



BioReCer

Biological Resources Certifications Schemes

The BioReCer project

Six pathways to smart certification of bio-based systems

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Agenda of Project overview

**Project
Background**

Main innovations

Methodology

Impacts

Progress

Future

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Rationale: challenges related to use bio-waste as feedstock

- Bio-waste use as feedstock has been **restricted to specific industries**, usually with **low added value** in the market.
- Transition to a **bio-based economy** shall address **challenges**: seasonality, composition, spatial distribution, etc.
- **Not** all bio-waste/biomass are **valorized as feedstocks**.
- **Few available information about its traceability** (origin - destination).
- **There are not sustainable indicators** with homogeneous criteria.
- Current biomass **certification schemes target** uses related to the **food/feed and energy industries**.

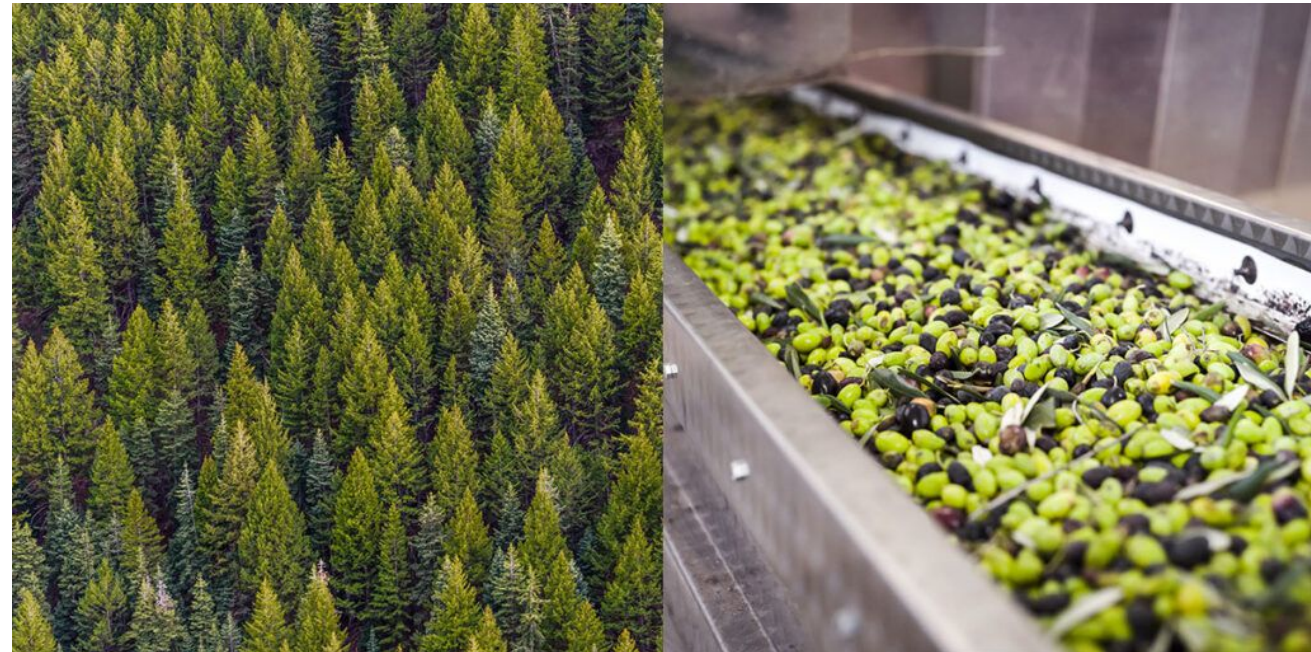
HORIZON-CL6-2021-ZEROPOLLUTION-01: Biological Resources Certification Schemes

BioReCer is a HE funded project that aims to ensure the **environmental performance** and **traceability** of the biological feedstock used by the **bio-based industries**, deploying guidelines to enhance the current **certification schemes**.

