# SYMBIO GUIDES INDUSTRIAL SYMBIOSIS AND SOCIAL VALUE CREATION FOR CIRCULAR INNOVATION

## SYMBIO PROJECT WORKSHOP

DAY 1

SYMBIO
MEET YOUR SUSTAINABILITY TARGET

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# THE SYMBIO PROJECT AND ITS OBJECTIVES

## Background

The SYMBIO project is an initiative aimed at fostering industrial symbiosis within bio-based ecosystems by promoting circular, sustainable supply chains. This project is aligned with the European Union's goal to drive a transition towards a circular economy and contribute to the European Green Deal and the United Nations Sustainable Development Goals. Coordinated by the Lombardy Green Chemistry Association (LGCA), SYMBIO operates across 12 European pilot regions, including areas in Italy, Austria, Belgium, Spain, Slovenia, and Croatia, leveraging local bio-based resources and innovative practices to support industrial cooperation and circular business models.

## Objectives

SYMBIO's primary objectives are:

1. Identifying and evaluating resources and technical solutions enabling industrial symbiosis and circularity by design in the bio-based ecosystem.
2. Shaping symbiotic value chains using a zero-waste approach through big data and artificial intelligence tools.
3. Developing an integrated reporting system to measure and monitor industrial symbiosis based on regional multistakeholder co-creation approaches.
4. Demonstrating zero waste's economic, social and environmental impacts of industrial symbiosis models.
5. Engage multistakeholder objectives in accelerating local industrial symbiosis and training of circular practitioners.

## Involved Countries

The 5 countries involved in the SYMBIO project, active in 12 European pilot regions,are:

BELGIUM

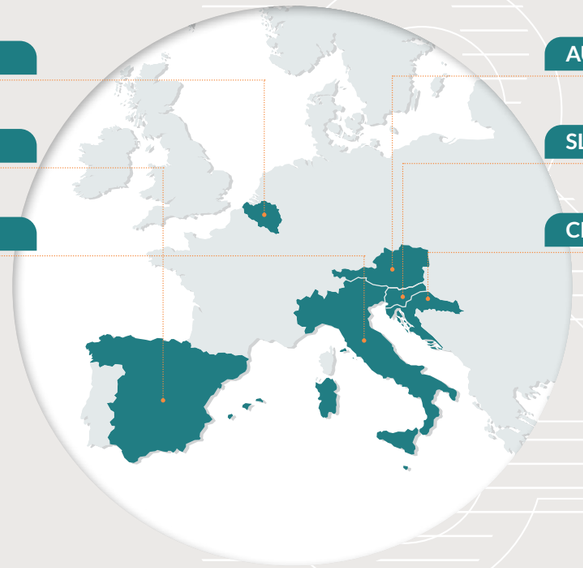
SPAIN

ITALY

AUSTRIA

SLOVENIA

CROATIA



## Methodology

The project methodology is built on comprehensive data collection, the integration of circular design principles, and close collaboration with local and international stakeholders. It is structured into several phases:

### Data-Hub Building

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

- Inventory of regional inputs/ outputs
- Ranking of crritical 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 chain designs, 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 of **Circular Index** and a **reporting system** supporting companies to build a business model based on recycling, upcycling, downcycling of by-products/energy use in industrial symbiosis context.

- Selecting high-potential 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 cases** 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

## Expected Outcomes

1. Create **a regional community of stakeholders** that helps build local capabilities for symbiotic business model
2. **Leverage EU networks, projects, and initiatives** (e.g. Vanguard Initiative, EU Circular Economy Stakeholder Platform, Processess4Pòanet, H4C, EIT, Climate-KIC and other EU-funded project) to incorporate circularity indicators/ measurements
3. **Enabling local biomass security** through supply chain resilience and diversification and creating economies of scale across multiple operators
4. **Identify circular infrastructure gaps** and accelerate the deployment of net-zero emissions technologies in regional biobased ecosystems
5. **Measure the level of integration of renewable energy/raw materials,** promote $CO_2$ capture and storage, and close the energy and raw materials loop through improved eco-design of **high-value-added bio-based products**
6. Support corporate **decision-making processes** to be integrated into sustainability reports by acting as a circularity performance reporting system
7. Increase the **use of less econimically attractive secondary resources** by measuring and incentivising mechanisms that reward and promote products with high content of renewable raw materials

