeholders – which limit their ability to contribute meaningfully to co-creation and governance.

- ◆ **Solution 2.1:** Convene MARCs to ensure broad stakeholder representation and support collaborative governance.
 - **Link:** Deliverable D2.1 (Regional Governance Models, esp. Stakeholder Mapping & Engagement Framework in D2.1).
- ◆ **Solution 2.2:** Launch targeted capacity-building initiatives – trainings, workshops, and innovation clusters for SMEs and local entrepreneurs (see Policy Recommendation 6 in D4.3).
 - **Link:** ROBIN Toolbox – Support Actions Portfolio (<https://robintoolbox.web.auth.gr/index.php/support-actions/>).

Inadequate Financing Mechanisms

Barrier #3: A persistent barrier across many regions is the lack of tailored, long-term financing mechanisms to support circular bioeconomy initiatives. Existing funding streams tend to be fragmented, short-term, and administratively burdensome, which discourages SMEs and local actors from launching or scaling up innovative projects. The absence of region-specific investment tools means that promising initiatives often stall at the pilot phase. In addition, public procurement systems rarely integrate circular bioeconomy priorities, which reduces market incentives for sustainable products and services.

- ◆ **Solution 3.1:** Establish regional bioeconomy investment funds (e.g., public-private partnership vehicles) to provide long-term, mission-driven financing (Policy Recommendation 7 in D4.3).
 - **Link:** CCRI-CSO funding overview (<https://circular-cities-and-regions.ec.europa.eu/>).
- ◆ **Solution 3.2:** Leverage green public procurement – embed circular bio-criteria into all major regional tenders to stimulate market demand (Policy Recommendation 9 in D4.3)
 - **Link:** Deliverable D2.3 (ROBIN Toolbox user manual – guidelines on green procurement).

Low Public Awareness & Educational Gaps

Barrier #4: Public awareness remains a foundational but often overlooked barrier to circular bioeconomy development. Surveys and consultations indicate that many citizens – and even some

ROBIN White Paper: Overcoming Regional Challenges and Barriers to Circular Bioeconomy Development

decision-makers – lack a clear understanding of what the circular bioeconomy entails, why it matters, and how it connects to their everyday lives. This knowledge gap fosters scepticism, delays behavioural change, and limits grassroots support for policy reforms. Education systems and media platforms often fail to communicate the relevance of bio-based innovations, leaving communities unprepared for systemic transitions.

- ◆ **Solution 4.1:** Launch targeted awareness-raising campaigns, including the integration of bioeconomy topics into school/university curricula (Policy Recommendation 5 in D4.3).
 - **Link:** Informative Materials & Useful Tips section in D4.3.
- ◆ **Solution 4.2:** Organise an annual “Bioeconomy Week” event to showcase innovations, foster community engagement, and strengthen public understanding.
 - Success Story no. 13 Bioeconomy Ireland Week case, in Deliverable D4.3 and <https://irishbioeconomy.ucd.ie/biw/>.

Insufficient Data-Driven Monitoring & Evaluation

Barrier #5: Effective policy relies on robust data – yet most regions lack real-time, evidence-based monitoring systems tailored to the bioeconomy. Policymakers struggle to assess the effectiveness of interventions, identify gaps, or measure social and environmental outcomes. Traditional monitoring frameworks are often outdated, non-interoperable, or disconnected from the realities of local governance. Without dynamic tools to support adaptive management, regions risk implementing policies that are neither responsive nor accountable.

- ◆ **Solution 5.1:** Deploy the ROBIN Policy Monitoring System to track governance model performance on ESG and RRI indicators.
 - **Link:** Policy Monitoring System Tool – <https://robintoolbox.web.auth.gr/index.php/policy-monitoring-system/>
- ◆ **Solution 5.2:** Use the ROBIN Environmental Protection Planning Tool for continuous evaluation of non-eco-friendly practices and to design corrective actions.
 - **Link:** Environmental Protection and Planning Tool – <https://robintoolbox.web.auth.gr/index.php/environmental-protection-planning/>

Social Fairness & Environmental Impact Considerations

Barrier #6: The transition to a circular bioeconomy must not exacerbate social inequalities or ecological harm. Yet many regions face challenges in ensuring territorial inclusion and equitable benefit-sharing. Marginalized rural communities, indigenous groups, and low-income populations are at risk of exclusion from emerging value chains. Simultaneously, if environmental externalities such as biodiversity loss or land degradation are not properly assessed, the bioeconomy could replicate unsustainable patterns of the fossil economy. Social and environmental safeguards are thus essential for legitimacy and long-term success.