Food/feed or energy use is excluded



Start: September 2022
End: August 2025
Duration: 36 months



5 M€ budget

Innovation action (IA)



4 demonstrative sites

BioReCer participants

7 Countries



16 partners

Universities and technological centers



Private companies and business clusters



Standardization, certification and communication bodies

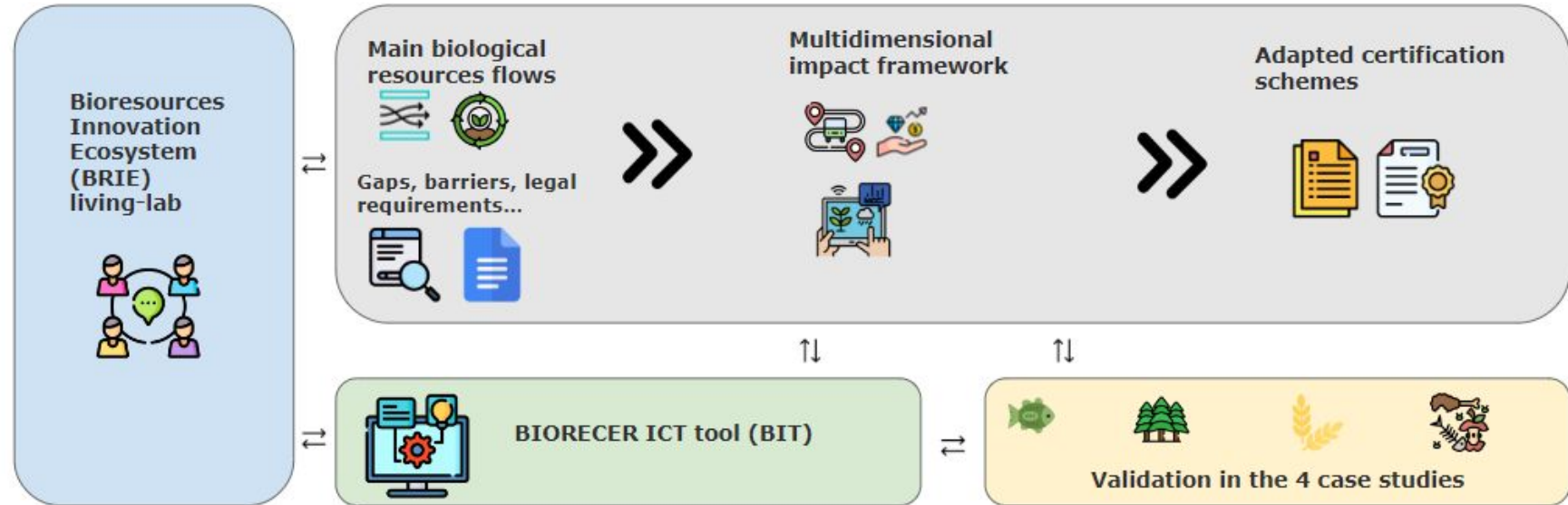


Overall goal of BioReCer is to complement the current certification schemes and enhance bio-based circular systems by promoting the sustainability and trade of resources.

Specific objectives

- To **map the current European biomass flows** considering the trade and environmental performance of their use by the bio-based industries.
- To develop a **multidimensional impact assessment and traceability framework** to evaluate biological resource supply chains
- To **integrate the environmental and T&T assessment framework into established biological resources' certification schemes.**
- To **validate the developed impact assessment framework in 4 case studies** representing the main incipient bio-based supply chains in Europe.
- To integrate and deliver the secure and data-driven **BIORECER ICT tool (BIT)** providing a fully functional environment to enable T&T in certification schemes and the analytic exploitation of biomass data.
- To maximize outreach and beneficial influence of the **project results** and reach the target users through an effectively established **communication and dissemination plan, including innovative training capsules.**

BioReCer concept



BIORECER project is structured in four actions:

- A multidimensional **assessment framework** for an aggregated analysis of the **biological resources** and its integration into a **certification scheme**
- A **BIORECER Innovation ecosystem living-lab** (BRIE-LL) with multi-agent approach
- Advance **ICT tool** to provide valuable information regarding biological resources to stakeholders
- Testing and **validation** of the framework in **four case studies**

