BIORADAR

MONITORING SYSTEM OF THE ENVIRONMENTAL AND SOCIAL SUSTAINABILITY AND CIRCULARITY OF INDUSTRIAL BIO-BASED SYSTEMS

Circular Bio-based Europe Joint Undertaking

Bio-based Industries Consortium

Co-funded by the European Union

The project is supported by the Circular Bio-based Europe Joint Undertaking and its members. Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.Neither the European Union nor the CBE JU can be held responsible for them.

BIORADAR

Consortium of 7 partners from 4 European countries led by YAGHMA B.V. (Netherlands)

1 University

2 RTOs

3 SMEs

1 Standardization body

Circular Bio-based Europe Joint Undertaking
Bio-based Industries Consortium
Co-funded by the European Union

The project is supported by the Circular Bio-based Europe Joint Undertaking and its members.
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.
Neither the European Union nor the CBE JU can be held responsible for them.

HAW HAMBURG

Hamburg University of Applied Sciences
Founded in 1970; fourth-largest public university of applied sciences in Germany; Interdisciplinary research in sustainability and climate change, and global fields.

Circular Bio-based Europe Joint Undertaking
Bio-based Industries Consortium
Co-funded by the European Union

The project is supported by the Circular Bio-based Europe Joint Undertaking and its members.
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.
Neither the European Union nor the CBE JU can be held responsible for them.

BIORADAR

Monitoring system of the environmental and Social sustainability and circularity of industrial Bio-based systems

- BioRadar project aims to help organizations, policy-makers and investors have the necessary information to step towards a more sustainable bio-based economic model:

Circular Bio-based Europe Joint Undertaking
Bio-based Industries Consortium
Co-funded by the European Union

The project is supported by the Circular Bio-based Europe Joint Undertaking and its members.
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.
Neither the European Union nor the CBE JU can be held responsible for them.