- ◆ **Solution 6.1:** Implement Just Transition policies that ensure territorial inclusion and equitable access to bioeconomy opportunities (Policy Recommendation 12 in D4.3).
 - **Link:** Deliverable D2.2 (Regional Action Plans) – incorporates social equity measures.
- ◆ **Solution 6.2:** Enhance environmental impact assessments in bio-based sectors by applying tools from the ROBIN Toolbox, such as “Good Governance Practices” and relevant case studies (D4.3 – Success Stories).

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- Link: Success Stories section in Deliverable D4.3 (e.g. Success Story #17 "Landscape Recovery Program" of Košice Region as model for ecosystem restoration).

4. ROBIN in Action: Local Solutions from European Regions

The following case studies demonstrate how each ROBIN region applied specific governance strategies, stakeholder engagement models, or educational initiatives to address local challenges in developing the circular bioeconomy. These examples offer transferable lessons to inspire similar action in other European regions.

Andalusia, Spain

Case: Circular Bioeconomy Forum – Multi-Level Stakeholder Exchange



Organised by Regional Ministry of Agriculture, Fisheries, Water, and Rural Development of the Andalusian regional government in collaboration with JRC and IFAPA, the Circular Bioeconomy Forum brought together 350+ stakeholders from Europe and Central America. The event tackled governance, strategies, market trends, and innovation cases. Its success was rooted in strategic partnerships, diverse representation, and structured debates.

Lesson: Well-curated forums backed by institutions can build momentum, share practices, and foster international dialogue.

Baden-Württemberg, Germany

Case: Bioeconomy Congress Baden-Württemberg



To foster networking, policy dialogue, and knowledge exchange, Baden-Württemberg's Ministry of Science, Research and the Arts initiated the biennial Bioeconomy Congress. It convenes academia, business, and policymakers through workshops, seminars, and site visits, offering visibility to regional initiatives. The congress has become a key platform for participatory stakeholder engagement and policy shaping.

Lesson: Regular, high-profile events serve as accelerators for ecosystem building and policy legitimacy.

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Central Macedonia, Greece

Case: Multi-Actor Stakeholder Dialogue for Bioeconomy Visioning



Central Macedonia initiated local stakeholder workshops with municipal authorities, SMEs, and researchers to co-develop a regional bioeconomy roadmap. By using ROBIN's stakeholder mapping tools, the region created clearer pathways to integrate circular principles into local agri-food strategies.

Lesson: Targeted stakeholder mapping and facilitated dialogue can activate fragmented ecosystems and create shared strategic direction.

Southern Region, Ireland

Case: Ireland's Knowledge Centre for Carbon, Climate & Community Action (IKC3) (Using IKC3 initiative – national with strong regional presence)



Led by Munster Technological University, IKC3 builds circular bioeconomy capacity through accredited courses and industry partnerships. It connects higher education, SMEs, and public bodies, identifying emerging skills gaps and delivering solutions through its Sustainability Professional Network.

Lesson: Regional innovation depends on aligning skills development with evolving industry and climate demands, supported by cross-sector partnerships.

Žilina Region, Slovakia

Case: MARC Implementation to Bridge Governance Gaps



Žilina successfully launched a MARC to connect forestry, agriculture, and innovation stakeholders. Using tools from the ROBIN Toolbox, the region addressed governance fragmentation, built mutual trust, and designed pilot actions for circular wood and biomass use.

Lesson: Formalising stakeholder constellations improves cross-sector coordination and ensures policy alignment at regional and EU levels.

5. Action Navigator: Implementation Resources & Direct Links

Having outlined the key barriers to circular bioeconomy development and proposed targeted, actionable solutions, this chapter provides direct access to the practical tools, deliverables, and knowledge resources developed within the ROBIN project. Each sub-section below corresponds directly to the challenges identified in Chapter 2, allowing users to quickly locate the instruments most relevant to their regional context. These resources are designed to support hands-on implementation, ranging from governance frameworks and stakeholder engagement methods to funding strategies and monitoring tools. By embedding ROBIN outputs into regional planning and decision-making processes, stakeholders can accelerate progress toward inclusive, data-informed, and ecologically sound bioeconomy transitions.

