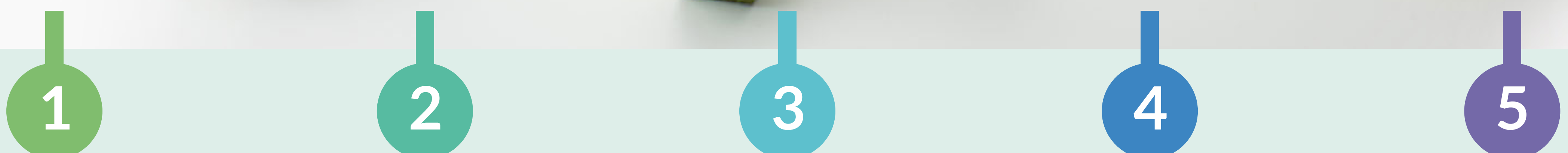




SYMBIO

Shaping symbiosis in bio-based industrial ecosystems based on circular by-design supply chains.

SYMBIO provides European regional communities with tools and methodological approaches to build business models based on circular bioeconomy and industrial symbiosis. It is a three-year project funded by the European Commission's Horizon Europe programme in the context of the Call "Symbiosis in the bio-based industrial ecosystems" (Grant Agreement n. 101135166).



Our goals and objectives

SYMBIO unlocks local bioeconomy by promoting sustainable and innovative paths towards the green transition, following these strategic objectives:

Identifying and evaluating secondary resources and technical solutions for enabling industrial symbiosis in the **bio-based ecosystem**.

Shaping symbiotic **value chains** using a **zero-waste** approach through **big data** and **artificial intelligence** tools.

Developing an integrated **reporting system** to measure and monitor industrial symbiosis.

Demonstrating zero waste's **economic, social and environmental impacts** of SYMBIO models.

Engaging multiple stakeholders in accelerating **local value chains** and training of circular practitioners.

Our strategy

Using big data and artificial intelligence, SYMBIO strengthens the ability of regional biobased industrial ecosystems to design, model and implement symbiotic business models. The sustainability and replicability of the approach are demonstrated by identifying zero-waste business models and developing a modelling, monitoring, and reporting system to ensure local independence from resource supply and deliver a decision-making tool to companies, policymakers, and the scientific community.

The SYMBIO methodology is tested in 12 pilot regions. The approach is structured in four phases:



Data-Hub Building

Scout and analyse resources, solutions, and market enablers to make them accessible to industries that trigger symbiotic activities close to the market.

Inventory of regional inputs/outputs

Ranking of critical factors enabling circularity by design

- 12 pilot regions involved
- 10 main gaps selected



Value-Chain Design

Connect companies in circular value chains based on their specific material flows and available technologies for material reprocessing, proven value change design, regulatory requirements and more.

150+ technologies available to cluster/business networks thanks to tailor-made training

Prioritisation of circular by-design value chains

50 cross-sectional value chains based on zero-waste supply chains modelled



Business Modelling

Develop a Circular Index and a reporting system to support companies in building a business model based on recycling, upcycling, and downcycling by-products and energy use in industrial symbiosis.

Selecting highpotential industrial symbiosis models by MCDA

Model a reporting system by MFA fully integrated into the corporate GRI Sustainability Reporting Standards.

- 10 symbiosis business models designed
- 3 dimensions of sustainability investigated
- 6 co-creation multistakeholder workshops



Business Deploy

Accelerate the development of business classes identified by measuring social, economic and environmental impact to maximise the support of companies, investors and regions.

LCC, LCA, social and sociological benefits assessment

Synergies with EU projects, networks, initiatives

Exploitation routes

- 1,000 subjects reached
- 3 thematic events organised
- Policy recommendations designed