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Main innovations

Methodology

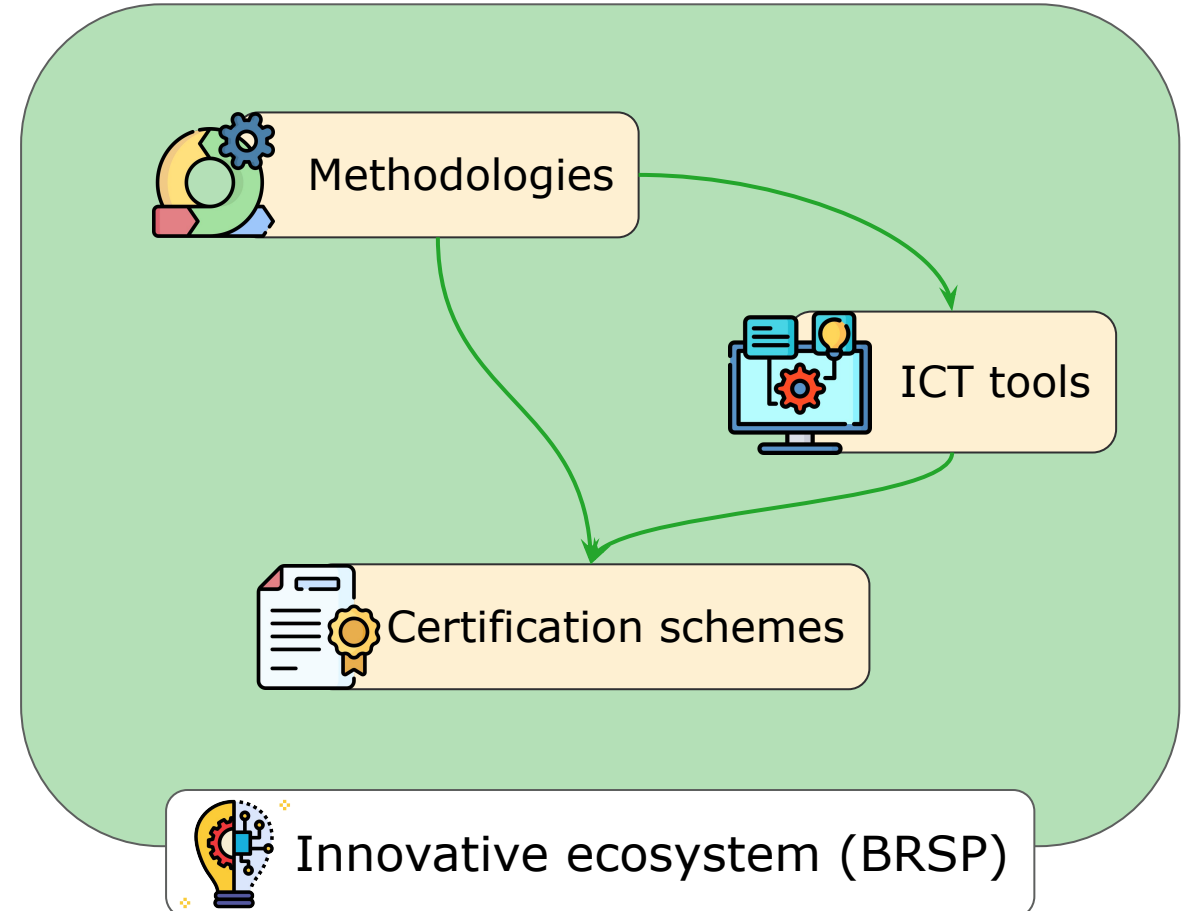
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Main Innovations

- Innovative methodologies, approaches and tools
 - Sustainability
 - T&T
- Novel certification schemes
 - Identification of gaps
- Innovative ICT tools
 - Information
 - DSS
- Open innovation ecosystem for co-creation
 - Stakeholders involvement
 - BioReCer stakeholders platform (BRSP)