Governance Frameworks & MARCs

- Deliverable D4.3 "Replication Guide, Toolkit and Policy Recommendations" (for Policy Recommendations on "Policy & Governance Models Frameworks")
- Deliverable D1.1 "Typology of Circular Bioeconomy Governance Models" (for mapping existing models)
- ROBIN Knowledge Platform – Governance Models (<https://robintoolbox.web.auth.gr/index.php/governance-models/>)
- Deliverable D2.1 "Regional Governance Models" (for Stakeholder Mapping & Engagement Framework)

Stakeholder Engagement & Capacity Building

- Deliverable D4.3 "Replication Guide, Toolkit and Policy Recommendations" (for Policy Recommendations on "Stakeholder Engagement & Capacity Building")
- Deliverable D2.1 "Regional Governance Models" (for MARC setup)
- Deliverable D2.2 "Regional Action Plans" (for templates for capacity-building roadmaps)
- ROBIN Support Actions Portfolio (<https://robintoolbox.web.auth.gr/index.php/support-actions/>)

Financing Mechanisms

- Deliverable D4.3 "Replication Guide, Toolkit and Policy Recommendations" (for Policy Recommendations on "Financing & Investment")
- CCRI-CSO Funding Portal (<https://circular-cities-and-regions.ec.europa.eu/>)
- ShapingBIO Project Analysis on Bioeconomy Financing: shapingbio_d2_4_financing_await-approval.pdf

Awareness & Education

- Deliverable D4.3 "Replication Guide, Toolkit and Policy Recommendations" (for Policy Recommendations on "Awareness Raising")
- Deliverable D4.3 "Replication Guide, Toolkit and Policy Recommendations" (for Success Stories and Lessons Learnt).
- Deliverable D4.3 "Replication Guide, Toolkit and Policy Recommendations" (for Informative Materials & Useful Tips section).

Data-Driven Monitoring & Environmental Planning

- Deliverable D4.3 "Replication Guide, Toolkit and Policy Recommendations" (for ROBIN Toolbox section – Policy Monitoring System; Environmental Protection Planning Tool).
- Access Policy Monitoring System Tool: <https://robintoolbox.web.auth.gr/index.php/policy-monitoring-system/>
- Access Environmental Protection Planning Tool: <https://robintoolbox.web.auth.gr/index.php/environmental-protection-planning/>

Social Fairness & Impact Assessment

- Deliverable D4.3 "Replication Guide, Toolkit and Policy Recommendations" (for Policy Recommendations on "Social Fairness & Environmental Impact")
- Deliverable D4.3 "Replication Guide, Toolkit and Policy Recommendations" (for Success Stories and Lessons Learnt).

6. Conclusion & Next Steps

Addressing the interconnected challenges of governance fragmentation, stakeholder inclusion, financing gaps, public awareness, data-driven monitoring, and social fairness is essential to advancing a circular bioeconomy across European regions. Without coherent multi-level governance frameworks, tailored regional strategies risk misalignment with national and EU policies. Similarly, the absence of structured platforms for multi-actor engagement excludes key voices – such as SMEs, academia, and civil society – from co-creating solutions. Limited financing options stifle innovation and scale-up efforts, while low public awareness undermines community buy-in. Inadequate data monitoring hinders evidence-based policy adjustment, and without explicit attention to social fairness, vulnerable groups risk being left behind.

The solutions proposed in this White Paper – ranging from the creation of MARCs to the development of dedicated investment funds, targeted awareness campaigns, and deployment of the ROBIN Policy Monitoring System and Environmental Protection Planning tools – constitute a coherent and actionable toolkit. By integrating Just Transition policies and strengthening environmental impact assessments, regions can ensure equity and safeguard ecological integrity.