# MAPPING BIO-BASED TECHNOLOGIES & RAW MATERIALS:

SYMBIO's Regional Hub Handbook and Data Collection Inventory

## Industrial Symbiosis in the EU Policy framework

Achieving a sustainable circular economy requires a fundamental and comprehensive transformation of our current production and consumption systems. *Industrial symbiosis* is an innovative, collaborative approach that allows companies to optimize resource use by sharing materials, energy, water, and by-products. In this model, the waste from one industrial process becomes raw material for another, significantly reducing waste production and enhancing overall resource efficiency. The integration of industrial symbiosis with bio-based business models is therefore vital for advancing the circular economy, as by leveraging local resources and creating synergies, businesses can develop sustainable practices that contribute to both economic and environmental goals.

This approach aligns perfectly with the circular economy framework, promoted by the European Union through the *European Green Deal* and the United Nations Sustainable Development Goals, aiming to reduce environmental impact and promote economic and social sustainability.

In the SYMBIO project, industrial symbiosis is fundamental for developing circular, zero-waste supply chains that leverage agricultural and industrial residues. It aims to create added value through the integration of innovative technologies and cross-sector collaboration. SYMBIO aims to meet the need for a comprehensive transformation of the current production and consumption systems, providing European regional communities with tools and methodological frameworks to develop **bio-based business models** based on **circularity by design** and **industrial symbiosis.**

## The Regional Hub Handbook and Data Collection Inventory

The *Regional Hub Handbook* serves as a key tool to guide regional mapping and analysis of resources and technologies and facilitate the implementation of symbiosis-based business models.

### 1. Objectives of the Regional Hub Handbook and Data Collection Inventory

The *Regional Hub Handbook* aims to provide a clear and detailed methodological framework for collecting, mapping, and harmonizing data related to biological resources, biobased raw materials, technologies, and facilities in 12 European pilot regions (Lombardy, Piedmont, Veneto, Friuli-Venezia Giulia, Emilia-Romagna, Carinthia, Slovenia, Croatia, Andalusia, Brussels Capital, Wallonia, and Flanders). Key objectives include:

**Mapping available resources and technologies**

Creating an inventory of primary and secondary biomass, industrial processes, and end applications to understand the current state in each region.

**Standardizing data collection and harmonization**

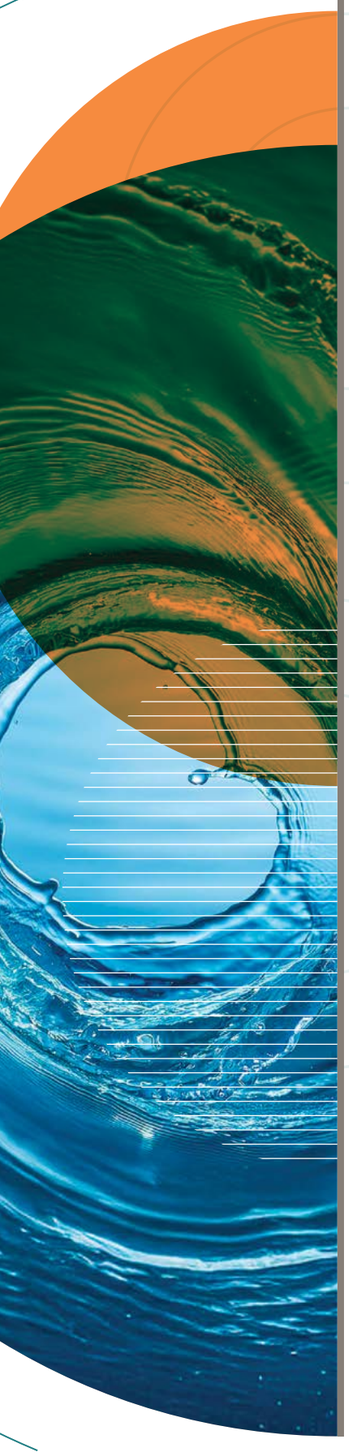
Establishing guidelines for data collection to ensure consistency and comparability across pilot regions, facilitating analysis and replication of successful strategies in other EU areas.

**Promoting industrial symbiosis**

Identifying technical solutions and opportunities for implementing industrial symbiosis and improving supply chain efficiency.

### 2. Selection of the 12 Final Products

The selection of the 12 final biobased products was based on a structured methodology defined by specific criteria to ensure economic viability, environmental sustainability, and stakeholder accessibility. The main selection criteria included: market demand, technological maturity, biomass availability. economic viability and environmental sustainability. These products were chosen for their application in strategic sectors such as food, cosmetics, pharmaceuticals, and chemicals, addressing the growing demand for sustainable solutions.