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Main innovations

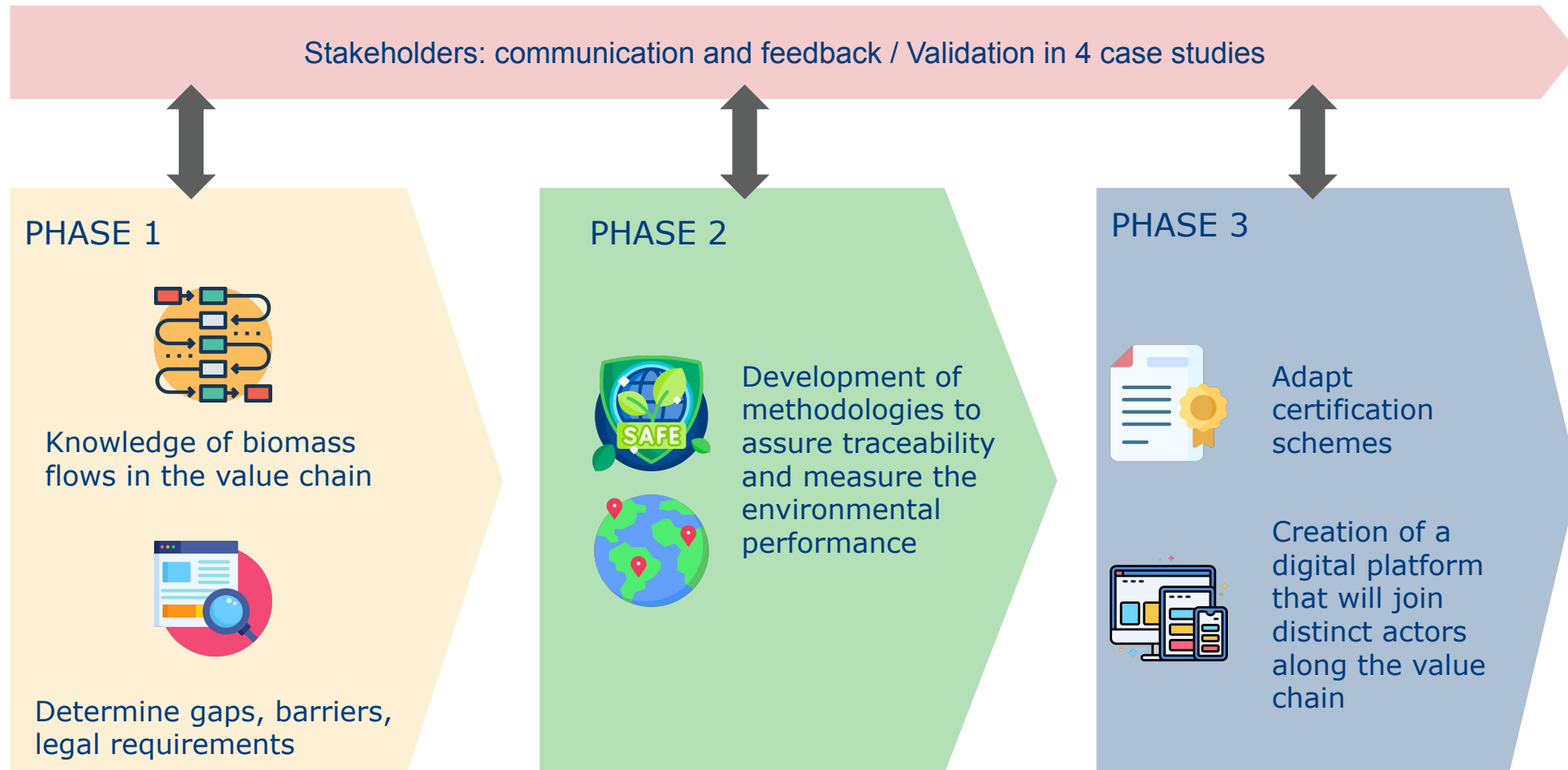
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Case studies