Regional stakeholders are encouraged to take immediate action. First, establish or reinforce MARCs to co-create governance frameworks that align local plans with EU objectives. Second, secure seed financing by reallocating a portion of regional development budgets or forming public-private investment vehicles dedicated to bioeconomy initiatives. Third, launch awareness campaigns in

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schools, universities, and municipalities to build societal understanding and support for bioeconomy. Fourth, deploy the tools of ROBIN Toolbox to gather real-time data for continuous policy refinement. By taking these steps, regions can lay a strong foundation for sustainable growth, innovation, and inclusive development.

To enable ongoing improvement, peer-review workshops and mutual learning events should be convened regularly. These platforms can facilitate the exchange of success stories, challenges, and good practices – fostering shared problem-solving and comparative learning. Although the ROBIN framework provides robust methodologies, each region must adapt these approaches to its unique socioeconomic, environmental, and institutional context. Customizing governance models, stakeholder engagement strategies, financing mechanisms, and monitoring systems will ensure lasting effectiveness and resilience. By committing to collaboration, mutual learning, and local adaptation, European regions can lead the way toward a circular bioeconomy that delivers long-term benefits for people and the planet.

The ROBIN White Paper is not a static document but a starting point for iterative learning and adaptive policy design. As regional realities evolve, so too must the frameworks and tools supporting circular bioeconomy transitions. Therefore, continuous stakeholder dialogue, real-time data collection, and feedback mechanisms are crucial for maintaining momentum. The integration of the ROBIN tools into regional innovation ecosystems should be accompanied by long-term institutional support, fostering ownership and local adaptation. With the right blend of ambition, inclusivity, and evidence, European regions can transform today's barriers into opportunities for systemic sustainability.

References & Direct Links

This final section consolidates all ROBIN project outputs, tools, and supporting resources mentioned throughout the White Paper into a single, accessible list. It is intended to facilitate immediate navigation for stakeholders seeking further detail, replication materials, or hands-on guidance. Whether used for strategic planning, capacity building, policy design, or project implementation, these references form the practical backbone of the ROBIN approach. By drawing on these interconnected sources, regional actors can adapt proven methodologies to their unique contexts and drive forward an inclusive and resilient circular bioeconomy.

- ◆ [Deliverable D1.1 – Typology of Circular Bioeconomy Governance Models.](#)
- ◆ [Deliverable D1.2 – Good Governance Practices.](#)
- ◆ [Deliverable D2.1 – Regional Governance Models.](#)
- ◆ [Deliverable D2.2 – Regional Action Plans.](#)
- ◆ [Deliverable D2.3 – ROBIN Toolbox \(User Manual and Tool descriptions\).](#)
- ◆ [Deliverable D4.1 – Outcomes, Impacts, and Perceptions Change.](#)
- ◆ [Deliverable D4.3 – Replication Guide, Toolkit and Policy Recommendations](#)
- ◆ **CRRI-CSO Funding & Support:** <https://circular-cities-and-regions.ec.europa.eu/>
- ◆ **ROBIN Toolbox (online):** <https://robintoolbox.web.auth.gr/>

ROBIN White Paper: Overcoming Regional Challenges and Barriers to Circular Bioeconomy Development



About the project

Europe's regional authorities have a crucial role to play as agents of inclusive and resilient economic development for their territories. ROBIN sets out to empower them to fulfil this role with support to co-shape their governance structures in to accelerate the deployment of their circular bioeconomy targets, while also promoting social innovation. We demonstrate the potential of innovative circular bioeconomy governance structures and models in 5 regions within Ireland, Germany, Spain, Slovakia and Greece. We set-up Multi-Actor Regional Constellations engaging key stakeholders to co-create novel governance structures, well-embedded within existing structures of our regions and mandated to execute circular bioeconomy strategies and to coordinate effectively with the Circular Cities and Regions Initiative – Coordination and Support Office (CCRI-CSO). We also provide them with tailored support for enhanced stakeholder engagement, as well as a practical toolbox to improve the operation and monitoring of their models. In the process we coordinate our actions with the CCRI-CSO.