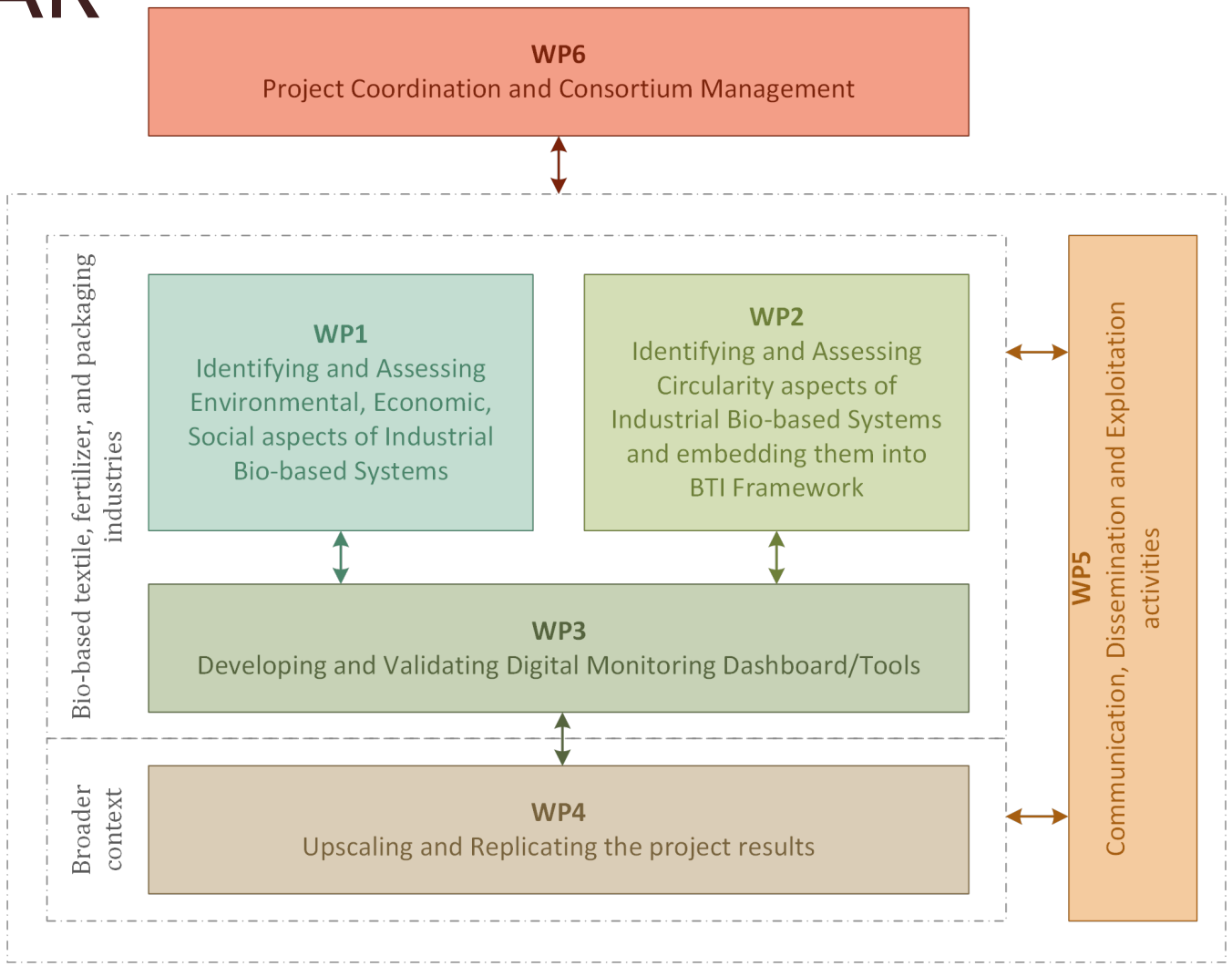
BIORADAR

Improve metrics and frameworks for assessing environmental impact and risks of industrial bio-based systems.

Circular Bio-based Europe Joint Undertaking
Bio-based Industries Consortium
Co-funded by the European Union

The project is supported by the Circular Bio-based Europe Joint Undertaking and its members.
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.
Neither the European Union nor the CBE JU can be held responsible for them.

BIORADAR

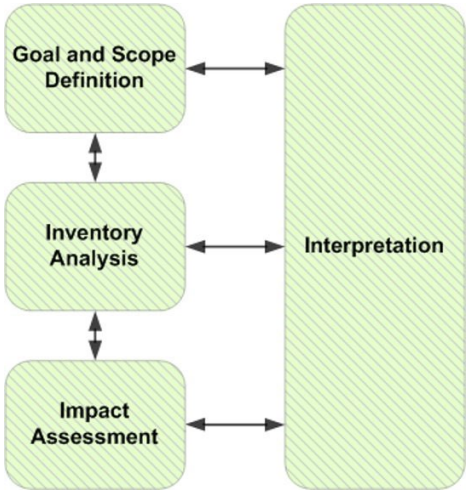


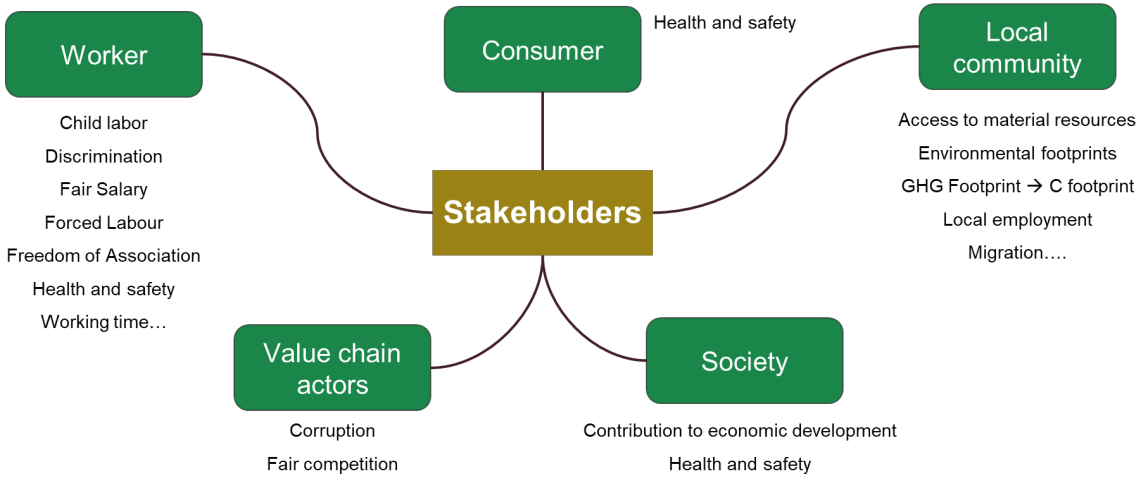
Circular Bio-based Europe Joint Undertaking
Bio-based Industries Consortium
Co-funded by the European Union

The project is supported by the Circular Bio-based Europe Joint Undertaking and its members.
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.
Neither the European Union nor the CBE JU can be held responsible for them.