### 3. Methodology of the Regional Hub Handbook

The methodology outlined in the Handbook is divided into multiple phases, each crucial for ensuring high-quality and consistent data collection and analysis.

#### Biomass data collection

Data collection relies on bibliographic research, academic publications, and official statistical sources. Regional stakeholders, universities, and research centers also play a role in gathering data on primary (e.g., agricultural crops) and secondary (e.g., post-harvest residues) biomass.

- *Primary Biomass:* initial plant materials directly harvested from nature, such as crops.
- *Secondary Biomass:* by-products or residues left over after the primary biomass has been processed or harvested.

#### Biomass data calculation and estimation

Where specific data on secondary biomass is lacking, the Handbook recommends calculations based on conversion rates and yield factors from literature and provided by local experts.

#### Mapping technologies

Existing technologies for biomass conversion are identified through desktop research and direct contact with companies. These technologies are classified as:

- *Available:* Existing facilities that process biomass into final products.
- *Adaptable:* Facilities that could theoretically be modified to process different biomass and produce the desired products.
- *Not available:* Lack of suitable technologies in the region.

#### Data harmonization

Data harmonization ensures uniformity and comparability of collected data across different regions. This phase includes using standardized units of measurement and adopting consistent data representation methodologies.

The *Regional Hub Handbook* is a methodological cornerstone of the SYMBIO project, providing guidelines for mapping, collecting, and harmonizing data related to biological resources and technologies. This tool supports the transition to circular, sustainable, and replicable business models, fostering the development of bio-based supply chains across Europe.

## Regional Data Analysis: Key Findings & Insights

### 1. Biomass Availability Across European Pilot Regions

The analysis of biomass availability in SYMBIO project regions aims to identify their potential to support the bioeconomy and enhance regional sustainable development. Mapping biomass types is crucial, focusing on both **Primary Biomass** and **Secondary Biomass**. Primary biomass includes crops and forestry residues and forms the base raw materials essential for bioeconomic activities. Its availability depends on factors like regional agricultural productivity and land use practices, which are assessed using data from sources such as EUROSTAT and local statistical authorities. On the other hand, secondary biomass comprises residues and by-products resulting from processing primary biomass, such as agricultural leftovers and industrial waste. The availability of secondary biomass is estimated using established conversion rates and expert contributions.

#### Importance of Regional Availability

Mapping the diverse types of biomasses within each region is critical for pinpointing investment opportunities and optimizing supply chains, supporting the local bioeconomy sector. The analysis highlights that factors that influence this capacity mainly include:

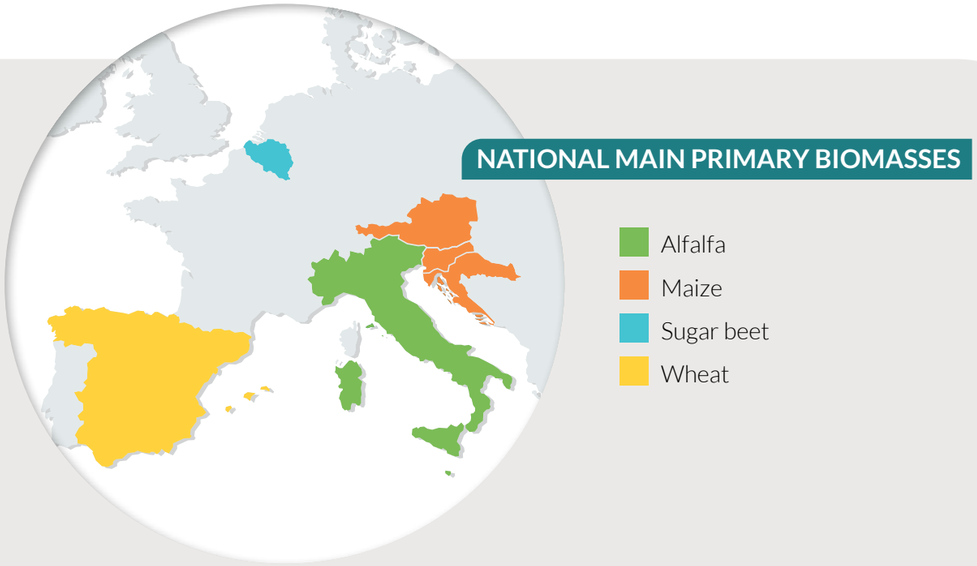
- *Climatic Conditions:* Differences in climate impact the type and quantity of biomass produced within the different regions.
- *Agricultural Practices:* Varying farming techniques and crop rotation strategies affect biomass yields.
- *Natural Resource Abundance:* The inherent availability of forests, arable land, and other resources shape regional output.