Partners	URL
Q-PLAN INTERNATIONAL ADVISORS PC	www.qplan-intl.gr
FUNDACION CORPORACION TECNOLOGICA SE ANDALUCIA	www.corporaciontecnologica.com
WHITE RESEARCH SRL	www.white-research.eu
PEDAL CONSULTING SRO	www.pedal-consulting.eu
STEINBEIS 21 GMBH	www.steinbeis-europa.de
ROZVOJOVA AGENTURA ZILINSKEHO SAMOSPRAVNEHO KRAJA NO	www.razsk.sk
MUNSTER TECHNOLOGICAL UNIVERSITY	www.circbio.ie
ARISTOTELEIO PANEPISTIMIO THESSALONIKIS	www.auth.gr
REGION OF CENTRAL MACEDONIA	www.pkm.gov.gr
CONSEJERÍA DE AGRICULTURA, PESCA, AGUA Y DESARROLLO RURAL	www.juntadeandalucia.es
INSTITUTO ANDALUZ DE INVESTIGACION Y FORMACION AGRARIA PESQUERA ALIMENTARIA Y DE LA PRODUCCION ECOLOGICA	www.juntadeandalucia.es
BIOPRO BADEN-WUERTTEMBERG GMBH	www.bio-pro.de
SOUTHERN REGIONAL ASSEMBLY	www.southernassembly.ie

CONTACT US: info@robin-project.eu

VISIT: www.robin-project.eu



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Annex III: Summary of the 10 Key Policy Topics Identified through Project Synergy

Below is a summary of the 10 key policy topics that emerged from the project synergy activities, compiled and presented by PED during the 2nd Mutual Learning Workshop (February 2025). This extract is based on the presentation “Our Policy Trending Topics (Top 10 List)” delivered by Adriana Čiefová and reflects the shared insights and priorities of four Horizon Europe projects (ROBIN, BIOTRANSFORM, BIOMODEL4REGIONS, and ShapingBio).



Shortlist of 10 Topics

01 Governance and Policy Alignment

Policy inconsistencies across governance levels limit coherent bioeconomy strategies.

02 Cross-Sectoral Collaboration and Stakeholder Engagement

Limited engagement between public, private, and civil society actors.

03 Financial Barriers and Funding Gaps

Insufficient and misaligned funding restricts bioeconomy project scaling.

04 Market Formation and Demand-Side Barriers

Limited market incentives and demand-side policies for bio-based products.

05 Information Sharing and Knowledge Exchange

Weak interregional communication and knowledge dissemination.

06 Regulatory and Policy Barriers

Complex and diverging policies hinder local bioeconomy development.

07 Environmental Impact and Resource Efficiency

Competition for biomass and land use raises sustainability concerns.

08 Innovation and Technology Access

Limited adoption of advanced technologies affects regional competitiveness.

09 Public Awareness

Low awareness of bioeconomy benefits affects consumer and investor interest.

10 Social and Regional Challenges

Economic disparities, labor migration, and education gaps slow progress.



Annex IV: Interactive Stakeholder Feedback via Mentimeter – 2nd Mutual Learning Workshop

ROBIN Policy Recommendations Collaborative Forum

The insights gathered will contribute directly to Deliverable D4.3 of the ROBIN project, which focuses on Policy Recommendations for supporting the development of the circular bioeconomy in European regions.

Please specify your '**Other**' suggestion for **Question 1** here:

Capture data on available bio-resources at NUTS3 level
Promote awareness about the need to strengthen the network for bioeconomy
no idea
no idea for this

Question 1: What governance and policy actions should be prioritized to support the circular bioeconomy and related social and regional challenges?



Rank	Action
1st	Develop comprehensive regional bioeconomy action plans aligned with EU strategies.
2nd	Establish regional bioeconomy governance bodies to connect stakeholders and facilitate inclusive decision-making.
3rd	Strengthen multi-level governance and inter-regional cooperation to improve coordination, especially in underdeveloped regions.
4th	Simplify legislative processes and administrative burdens to encourage wider adoption of bioeconomy initiatives.
5th	Ensure policy coherence across climate, agriculture, and bioeconomy policies.
6th	Other - please specify on the next slide.

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1st	Develop comprehensive regional bioeconomy action plans aligned with EU strategies.
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3rd	Strengthen multi-level governance and inter-regional cooperation to improve coordination, especially in underdeveloped regions.
4th	Simplify legislative processes and administrative burdens to encourage wider adoption of bioeconomy initiatives.
5th	Ensure policy coherence across climate, agriculture, and bioeconomy policies.
6th	Other - please specify on the next slide.