WP1: Identifying and assessing sustainability aspects (Environmental, Economic, Social) of Industrial Bio-based Systems and embedding them into BTI Framework

- **Identify industrial bio-based value systems and their products to be analysed in this project**
- **Evaluate existing methods/metrics to assess environmental impacts of the selected industrial bio-based systems and their products (LCA)**
- **Life Cycle Cost and cost-feasibility**
- **Social LCA**
- **Evaluate metrics to assess the carbon removal potential and iLUC risk of bio-based solutions**





Circular Bio-based Europe Joint Undertaking
Bio-based Industries Consortium
Co-funded by the European Union

The project is supported by the Circular Bio-based Europe Joint Undertaking and its members.
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.
Neither the European Union nor the CBE JU can be held responsible for them.

WP2: Identifying and assessing circularity of Industrial Bio-based Systems and embedding them into BTI Framework

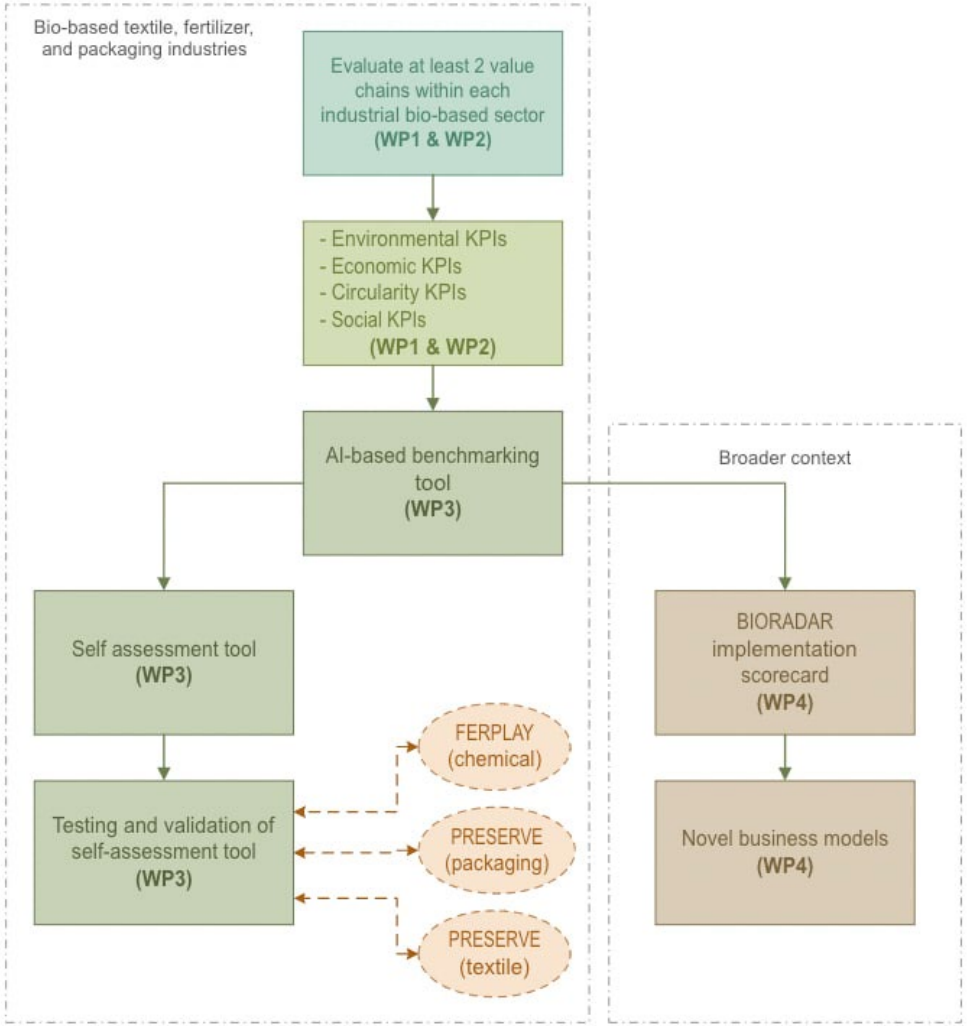
- **Identification of circularity metrics, indicators, methodologies for industrial bio-based systems**
- **Evaluation of existing metrics on circularity for industrial bio-based systems and use-cases and proposition of new indicators**
- **Coupling of indicators among methodologies**
- **Study end-of life issues**
- **Economic aspects of circularity**

Environmental	Unit	Economic	Unit	Social	Unit (medium risk hours)	Circularity	Unit
Climate change	kg CO_2 eq.	Total eco-cost	€	Non-fatal accidents	Number of non-fatal accidents/100.000 employees and year	MCI	%
Eutrophication, freshwater	Kg P eq.			Contribution to economic development	% of GDP	CTI	%
Freshwater Ecotoxocitiy	CTUe			Working time	Weekly hrs per employee		
Land use	m^3 eq.						

