



# BRILIAN

Circular Future for Rural Areas

## Responsible Research & Innovation Deliverable 1.5 (v1)

WP1 Management and coordination



**Circular  
Bio-based  
Europe**  
Joint Undertaking



Bio-based Industries  
Consortium



Co-funded by  
the European Union

**DOCUMENT TITLE:** Responsible Research & Innovation

**DUE DELIVERY DATE:** May 31<sup>st</sup> , 2024

**NATURE:** Report

**PROJECT TITLE:** Cooperative and Sustainable business models for bio-based chains in rural areas.

**PROJECT ACRONYM:** BRILIAN

**INSTRUMENT:** Collaborative Project

**CALL IDENTIFIER:** HORIZON-JU-CBE-2022

**TOPIC:** HORIZON-JU-CBE-2022-IA-02 Cooperative business models for sustainable mobilization and valorisation of agricultural residues, by-products, and waste in rural areas.

**GRANT AGREEMENT:** 101112436

Organisation name of lead contractor for this deliverable:

CIRCE

DELIVERABLE TYPE		
R	Document, report	x
DMP	Data Management Plan	
O	Other	

DISSEMINATION LEVEL		
PU	Public (fully open)	x
SEN	Sensitive, limited under the conditions of the Grant Agreement	

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VERSION RECORD			
Version	Name (Partner)	Description of changes	Date
<b>ToC</b>	CIRCE	Table of contents	<b>April 10<sup>th</sup>, 2024</b>
<b>V1.a</b>	CIRCE	First Draft	<b>April 29<sup>th</sup>, 2024</b>
<b>V1.b</b>	All partners	Reviews and validation of contents	<b>May 10<sup>th</sup>, 2024</b>
<b>V2</b>	CIRCE	Addition of requests->Second draft	<b>May 14<sup>th</sup>, 2024</b>
<b>V3</b>	CIRCE	Final version submitted to EC	<b>May 28<sup>th</sup>, 2024</b>

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## EXECUTIVE SUMMARY

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The present document is the first version of the Responsible Research and Innovation report (RRI) prepared under the BRILIAN project, funded by the Circular Based Europe Joint Undertaking (CBE-JU), with GA reference 101112436.

This open deliverable, shortened as D1.5., has been developed by CIRCE in the framework of Task 1.4 “Innovation management and Responsible Research and Innovation”. The objective of D1.5 is to guide the consortium in RRI practices to be followed along the project implementation, following the RRI’s 6 policies agenda: **1) Ethics, 2) Public engagement, 3) Open Access, 4) Gender, 5) Governance and 6) Science education.**

The practices adhere to the European Commission’s framework of ‘Responsible Research and Innovation’. This cross-cutting approach in the Horizon Europe projects is focused on preemptively evaluating and addressing the potential societal impacts and expectations inherent in project initiatives, fostering the development of research and innovation that is both inclusive and sustainable.

In order to promote the Monitoring of the Evolution and Benefits of Responsible Research and Innovation (MoRRI) in the BRILIAN project, a series of RRI indicators per the 6 RRI’s policies is provided. The indicators will be monitored during the project development and reported through progress reports. In particular, this document will be updated in May 2026 (M36) with the development of D1.12. Responsible Research & Innovation (Progress Report).

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## LIST OF ABBREVIATIONS AND ACRONYMS

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ABI– Action for Bio Innovation

ABF – Advisory Board of Farmers

BIC– Bio-based Industries Consortium

BRILIAN– Cooperative and Sustainable business models for bio-based chains in rural areas

CA – Consortium Agreement

CBE-JU– Circular Based Europe Joint Undertaking

D – Deliverable

DMP – Data Management Plan

DoA – Description of Action

EC – European Commission

GA – General Assembly

GEP – Gender Equality Plan

H2020 – Horizon 2020 The 8<sup>th</sup> EU Framework Programme for Research and Innovation.

HEU – Horizon Europe – the 9th framework Programme of the EC for research, technological development and innovation activities.

IPR – Intellectual Property Right

JU– Joint Undertaking

KoM– Kick-off Meeting

MoRRI- Monitoring Responsible Research & Innovation

PC – Project Coordinator

RRI– Responsible Research & Innovation

SC – Steering Committee

SME – Small and Medium Enterprise

SSH – Social Science and Humanities

VET – Vocational Educational Training

WP – Work package

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## 1. INTRODUCTION

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Responsible Research and Innovation (RRI) embodies a proactive perspective in R&D projects, foreseeing and evaluating potential consequences and societal aspirations concerning research and innovation endeavors. Its overarching goal is to cultivate the creation of inclusive and sustainable research and innovation practices.