Question 2: What stakeholder engagement and capacity-building strategies are the best for increasing public awareness and participation in bioeconomy?



Rank	Strategy
1st	Foster innovation clusters to support start-ups and SMEs in the bioeconomy sector.
2nd	Develop bioeconomy-focused training and education programs to build skills, esp. in less-developed regions.
3rd	Strengthen university-industry partnerships to improve knowledge transfer and bridge regional skill gaps.
4th	Set up regional bioeconomy councils with representation from all sectors to ensure inclusivity.
5th	Increase citizen engagement through public consultations and forums to enhance public trust and awareness.
6th	Other - please specify on the next slide.

Question 2: What stakeholder engagement and capacity-building strategies are the best for increasing public awareness and participation in bioeconomy?



Rank	Strategy
1st	Foster innovation clusters to support start-ups and SMEs in the bioeconomy sector.
2nd	Develop bioeconomy-focused training and education programs to build skills, esp. in less-developed regions.
3rd	Strengthen university-industry partnerships to improve knowledge transfer and bridge regional skill gaps.
4th	Set up regional bioeconomy councils with representation from all sectors to ensure inclusivity.
5th	Increase citizen engagement through public consultations and forums to enhance public trust and awareness.
6th	Other - please specify on the next slide.

Mentimeter

Please specify your 'Other' suggestion for **Question 2** here:

cluster are already represented.

Research private and independent research bodies - industry

Like Comment Share

Mentimeter

Question 3: What financing mechanisms should be prioritized to accelerate bioeconomy projects?

1st		Provide tax incentives and subsidies for bioeconomy innovation.
2nd		Establish regional investment funds to ensure all regions have access to dedicated financing.
3rd		Use green public procurement to boost demand for bio-based products.
4th		Improve access to EU funding instruments (Horizon Europe, LIFE, Interreg).
5th		Strengthen public-private partnerships to attract more investment and create regional employment opportunities.
6th		Other - please specify on the next slide.

Like Comment Share

Mentimeter

Please specify your 'Other' suggestion for **Question 3** here:

Establish PPPP - Public-Private-People-Partnerships

Having structures bundling support access to many existing funding mechanisms

more structures and regional funding? not only interreg

research and industry collaboration also in kind work mode

Like Comment Share

Mentimeter

Quest. 4: What research, innovation and education policies should be prioritized to reduce social and regional inequalities in bioeconomy development?

1st		Support pilot projects and demonstration facilities to scale up innovations.
2nd		Prioritize R&D funding for bio-based materials, waste valorization, and circular design.
3rd		Integrate bioeconomy topics into education curricula at all levels.
4th		Establish regional bioeconomy monitoring observatories to track data on social and regional impacts.
5th		Enhance inter-regional knowledge-sharing platforms (workshops, best practices) to support less developed areas.
6th		Other - please specify on the next slide.

Like Comment Share

Please specify your 'Other' suggestion for Question 4 here:

Bioeconomy must not solve all problems as topics of an gender ideology.

gender diversity exists, as well as racial and class diversity, among biodiversity actors. Women are still underrepresented and have more difficulties to access to resources

Question 5: How can we ensure that the transition to a circular bioeconomy is socially fair and environmentally sustainable?



Rank	Suggestion
1st	Support rural and regional bioeconomy initiatives to prevent labor migration.
2nd	Implement Just Transition policies to prevent social and economic inequalities.
3rd	Ensure equitable access to bioeconomy opportunities for vulnerable communities and disadvantaged regions.
4th	Better align bioeconomy policies with Sustainable Development Goals (SDGs).
5th	Strengthen environmental impact assessments for bio-based industries.
6th	Other - please specify on the next slide.

Please specify your 'Other' suggestion for Question 5 here:

Respect the different regions in the geographical and cultural landscape. The bioeconomy can't solve all problems. Focus on the core-strength of bioeconomy.

Developing the whole region, create good job opportunities

social impact assessment is still not fully developed. LCA is used, also LCC but not social aspects are considered

Question 6: What are the best ways to raise awareness and engage the public in the circular bioeconomy?