#### Strategic Economic Potential

Understanding the geographical distribution and accessibility of biobased raw materials is essential for several strategic reasons. First, it helps in *identifying investment opportunities* by pinpointing regions rich in natural resources, making them prime candidates for potential valorization projects. Additionally, this knowledge is crucial for *optimizing value chains*, as it supports better logistical planning that streamlines the reuse and valorization of waste materials to produce added value molecules. By determining the economic potential of each region and influencing the sustainability and efficiency of biobased value chains the analysis can significantly promote regional development, stimulate local economies and foster the creation of sustainable job opportunities.

#### Guidance for Stakeholder Decision-Making

The insights provided in this overview aim to assist stakeholders in making informed decisions related to resource allocation, strategic investments, and regional development strategies. These considerations are vital within the framework of the SYMBIO project, which focuses on optimizing resource use and fostering sustainable biobased economies.




The provided map illustrates the main primary biomass produced in each specific SYMBIO project regions, highlighting their importance within the European biomass landscape. **Andalusia**'s (**Spain**) main biomass is *wheat*, due to several factors. First, the country's climate, with optimal temperatures around 25°C, and soils that are deep, well-drained, and rich in organic matter, provide ideal conditions for wheat cultivation in Spain which occupies 2 million hectares of the country's agricultural land. Its abundance is mainly liked to the fact that this crop is a staple in the Spanish diet, supplying essential calories and protein, and supports the livestock industry. Additionally, wheat straw, the wheat major secondary byproduct, is widely valued for biomass, bioenergy, and biofuel production, further solidifying wheat's prominence in Andalusia's agricultural landscape.

**Carinthia, Croatia**, and **Slovenia** all have *maize* as their primary form of biomass production. In Carinthia, maize is the leading contributor, comprising 44% of total biomass output. This highlights its essential role in regional agriculture, where it is primarily used for animal feed and supports soil health and crop rotation practices. Croatia, situated in Southeast Europe, benefits from a favorable climate that supports robust agricultural activities, with maize being one of its main crops. Data underscores the significance of maize, which serves as a crucial resource for both human consumption and livestock feed. Similarly, in Slovenia, maize dominates biomass production, accounting for 90% of the total output. This similarity reflects the shared agricultural practices and favorable climates of Croatia and Slovenia, emphasizing the importance of maize in their agricultural economies.

**Italy** has a significant production of *alfalfa*, and most of its production (69%) takes place in the Emilia-Romagna region due to its unique combination of optimal environmental conditions, advanced agricultural practices, and deep regional expertise. The region's climate, characterized by abundant sunshine and adequate rainfall, creates an ideal environment for alfalfa growth. The soil, ranging from clay loams to limestone, provides the deep, permeable, and moisture-retentive qualities essential for the crop's development. These natural advantages are further enhanced by Emilia-Romagna's strong dairy industry, which depends heavily on alfalfa as a high-protein forage crop to improve forage intake and boost milk protein output in dairy cows. Additionally, the availability of disease-resistant alfalfa varieties and the use of advanced farming equipment have streamlined production, making cultivation more accessible and profitable.

Lastly, **Belgium**'s highest biomass production consists of *Sugarbeet*, representing a great quantity of 63% of the total biomass availability. This dominance underscores its critical role in Belgian agriculture, where it is primarily used for sugar production, but also plays a vital part in soil health and crop rotation practices.

This biomass variety between the SYMBIO regions supports Europe's renewable energy strategies, promotes agricultural sustainability, and encourages innovation among biomass producers and technology providers. Consequentially, understanding these regional specializations allows stakeholders to optimize biomass sourcing, strengthen cross-border collaboration, and advance technological solutions tailored to specific biomass types.