Circular Bio-based Europe Joint Undertaking
Bio-based Industries Consortium
Co-funded by the European Union
The project is supported by the Circular Bio-based Europe Joint Undertaking and its members.
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.
Neither the European Union nor the CBE JU can be held responsible for them.

WP3 – Developing and Validating Digital Monitoring Dashboard/Tools : Self-Assessment, AI-Driven Analytics Platform, and Regulatory Tracker Tool

- **Synthetic datasets from WP1 & WP2 to train the AI-driven benchmarking and analytics platform**
- **Building a AI-benchmarking and analytics platform based on synthetic datasets and data from use cases**
- **Building a self-assessment tool**
- **Testing, evaluation and validation of the self-assessment tool under industrial conditions**
- **Building Regulatory Tracker Tool**

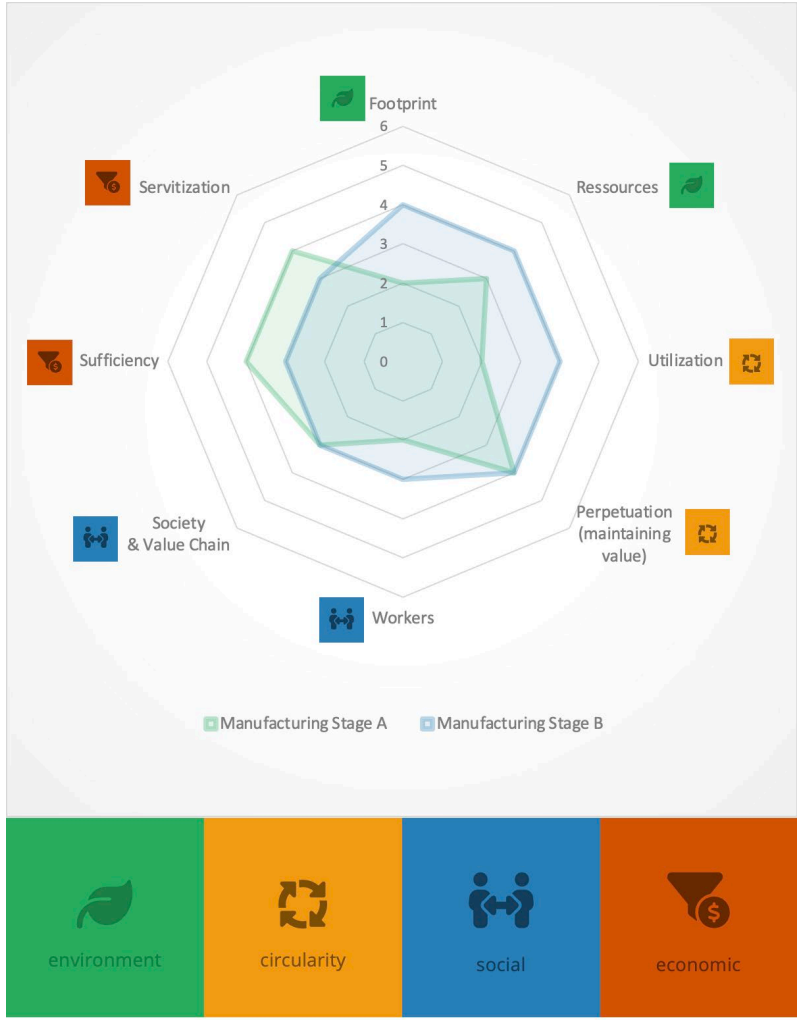


Circular Bio-based Europe Joint Undertaking
Bio-based Industries Consortium
Co-funded by the European Union

The project is supported by the Circular Bio-based Europe Joint Undertaking and its members.
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.
Neither the European Union nor the CBE JU can be held responsible for them.