In general terms, RRI implies, in the European Commission's words, that *all societal actors (researchers, citizens, policymakers, business, third-sector organizations, etc.) work together during the whole research and innovation process, in order to better align both the process and its outcomes with the values, needs and expectations of society.*

The RRI approach is thus a cross-cutting concept in the Horizon Europe projects, that must implement actions to engage all actors (from individual researchers and innovators to institutions and governments) in research and innovation, enabling easier access to scientific results, to take up gender and ethics in the research and innovation content and process, and to promote formal and informal science education.

The present document, first version of the report on Responsible Research and Innovation (RRI) applied in the BRILIAN project, seeks at guiding the consortium in RRI practices to be followed along the project implementation, following the RRI's 6 policies agenda: (a) Ethics, b) Gender Equality, c) Governance, d) Open Access, e) Public Engagement, and f) Science Education).

To ensure that the RRI is being correctly addressed during the whole execution of BRILIAN, "MoRRI – Monitoring the Evolution and Benefits of Responsible Research and Innovation" indicators will be considered to monitor the project development and reported through progress reports.

## 2. GENERAL GUIDELINES FOR RRI PRACTICES

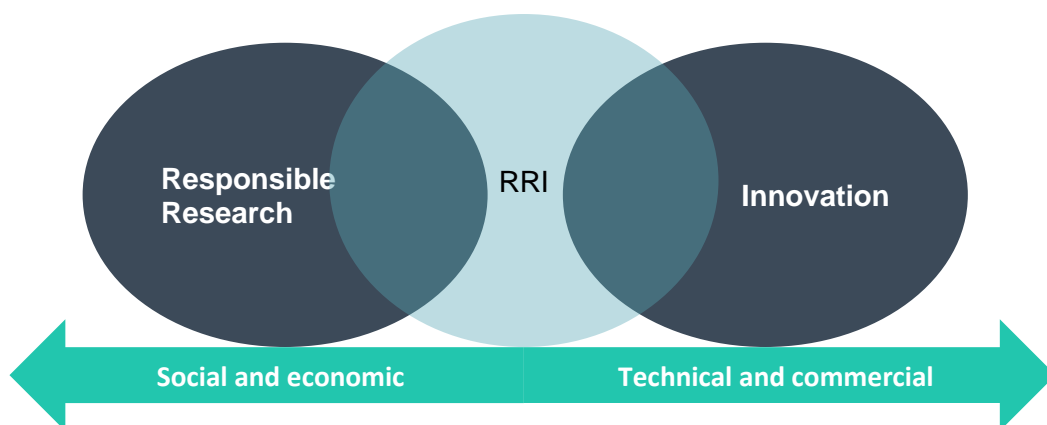
As per the RRI Toolkit (<https://rri-tools.eu/about-rri>), Responsible Research and Innovation consists of:

- a) Involving society in science and innovation 'very upstream' in the processes of R&I to align its outcomes with the values of society,
- b) A wide umbrella connecting different aspects of the relationship between R&I and society: public engagement, open access, gender equality, science education, ethics, and governance, and
- c) A cross-cutting issue in Horizon Europe, the EU Programme for Research and Innovation 2021-2027.

RRI guides the different agents in the research & innovation practices (in this context, the project partners participating in the BRILIAN initiative) in anticipating the implications of their work, including citizens and stakeholders upstream, and reflecting and responding on society's values and concerns. In this way, co-design and co-responsibility for the outcomes of the research and innovation must be facilitated, increasing societal uptake and acceptability of research and innovation.

As noted by the European Commission, RRI is not a trend or a fashion. It represents a way of thinking that balances commercial and other goals with those concerned with wider wellbeing.

Sometimes, the two facets of 'responsible research' and 'innovation' may oppose, since Responsible research' may focus on social and economic concerns; and 'innovation' on technical and commercial goals. RRI brings these together without aiming to restrict commercial activity. The objective is to 'add value' by making sure that ethical considerations that underpin community and societal norms are taken account of.



*Figure 1 Bringing together RR and I (source: Great Project)*

## 2.1. Actors involved in RRI

RRI entails engaging all actors (from individual researchers and innovators to institutions and governments) through inclusive, participatory methodologies in all stages of R&I processes and in all levels of R&I governance (from agenda setting, to design, implementation, and evaluation).