## 2. Technology Availability Across European Pilot Regions

The Regional Hub Handbook from the SYMBIO project provides a detailed overview of advanced industrial technologies for converting primary and secondary biomass into specific biobased products. These technologies are categorized as Available, Adaptable, and Unavailable to guide regional planning and strategic development by indicating where mature facilities exist, where technology can be modified for biobased production, and where infrastructure is lacking.
The project carried out an in-depth analysis of technologies across various regions, identifying leading companies and research organizations in producing high-value biobased molecules. This mapping is crucial for assessing regional capabilities and pinpointing key players within the bioeconomy. The presence of such technologies facilitates industrial symbiosis, where the by-products of one process can be utilized in another, promoting new value chains and fostering sustainable practices.

### Italy

Italy's focus on bio-based innovation is strong, particularly in converting agricultural and food-processing waste into valuable molecules. Northern Italy leads in the production of lactic acid and polylactic acid (PLA), essential in the bioplastics industry. These are produced through advanced fermentation processes that allow large-scale, biodegradable material production as alternatives to conventional plastics. Additionally, bioethanol from lignocellulosic biomass and biodiesel production, which yields glycerol as a by-product, are widely supported. Italian facilities can incorporate a variety of biomass types, reflecting a diversified approach to bio-based production that includes intermediate chemicals for various industrial applications.

### Austria

Austria has progressed in sustainable chemical production, leveraging its agricultural and forestry resources. Austrian facilities focus on producing lactic acid and glycerol, valuable in food preservation, pharmaceuticals, and biodegradable plastics. Biodiesel production also generates glycerol,

which has numerous applications in green chemistry, including as a solvent and pharmaceutical ingredient. Some Austrian facilities show potential for producing sorbitol, a widely used sugar alcohol, further positioning Austria to expand its bio-based chemical output.

### Belgium

Belgium's infrastructure supports advanced bio-based innovation, especially in complex bio-based chemicals and materials. Flanders emphasizes biodegradable plastics like polyhydroxyalkanoates (PHA) and PLA, produced through fermentation from sugar-rich biomass. Bioplastics increasingly replace conventional plastics in packaging and single-use items. Belgium also produces glycerol and succinic acid, both essential for applications in cosmetics, pharmaceuticals, and green chemistry. Pilot plants in the region facilitate scaling from lab-based to industrial production, reinforcing Belgium's critical role in Europe's bioeconomy.

### Spain

In Andalusia, Spain capitalizes on agricultural residues to produce bio-based chemicals and fuels. Lactic acid and biodiesel are significant contributors to Andalusia's bioeconomy, with lactic acid serving as a building block for biodegradable plastics, while biodiesel production yields glycerol, valuable across various industries. Bioethanol production, supported by crop residues, also integrates circular principles by generating useful by-products. Andalusia's bio-based sector has potential for expansion into more complex molecules, like furfural and PHA, enhancing its role in sustainable material production.

### Croatia

Croatia's bioeconomy is emerging, focusing on biodegradable materials and circular practices. Although early-stage, Croatia produces prototypes of bioplastics, notably PHA, from plant and animal by-products as sustainable plastic alternatives. Biodiesel production also provides glycerol, supporting industrial applications in the country. Croatia's transition from research to large-scale production faces infrastructure challenges, but local universities' ongoing research efforts indicate a strong commitment to bio-based innovation, creating a foundation for growth in green chemical production.

### Slovenia

Slovenia has yet to develop large-scale bio-based production but has promising potential in sustainable practices. Waste management centers are exploring converting waste into bio-based chemicals, such as lactic acid, used in food preservation and biodegradable plastics. The country also has the infrastructure to produce adipic acid and furfural, important in bioplastic and solvent production. Slovenia's alignment with EU sustainability goals has spurred research, and with more investment, Slovenia could transform its waste management into a source of bio-based materials.

This analysis demonstrates the diversity of bio-based products emerging across Europe, with each region utilizing its unique biomass and industrial strengths. Key molecules include lactic acid, glycerol, PLA, PHA, bioethanol, biodiesel, succinic acid, sorbitol, furfural, and adipic acid, each contributing to greener, more sustainable industries. Adaptable facilities and interconnected industrial processes are critical to supporting a circular economy, where resources are optimized, and waste minimized. By fostering regional collaboration and investing in flexible infrastructure, Europe can continue to develop a resilient bioeconomy that prioritizes sustainable materials and maximizes regional strengths for broader environmental and economic impact.

