



BIO RADAR

**EMPOWERING BIO-BASED
INDUSTRIES WITH
GROUND-BREAKING
SUSTAINABILITY
SOLUTIONS**



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.



The **BioRADAR** project, funded and managed by the Horizon Europe programme and the [Circular Bio-Based Europe Joint Undertaking](#) (CBE JU), is unique because it takes a system perspective for monitoring and evaluating circularity and sustainability within industrial bio-based systems, aiming to identify opportunities for optimisation across the entire value chain and measuring the subsequent economic and social impacts.

With a specific focus on material circularity, carbon emissions, indirect land-use change (iLUC) risks, and social objectives, the project aims to provide bio-based industries, policymakers, certification and standardisation organisations a universal and transparent Bio-based Transition Indicator Framework, including such tools as the 'global bio-based systems regulatory tracker,' 'AI-driven benchmarking,' and 'self-assessment'.

CIRCULARITY AS A SERVICE

The Circularity as a Service model offers tailored solutions for the bio-based industry, from initiation to ongoing performance monitoring. This shift from ownership to service-centric models aligns seamlessly with circular principles by incentivising durability, repairability, and material recovery, and prioritising long-term outcomes over the mere sale of products.



KEY OBJECTIVE

The **BioRADAR** Project has a mission to guide organisations, policymakers, and investors towards a sustainable, bio-based economic paradigm. This ambitious target is built on a foundation of meticulous

system-based assessments, aiming to bridge the information gap in material circularity metrics and evaluate the environmental and social impacts of industrial bio-based systems.

CORE RESEARCH & DEVELOPMENT

🕒 Evaluating Environmental Impacts:

BioRADAR scrutinises the environmental implications of bio-based textile, packaging, and fertiliser industries and evaluates opportunities for improved circularity.

🕒 Assessing Trade-offs and Synergies:

The project evaluates the intricate balance between economic, social, and environmental facets within industrial bio-based systems.

🕒 Integrated Digital Tools:

Through diligently developed digital tools, the project offers a comprehensive assessment of interlinked impacts, facilitating informed decision-making for stakeholders.



IMPACT ON EU POLICIES

BioRADAR's contributions align seamlessly with EU policies, including the Circular Economy Action Plan, the EU Green Deal's Climate Action Plan, Farm to Fork Strategy, and the Single Market Strat-

egy. The project's outcomes are poised to bolster the adoption of bio-based products, fortify circular bio-based systems, and integrate sustainability metrics into pertinent policies.

USE CASES: TRANSFORMING INDUSTRIES

The **BioRADAR** tools will be integrated and validated across three key industrial applications, with the ultimate aim of integrating these digital tools into targeted bio-based industrial environments.



Bio-based Textile:

The project evaluates environmental sustainability and circularity in the bio-based textile sector, expanding the notion of circular economy beyond traditional paradigms.



Bio-fertiliser:

Through comprehensive analysis and insight from projects like FER-PLAY, **BioRADAR** charts the bio-fertiliser value chain, assessing environmental, social, and cost impacts.



Bio-packaging:

Collaboration with an ongoing EU project, PRESERVE, to improve recyclability and circularity metrics for bio-packaging assessment.

IMPACT ON STANDARDISATION PRACTICES

UNI, the Italian standardization body, plays a pivotal role in transferring **BioRADAR**'s outcomes into European and international standards. By fostering connections with technical committees and ensuring compliance, UNI aims to transform project outcomes into influential pre-standardization documents like the CEN Workshop Agreement (CWA).



BENEFITS TO BIO-BASED INDUSTRY



The **BioRADAR** project emerges during a time of a momentum shift towards a bioeconomy, where more emphasis is placed on the sustainability and circularity of our economic systems. However, development of bio-products and bio-based systems is fragmented with no clear, universal framework for assessing circularity, sustainability, and the social and economic impacts across the entire value chains of various

organisations in different parts of the world. Embracing a system perspective, **BioRADAR** aims to bridge indicator gaps in material circularity, assessing environmental and social impacts within industrial bio-based systems by crafting digital monitoring tools, providing benchmarks, a self-assessment platform and a regulatory tracker tool tailored for the bio-based industry stakeholders.



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