WP4 – Upscaling and Replicating the project results

- **Set up of the “BIORADAR Replication Facility”**
- **Elaboration of the BIORADAR implementation scorecard**
- **Investigate novel Business Models eg. Servitisation-based Circularity-as-a-Service (CaaS)**
- **Exploitation and Business Plan (EBP) for replication and upscaling**
- **Improving professional skills and expertise**

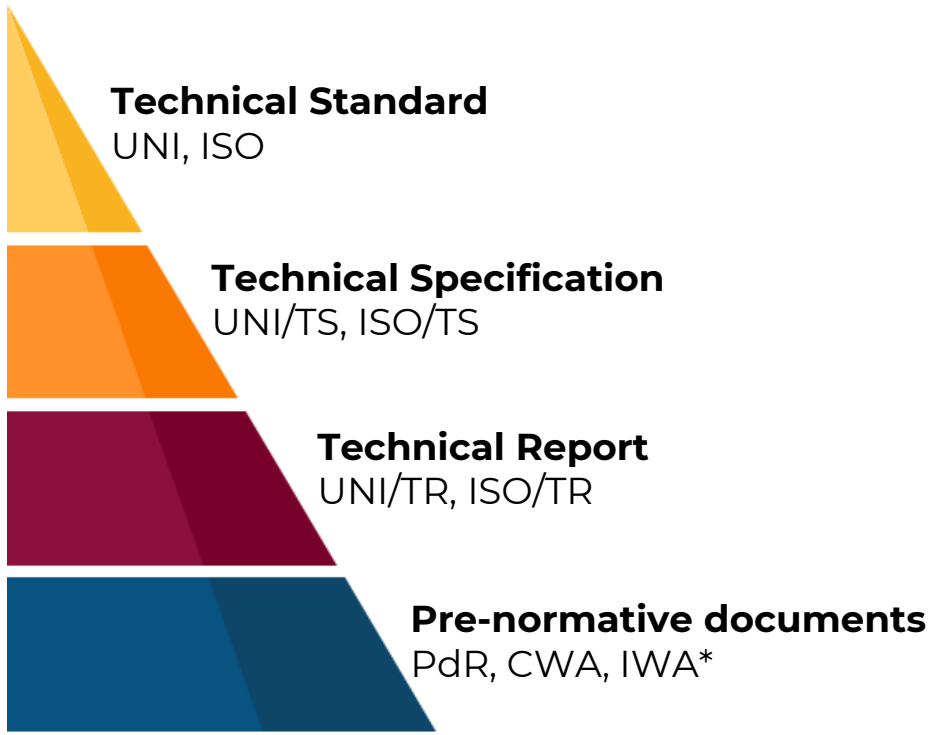


Proposed Visualization for the BIORADAR Scorecard (v2)

Circular Bio-based Europe Joint Undertaking
Bio-based Industries Consortium
Co-funded by the European Union

The project is supported by the Circular Bio-based Europe Joint Undertaking and its members.
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.
Neither the European Union nor the CBE JU can be held responsible for them.

WP5: Communication, Dissemination and Exploitation Activities



- **Communication Activities**
- **BIORADAR Dissemination Plan**
- **Ecosystem and Stakeholder analysis and stakeholder engagement**
- **BIORADAR Clustering**
- **Pre-standardization activities**

Circular Bio-based Europe Joint Undertaking
Bio-based Industries Consortium
Co-funded by the European Union

The project is supported by the Circular Bio-based Europe Joint Undertaking and its members.
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.
Neither the European Union nor the CBE JU can be held responsible for them.

ENVIRONMENTAL IMPACTS, RISKS, AND COSTS

BIO-BASED SYSTEMS MONITORING

BENCHMARKS INDICATORS

SOCIAL IMPLICATIONS

BEST PRACTICES

REGULATIONS MONITORING

INSTRUCTION AND SELF-ASSESSMENT

Circular Bio-based Europe Joint Undertaking
Bio-based Industries Consortium
Co-funded by the European Union

The project is supported by the Circular Bio-based Europe Joint Undertaking and its members.
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.
Neither the European Union nor the CBE JU can be held responsible for them.

YAGHMA

HAW HAMBURG

IRIS

NEXT TECHNOLOGY TECNOTESSILE SOCIETA' NAZIONALE DI RICERCA R. L.

Kneia

UNI UN MONDO FATTO BENE

CETENMA Centro Tecnológico de la Energía y del Medio Ambiente

Circular Bio-based Europe Joint Undertaking

Bio-based Industries Consortium

Co-funded by the European Union

The project is supported by the Circular Bio-based Europe Joint Undertaking and its members. Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CBE JU.Neither the European Union nor the CBE JU can be held responsible for them.