## 3. Regional innovation ecosystems

The Regional Hub Handbook provides an overview of broader systemic interdependencies that facilitate or hinder the industrial symbiosis in the SYMBIO pilot regions. We mapped bio-based industries innovations ecosystems, examined existing symbiosis practices and identified both enabling and obstructing factors.
The common triggers facilitating industrial symbiosis and bio-based innovation include policy alignment across multiple governance levels, collaborative networks, technological infrastructure, and strong industrial bases. However, the mapping exercise also identified gaps within the ecosystems, which will be further explored with stakeholders to propose adequate measures for improving the conditions for bio-based industrial symbiosis.

### Italy

Italy presents a fertile ground for industrial symbiosis, driven by strong industrial hubs, robust waste management systems and a supportive policy framework. Synergies between sectors such as agriculture, chemicals, and food processing promote material and energy exchanges, supported by organizations like the Lombardy Green Chemistry Cluster. National strategies for circular economy and bioeconomy, alongside EU funding opportunities, enhance the policy environment, though regulatory barriers persist. Research institutions and innovation hubs foster R&D, yet challenges remain in bridging research with industry needs and simplifying access for SMEs to participate in symbiosis networks.

### Austria

In Carinthia, industrial symbiosis is emerging as a vital strategy to advance circular economy goals by fostering collaboration among industries for reusing waste, energy and by-products. The region benefits from a strong policy framework aligned with European and national sustainability goals, supported by entities like the Carinthian Economic Development Fund. However, more tailored initiatives for bio-based businesses are needed. Funding opportunities at various levels, including the Austrian Energy and Climate Fund and the Just Transition Fund, support innovation, though coordination remains complex. Collaborative networks, driven by institutions like Energieforum Kärnten, facilitate cross-industry resource sharing. Research institutions such as FH Kärnten and the University of Klagenfurt contribute significantly to R&D.

### Belgium

In Belgium, industrial symbiosis develops through distinct strategies in Brussels, Flanders, and Wallonia, driven by policy frameworks like the EU Bioeconomy Strategy and national initiatives that encourage resource efficiency and circular practices. Flanders leads with sector-specific hubs such as Blue Gate Antwerp, promoting resource sharing in biotech and chemical industries, and the open access multipurpose pilot/demo facility Bio Base Europe Pilot Plant. Wallonia focuses on agricultural waste valorisation and biorefineries, leveraging its Circular

Wallonia Strategy to foster collaboration and repurpose industrial sites. Brussels emphasizes urban symbiosis, adopting initiatives like BeCircular to enhance material reuse despite spatial constraints. However, challenges such as complex funding landscapes, confidentiality issues, and fragmented coordination across regions require enhanced collaboration and infrastructure development to maximize symbiosis potential.

### Spain

In Andalusia, industrial symbiosis is gaining momentum as part of broader circular economy initiatives, supported by policies like the Andalusian Circular Bioeconomy Strategy and EU directives. The region leverages grants, accelerators, and public-private partnerships to promote bio-based business collaboration and resource-sharing platforms. Research institutions such as IFAPA play an important role in developing technologies for agricultural by-product valorisation, while international fairs and branding initiatives boost visibility for bio-based industries. Challenges remain in scaling symbiosis due to administrative hurdles, market uncertainties, and educational gaps, requiring enhanced coordination, skills development, and tailored business support programs to unlock the full potential of bio-based industrial symbiosis.

### Croatia

Croatia is embracing industrial symbiosis as part of its circular economy objectives, leveraging EU and national policies such as the EU Green Deal and the National Strategy for Sustainable Development. While funding from EU Structural Funds and operational programs provides support, businesses face challenges navigating complex processes, and tailored regional programs for bio-based symbiosis are lacking. Croatia's robust research institutions, including the Ruđer Bošković Institute and the University of Zagreb, drive innovation but require stronger collaboration with industry to accelerate commercialization. Industry associations like CROBIOM and the Croatian Chamber of Economy play a pivotal role in fostering knowledge sharing and resource efficiency through workshops and events, though broader support is needed to scale symbiotic practices effectively.

### Slovenia

Slovenia's bio-based sector is in its early stages, with significant potential for industrial symbiosis driven by EU-aligned policies such as the Circular Economy Action Plan and regional strategies like the Podravje Bioeconomy Strategy. Emerging funding opportunities and eco-innovation networks, including Chambers of Commerce and EIT Climate-KIC, support knowledge exchange and cross-sector collaboration. However, challenges persist in scaling technologies, enhancing research-industry partnerships, and addressing fragmented collaboration. Investments in infrastructure, targeted funding, and public-private partnerships are crucial to bridging the gap between Slovenia's strong research potential and industrial applications, particularly in agriculture, renewable energy, and waste management.