Site: Galicia - Spain



Biomass type:

- Sewage sludge
- Canning industry waste

Spanish fishing sector represents 20% of de EU production

Spain is the first canning manufacturer in the EU

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Site: Central Macedonia - Greece

Biomass type:

- Fruit waste from processing
- Cereal crop by-products
- Pruning waste

26% of the production of the Greece primary sector comes from this region

www.biorecer.eu



Site: Lombardia - Italy



Biomass type:

- Organic Fraction of Municipal Solid Waste
- Sewage sludge
- Agro- waste
- Non-hazardous liquid organic waste



Population of this area represents approximately 15% of Italy's population



Site: Västernorrland - Sweden

Biomass type:

- Forest industry sub-products

Forest industry represents approximately 10-12% of the Swedish industry in terms of sales and employment.



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Main innovations

Methodology

Impacts

Progress

Future

RESULTS

- A guide of drivers, barriers, regulatory, governance framework for the sustainability and T&T biological resources
- Creation of a protocol based on the interaction with stakeholders (BRSP)
- New methodology for the analysis of the sustainability and traceability
- Standardization roadmap
- BioReCer ICT tool
- Validation in case studies



OUTCOMES

- Certification scheme of biological resources for bio-based systems, including the environmental impacts and trade-offs along the bio-based supply chains.
- Definition of new methodologies and indicators for the sustainability and T&T assessment
- Integration into existing certification schemes
- Novel digital tool that serves as platform for certifiers, producers, traders and consumers



IMPACTS

- Promotion of the use of biological resources by bio-based industries (high added value)
- Environmental impact reduction of the biological resources
- Creation of new services and business models: certification and consultancy
- Social acceptance and promotion of the EU taxonomy
- Cost reduction

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Impacts

Progress

Future

Main results M1-M18 (halfway the project)

- Biological feedstocks mapping at European level and identification of the main multidimensional barriers
- Identification of the preliminary draft of principles, criteria, and circularity indicators for the sustainability framework
- Preliminary T&T blueprint and the automated Data Acquisition (DaQ) system
- BioReCer stakeholder platform (BRSP) establishment to actively involve stakeholders
- Preliminary gap analysis and mapping of certification schemes
- BIT reference architecture and data model
- Establishment of material flow diagrams, system limits and input/output data for the case studies

Identifying key multidimensional **barriers** to utilizing and trading biological resources in **bio-based industries**:

Environmental

- Lack of environmental assessment tools to identify possible impacts.
- Lack of specific indicators (i.e., circularity)
- Lack of consensus on what are the most significant impacts.

Legal

- Use restrictions in some processes related to law.
- Lack of policy support to incorporate secondary raw material to process.
- Lack of incentives (i.e., funding, grants) to foster the use of biomasses.
- Lack of a nation-wide level legal regulation framework.
- Lack of certification schemes that grant confidence for possible consumers.

Economic

- Higher cost related to management of biomasses.
- Higher production cost associated with using biological resources.
- Additional cost associated with storage (i.e., refrigeration)
- Additional transportation cost
- Competition with other more profitable valorisation pathways for biomasses (i.e., energy)

Social

- Difficulty in the end user accepting products produced from biological resources (especially if they were considered “waste”)
- Possible health risks
- unwillingness to pay extra for bio products or biological resources.
- Misinformation of the end user regarding sustainability and circularity
- Lack of trust from the general public

Technical

- Lack of traceability across all stages of the biological resources value chain

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Project main results for coming months

- Identification of environmental and circularity criteria, and development of circularity indicators for the sustainability framework
- Create the T&T framework, and design and build the T&T software to monitor the flow of biological feedstock
- Integration of the environmental and traceability framework into a current biological resource' certification scheme
- Develop the ICT tool, and implementation of a decision support system
- Demonstration and validation of the tool and methodologies in the four case studies
- Final exploitation strategy plan definition



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Biological Resources Certifications Schemes

Thank you!