				
POLICY MAKERS	RESEARCH COMMUNITY	EDUCATION COMMUNITY	BUSINESS & INDUSTRY	CIVIL SOCIETY ORGANIZATIONS
From funders to policy officers, research centre directors and representatives of learned societies, whether at a European, national, or local scale	Researchers, innovators, research managers, public affairs and communication officers, and all those who support the diversity of the R&I system	Teachers, students, science museums' staff, families and all those concerned with education at all levels	From contractors and SMEs to large transnational companies with strong R&I activity	From individuals to organisations, NGOs and the media, civil society is crucial to shape the R&I our society needs

Table 1 Actors involved in RRI

## 2.2. Outcomes of RRI

Adopting RRI is meant to aim the following outcomes:

### Learning outcomes

RRI leads to empowered, responsible actors across our R&I systems (researchers, policymakers, businesses and innovators, CSOs, educators). Structures and organizations should create opportunities for and provide support to actors to be responsible, ensuring that RRI becomes — and remains — a solid and continuous reality.

### R&I outcomes

RRI practices strive for ethically acceptable, sustainable, and socially desirable outcomes. Solutions are found in opening up science through continuous, meaningful deliberation to incorporate societal voices in R&I, which leads to relevant applications of science.

### Solutions to global challenges

The European Commission has formulated the ‘Global Challenges and European Industrial Competitiveness’ — one of the three main pillars of Horizon Europe. In order to support European policy, the EC requires R&I endeavors to contribute to finding solutions for these

Grand Challenges: 1) Health, 2) Culture, Creativity and Inclusive Society, 3) Civil Security for Society, 4) Digital, Industry and Space, 5) Climate, Energy and Mobility, and **6) Food, Bioeconomy, Natural Resources, Agriculture and Environment.**

## 2.3. Process dimensions

To reach the former outcomes, practicing a more responsible research and innovation requires that processes along the project are:




	<b>Diverse &amp; inclusive:</b> involve early a wide range of actors and publics in R&I practice, deliberation, and decision-making to yield more useful and higher quality knowledge. This strengthens democracy and broadens sources of expertise, disciplines and perspectives.
	<b>Anticipative &amp; reflective:</b> envision impacts and reflect on the underlying assumptions, values, and purposes to better understand how R&I shapes the future. This yields valuable insights and increases our capacity to act on what we know.
	<b>Open &amp; transparent:</b> communicate in a balanced, meaningful way methods, results, conclusions, and implications to enable public scrutiny and dialogue. This benefits the visibility and understanding of R&I
	<b>Responsive &amp; adaptive to change:</b> be able to modify modes of thought and behaviour, overarching organizational structures, in response to changing circumstances, knowledge, and perspectives. This aligns action with the needs expressed by stakeholders and publics.

Table 2 Process dimensions in RRI

## 2.4. The six policies agenda

The European Commission provided the six policies agenda to provide more concrete normative orientations, as shown below. These thematic elements are:

- 1) **Public engagement:** The process of R&I is collaborative and multiactor: all societal actors (researchers, citizens, policymakers, industry, educators, etc.) work together during the whole research and innovation process in order to align its outcomes to the values, needs and expectations of European society.
- 2) **Gender equality:** The deal of gender equality in RRI is a society where the representation of masculine and feminine values in research and innovation are balanced. Issues addressed by this policy agenda challenge people to think about the gendered nature of behaviour, discourse, products, technologies, environments, and knowledge.

- 3) **Science Education:** Focuses on (1) enhancing the current education process to better equip citizens with the necessary knowledge and skills so they can participate in research and innovation debates; and (2) increasing the number of researchers (promote scientific vocations).
- 4) **Open Access:** Addresses issues of accessibility to and ownership of scientific information. Free and earlier access to scientific work might improve the quality of scientific research and facilitate fast innovation, constructive collaborations among peers and productive dialogue with civil society.
- 5) **Ethics:** Focuses on (1) research integrity: the prevention of unacceptable research and research practices; and (2) science and society: the ethical acceptability of scientific and technological developments.
- 6) **Governance:** To reach futures that are both acceptable and desirable, governance arrangements have to (1) be robust and sufficiently adaptable to the unpredictable development of research and innovation (de facto governance); (2) be familiar enough to align with existing practices in research and innovation; (3) share responsibility and accountability among a large variety of actors and provide instruments to actually foster this shared responsibility.