# CREATING SOCIAL VALUE THROUGH CIRCULAR BUSINESS MODELS

Industrial symbiosis and bio-based business models offer powerful tools to advance the *United Nations Sustainable Development Goals (UN SDGs)*. These approaches enable businesses to deliver positive societal impacts beyond financial outcomes, enhancing social value through purposeful strategies embedded in their operations. Social value refers to the broader contributions a business, supply chain, or value network makes to society, encompassing both social and environmental benefits.

Many businesses showcase their social impact through mechanisms such as *Environmental, Social, and Governance (ESG) Reporting or Corporate Social Responsibility (CSR) Reporting.*

While these tools effectively communicate a commitment to sustainability and responsible practices, they risk becoming mere "tick-box" exercises unless they are integrated into the company's overall strategy. To ensure social value becomes an asset rather than a cost, it must be embedded in day-to-day operations. Consider the difference between a business that emits very small volumes of carbon because of the way they work and a company that is a high emitter and pays to offset those emissions: it is better to inset both environmental and social value in the design of business models. SYMBIO offers a unique opportunity to do this, taking a purposive approach to building in social value at the point of design of new business models.

SYMBIO offers a unique opportunity to build social value into business models from the design stage. By identifying opportunities for social value creation early on and incorporating them into decision-making criteria, businesses can maximize benefits for both society and the organization. However, the type of social value that businesses can deliver depends on various factors, such as sector, speciality, business size, partnerships, and location. These factors are influenced by both top-down policies (e.g., the UN SDGs, EU social policies, national and regional development agendas) and bottom-up drivers (e.g., the goals and agendas of businesses and their partners).

Many businesses view social value through a narrow lens. They are not aware of the value that their business is already creating or how they can measure it robustly.

## The role of the United Nations Sustainable Development Goals

Using the United Nations Sustainable Development Goals as a framework for designing social value into business models has three main benefits:

- *Widely Recognized.* The UN SDGs are adopted by many entities and provide a common framework for creating and measuring social value at local, regional, national, and global levels. Businesses can use this framework to demonstrate their contributions to social value across the entire value chain and at every stage of product development.

- *Holistic Approach.* Any sustainability consideration should be reflected in one or more of the SDG goals. This means that existing sustainability goals that may have been set for organizations can be expressed in terms of the SDGs, and commonalities and uniqueness in social value creation can be more easily identified across value chains. The breadth of coverage also encourages businesses to look at social value outside the narrow lens of socio-economic development.

- *Established Framework.* Since their inception in 2015, the SDGs have been applied across diverse contexts and scales, proving their adaptability and relevance.

## Making a start on building social value into your business operations

If you haven't yet considered social value in your business, here are some simple steps you can take to make a start. You can follow this approach for your whole business or adopt it when you are introducing a new business model so that social value is embedded in it.

### 1. Review of your business operations

With your senior managers, organize a dedicated session to have an open and objective discussion about the relationship between your business and social value. This conversation should address both the positive contributions your business makes and any negative impact it may have.
Use the United Nations Sustainable Development Goals (UN SDGs) as a comprehensive framework to guide your analysis. Review each goal systematically and consider your business's impact. Address the following questions for each goal:

a. *What are we doing that has a positive contribution to this goal?*
b. *What are we doing that has a negative contribution to this goal?*
c. *How big is the influence we can have on this goal?*
d. *How important is addressing this goal to our business operations?*
e. *How well are we measuring our contribution to this goal?*

At the conclusion of this activity, you will have a preliminary list of goals that require immediate attention (those with negative contributions). Additionally, you'll have a ranked list of goals your business is already addressing or intends to address, along with a detailed inventory of activities contributing to social value. This process will also help you evaluate how effectively your social value is being measured at present.

### 2. Engage internal stakeholders

Involving both internal and external stakeholders in planning how to integrate social value into your operations ensures that your initiatives are relevant and builds trust in your commitment to these efforts. Consider involving two key groups of stakeholders:

- *Creators of social value.* These include your employees as a baseline but may also extend to others involved in your value chain. Agreeing on social value indicators across the value chain can be challenging, but the benefits—such as increased trust and loyalty-are significant.

- *Beneficiaries of social value.* This group may also include your value chain but should encompass a wider audience-such as local community organizations, environmental advocacy groups, regional government entities, and public service providers.