Rank	Suggestion
1st	Integrate bioeconomy topics into schools and higher education curricula.
2nd	Launch large-scale public awareness campaigns showcasing bioeconomy benefits, focusing on low-awareness regions.
3rd	Organize citizen engagement initiatives (community projects, participatory governance) to improve local participation.
4th	Use digital tools and storytelling to make the bioeconomy more accessible to wider audiences.
5th	Implement bioeconomy dissemination activities (policy briefs, white papers, reports) to inform policymakers and the public.
6th	Other - please specify on the next slide.

Mentimeter

Please specify your 'Other' suggestion for **Question 6** here:

Best case: people "just" use biobased products with even a better performance than a fossile alternative. Not all consumers want to be informed, e.g. "over-informed" with product-labels

Storytelling and marketing utilizing public-private partnerships

Be creative in where to reach audience, think also about regional festivals, adult education centers

our malls are full of newsletters and policy recommendations, but still involvement of citizens and CSOs is poor. Specially those people at risk like migrants

Have the proper formats, not too academic

Like 0

Mentimeter

Question 7: What monitoring and evaluation strategies should be prioritized to track bioeconomy progress?

Rank	Strategy
1st	Develop real-time monitoring systems to track bioeconomy policy impact.
2nd	Use EU bioeconomy monitoring system data for policy adjustments.
3rd	Strengthen regional observatories for tracking innovation and market trends.
4th	Implement periodic policy reviews to assess governance effectiveness.
5th	Enhance transparency and accountability in policy implementation.
6th	Other - please specify on the next slide.

Like 0

Mentimeter

Please specify your 'Other' suggestion for **Question 7** here:

Implement a monitoring based on available data without new bureaucracy for the stakeholders.

Develop regional statistics to be used

One that aligns with region, available data and evaluation processes

another important factor is the quality of data, and that monitoring also entails social issues

Develop and use regional statistics

Also include practical, qualitative parts to track regional impact for the transition, which is slow

Like 0

Mentimeter

Thank you for completing the survey! Your insights are highly valuable to the ROBIN project!

Like 0



DEPLOYING CIRCULAR BIOECONOMIES AT
REGIONAL LEVEL WITH A TERRITORIAL APPROACH

About the project

Europe's regional authorities have a crucial role to play as agents of inclusive and resilient economic development for their territories. ROBIN sets out to empower them to fulfil this role with support to co-shape their governance structures in to accelerate the deployment of their circular bioeconomy targets, while also promoting social innovation. We demonstrate the potential of innovative circular bioeconomy governance structures and models in 5 regions within Ireland, Germany, Spain, Slovakia and Greece. We set-up Multi-Actor Regional Constellations engaging key stakeholders to co-create novel governance structures, well-embedded within existing structures of our regions and mandated to execute circular bioeconomy strategies and to coordinate effectively with the Circular Cities and Regions Initiative – Coordination and Support Office (CCRI-CSO). We also provide them with tailored support for enhanced stakeholder engagement, as well as a practical toolbox to improve the operation and monitoring of their models. In the process we coordinate our actions with the CCRI-CSO.

Partners	URL
Q-PLAN INTERNATIONAL ADVISORS PC	www.qplan-intl.gr
FUNDACION CORPORACION TECHNOLOGICA SE ANDALUCIA	www.corporaciontecnologica.com
WHITE RESEARCH SRL	www.white-research.eu
PEDAL CONSULTING SRO	www.pedal-consulting.eu
STEINBEIS 2I GMBH	www.steinbeis-europa.de
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MUNSTER TECHNOLOGICAL UNIVERSITY	www.circbio.ie
ARISTOTELEIO PANEPISTIMIO THESSALONIKIS	www.auth.gr
REGION OF CENTRAL MACEDONIA	www.pkm.gov.gr
CONSEJERÍA DE AGRICULTURA, PESCA, AGUA Y DESARROLLO RURAL	www.juntadeandalucia.es
INSTITUTO ANDALUZ DE INVESTIGACION Y FORMACION AGRARIA PESQUERA ALIMENTARIA Y DE LA PRODUCCION ECOLOGICA	www.juntadeandalucia.es
SOUTHERN REGIONAL ASSEMBLY	www.southernassembly.ie

CONTACT US: info@robin-project.eu

VISIT: www.robin-project.eu