Begin by engaging your employees. Understand that there will always be a trade-off between the time you have available and the depth of stakeholder engagement you can achieve. Do not let the pursuit of perfection stall progress.

For example, you might organize a co-development workshop for interested employees. During this workshop, introduce the concept of social value and the Sustainable Development Goals. Share your initial findings and invite participants to refine, critique, and expand on your list of goals. Collect suggestions on how your business can enhance social value through everyday operations.

### 3. Identify and engage with beneficiaries

Recognizing the beneficiaries of your social value initiatives might require brainstorming and further research. Begin with your initial list of goals and identify groups that stand to benefit. If direct engagement with stakeholders is not feasible, consider reaching out to professional organizations or advocacy groups that can represent their interests.

Again, start small. Focus on stakeholders connected to your most important goals and try to find local individuals or organizations from those groups. Host a structured co-development workshop where you present your social value priorities and seek feedback. During the workshop, prioritize discussing the outcomes stakeholders would experience if your initiatives succeeded. This feedback will help you refine how you measure social value. Whenever possible, maintain ongoing engagement with the stakeholder groups you consult. This helps to monitor and measure the tangible effects of your social value strategy.

### 4. Develop a comprehensive Action Plan

Now you have had the chance to check your initial social value goals with your stakeholders, you can start to write an action plan. The action plan should

include short-term, medium-term and long-term goals.

- *Short-Term Goals.* Address areas where your business has a negative social value impact and are actionable within a year. Prioritizing these actions ensures your business avoids accusations of "social washing" - emphasizing positive contributions while ignoring negative impacts.

- *Medium-Term Goals.* Focus on enhancing the social value you're already generating and should be actionable within 5 years.

- *Long-Term Goals.* Identify areas you aim to address in the future or those lower on your priority list. These goals may require more than five years to accomplish.

Leverage feedback from stakeholder engagement and UN SDG targets to identify ways to measure your contributions. If your business does not currently have a structured approach to measuring social value, use your initial action plan to establish a baseline. In this case, setting quantitative targets can follow once you have collected initial measurements.

### 5. Collaborate with your value chain

Once your action plan is in place, consider engaging with your value chain partners to align social value goals. Depending on your business operations, you might organize a facilitated co-development workshop with these partners to jointly refine or expand the plan for greater impact. Voluntary agreements aligning social value objectives across the value chain can prevent future difficulties. You can encourage your value chain to go through the same process to develop aligned action plans.

If influencing your value chain is not feasible, focus on internal improvements while encouraging partners to adopt similar approaches.

### 6. Ensure transparency and regular communication to the public

Transparency about how you're contributing to social value is crucial for building trust and accountability. Publicize your action plan, explaining the goals you chose, why you selected them, and the steps you are taking to achieve them. Provide regular updates on your progress, including challenges encountered along the way. This openness demonstrates genuine commitment to creating and sustaining social value.

## SYMBIO Interactive Social Value Workshop

In the SYMBIO interactive social value workshop, we will take the first steps in developing indicators that businesses can use to measure the social value of new business models. This process involves integrating a top-down understanding of sustainable development policy goals for each region with bottom-up contributions from the business community.

During the workshop, we will encourage you to review your business operations. This will help us understand how you and your partners currently deliver social value and allow us to demonstrate how those efforts align with and contribute to the regional agenda. We will explore the barriers and enablers you face in delivering various forms of social value. Together, we will identify the most important and practical social value indicators tailored to your business needs. These indicators will later be incorporated into a multi-criteria decision-making tool for evaluating bio-based circular business models.

**To make the most of this session, please prepare by familiarizing yourself with any social value priorities or initiatives your organization currently has in place. Understanding your starting point will enable more productive discussions and tailored insights.**

By the end of the workshop, you will have achieved the following:

- *A Broader Perspective.* Gain a comprehensive understanding of social value indicators and their relevance to bio-based business development.

- *Practical Tools.* Acquire a tool that can be used within your business and with partners to facilitate discussions and planning around social value.

- *Meaningful Contribution.* Contribute to SYMBIO's framework for integrating social value into bio-based circular business models.

SYMBIO
MEET YOUR SUSTAINABILITY TARGET

## partners

Anteja

CTA

alchemia nova research

BABEG
Success in Carinthia.

STEEM

Cardiff Metropolitan University | Prifysgol Metropolitan Caerdydd

Startup Europe
REGIONS NETWORK

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