Figure 2 A normative framework for RRI: the six policy agendas (source: <https://rri-tools.eu/>)

## 3. MONITORING RRI IN BRILIAN

### 3.1. Actions for Bio Innovation in BRILIAN

As a first step in the monitoring of RRI practices in BRILIAN, this section summarizes what we call “Research and Innovation” in the project. As an Innovation Action, and as described in the CBE’s call, BRILIAN RRI is to be applied along the group of Actions for the Bio Innovation (ABI) that will be validated in the project at both macro and micro level:



Figure 3 BRILIAN's general concept

#### ABIs at Macro-level

Looking for maximizing replicability and generating ad-hoc solutions and business models respectively and addressing all the actors and steps of the bio-based value chains. The Actions for the Bio-Innovation are described as:

- ABI 1. Forging robust rural bio-communities.
  - ABI1.1. Organizational and business model modules
  - ABI1.2. Capacity building and cooperation
  - ABI1.3. Interregional workshops and discussions
- ABI 2. Achieving circularity and sustainability.
  - ABI2.1. Environmental assessment (Life Cycle and Sustainability Assessment (LCSA))

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- ABI 2.2. Strengthening the resilience of farmlands
- ABI 2.3. Water management
- ABI 2.4. Policies and standards proposition
- ABI 3. Integration of short supply chains.
  - ABI3.1. Logistical module
  - ABI 3.2. Implementation of pre-treatment facilities
  - ABI 3.3. Real time monitoring of biomass conditions
- ABI 4. Production of value-added bioproducts.
  - ABI4.1. Vegetable oils valorization in Italy
  - ABI4.2. Oil Cake valorization in Italy
  - ABI4.3. Biomass of cardoon valorization in Italy
  - ABI4.4. Bioplastics from Starch in Spain
  - ABI4.5. Starch valorization for the cosmetic sector in Spain
  - ABI4.6. Vegan protein and supplements produced in Denmark
  - ABI4.7. Additives for adhesives produced in Denmark

#### ABIs at Micro-level

At micro level, the previous Actions for the Bio-Innovation will be particularized for 3 pilots located in Italy, Spain and Denmark, which have been carefully selected to cover a broad spectrum of social, technical and geographical characteristics. The final goal will be to validate 10 vertical bio-based value chains (2 in charge of the Spanish Pilot, 2 in charge of the Danish Pilot and 6 in charge of the Italian Pilot) for the production of added value bio-products. The responsible partners are working in close cooperation with local stakeholders from the three regions (Italy, Spain and Denmark) where BRILIAN ABIs will be implemented resulting in optimized business models for the proposed value chains. These models will be based on the production and management of agri-food feedstock and industrial food waste, that will be then used for the development of value-added bio-based products for the plastic, cosmetics, chemical, agriculture and food sectors.

OUTLINE OF THE THREE PILOTS			
	ITALY	SPAIN	DENMARK
<b>Climate</b>	Mediterranean	Continental	Oceanic
<b>Type of feedstock</b>	Agro-feedstock	Industrial food waste	Agro-feedstock
<b>By-product/waste</b>	Vegetable oil, residual biomass, oil cake	Organic wastes from potatoes processing	Rapeseed cake from rapeseed oil extraction
<b>Primary Producer</b>	Multiple cooperatives and individual farmers	Medium cooperative of farmers	Large cooperative of farmers



OUTLINE OF THE THREE PILOTS			
	ITALY	SPAIN	DENMARK
<b>Biorefinery</b>	Small scale ones as first stage and a large facility at the end	Pre-treatment facility and postprocessing units	Testing facilities to improve process
<b>Logistical</b>	Biorefineries <100km to field	Facility installed in the factory	Biorefineries >100km to field
<b>End-use</b>	Animal feed; edible mushroom substrate; bioplastics; bio-fertilizer; bio-herbicide; bio-lubricants;	Plastics and cosmetics	Vegan protein and adhesives

Table 3 Difference among the three BRILIAN pilots (Source: BRILIAN D5.5)

## 3.2. Project activities contributing to MoRRI

As part of its role as coordinator, CIRCE has provided the consortium with an overview of the innovations planned within the project, since the Kick-off Meeting (KoM), so all the partners have a common idea and approach of them. From this starting point, various project tasks, very interconnected, are being dedicated to monitor and align the project ABIs from different points of view including technical, environmental, regulatory, social and organizational, contributing to MoRRI practices:

Monitoring activities of BRILIAN's ABIs (MoRRI)		
Task	Monitoring role	Perspective
<b>Task 1.4 – Innovation management and RRI</b>	Establishment of MoRRI (Monitoring the evolution and benefits of RRI) indicators to monitor the project development in terms of 1) Ethics, 2) Public engagement, 3) Open Access, 4) Gender, 5) Governance and 6) Science education. The indicators will be obtained from the related monitoring project tasks.	Regulatory Technical Social Organizational Environmental
<b>Task 2.1– Barriers and opportunities for bioeconomy</b>	The task will identify, at a macro level, the technical, political and socio-economic barriers and opportunities for implementing bio-based cooperative business models, to facilitate the deployment of small-scale biorefineries in rural environments.	Regulatory Technical Social
<b>Task 2.2– Resources assessment and feedstock mobilisation</b>	Within this task, partners will carry out an analysis of the critical issues (T2.1) and a resources assessment and feedstock mobilisation within the three pilots.	Regulatory Technical Social
<b>Task 2.3– Bioeconomy market overview</b>	This task will identify the biobased products targeted in the project and markets, focusing on the economic factor	Social Organizational

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Monitoring activities of BRILIAN's ABIs (MoRRI)		
Task	Monitoring role	Perspective
<b>Task 2.4 –</b> <i>BRILIAN Social innovation</i>	BRILIAN will implement a value chain approach to ensure that all the concerned actors in the bio-based system, will be appropriately involved during the project lifetime	Social
<b>Task 3.1 –</b> <i>Definition of BRILIAN Learning and Evaluation Framework</i>	The BRILIAN model includes the definition of several KPIs to establish an evaluation framework. Those indicators will assess the social, economic, organizational, technical, and environmental impact of the activities foreseen at the three pilots throughout the project at pilot, project, and sector level.	Technical Social Organizational Environmental
<b>Task 3.2 –</b> <i>Assessment of the trade-offs and synergies of bioeconomy</i>	An assessment of the trade-offs and synergies of the environmental sustainability and circularity of the bio-based industry within the economy of the EU will be implemented, Based on the learning and evaluation framework (T3.1.)	Technical Social Organizational Environmental
<b>Task 3.3 –</b> <i>Policy and standards proposals</i>	This task will monitor what new legislative proposals are coming from countries and the EU commission, as well as identify gaps and provide guidelines about how bioeconomy must be addressed and biorefineries deployed in rural contexts from a regulatory perspective.	Regulatory
<b>Task 3.4 –</b> <i>Post sustainability and circularity assessment</i>	This task will allow the collection of data for the LCA/LSCA/LCC assessment. Among the main results to be provided in this task are a set of environmental, economic and social indicators that will be considered for the definition of Multicriteria hierarchy of the new value chains proposed with the business models of the pilots.	Social Organizational Environmental
<b>Task 5.1–</b> <i>Monitoring plan development and set-up of BRILIAN pilots</i>	T5.1. will be implemented in synergy with the three pilots considering their role in the project and promoting their replicability and monitoring several key targets (KT), defined at the proposal stage.	Technical
<b>Task 5.5–</b> <i>Pilots observatory</i>	The pilots' activities will be monitored, and Pilot leaders will provide to the learning evaluation framework to monitor the KPIs, including their feedback and main conclusions regarding implementation of the different solutions and the implemented business models.	Technical Social Organizational Environmental
<b>Task 6.1. –</b> <i>Replicability – strategic regional case studies</i>	This task will develop the replication study to identify new regions with great potential for BRILIAN expansion to generate site-specific action plans toward implementation of novel business models in the bioeconomy sector.	Social Organizational

Monitoring activities of BRILIAN's ABIs (MoRRI)		
Task	Monitoring role	Perspective
<b>Task 6.2– IPR and exploitation strategy</b>	The task will focus on the exploitation strategy of the project results. To ensure the consecution of the project impacts the tasks will develop the most adequate business models and the relevant CBAs.	Organizational
<b>Task 6.3– Regulatory and market readiness</b>	This task will elaborate policy recommendations at EU level aimed. It will monitor the existing legislation items of concern for the intended bioproducts, and the ability for farmers and small farming businesses to invest in innovative systems and Technologies.	Regulatory Social Organizational
<b>Task 7.1– Communication &amp; Dissemination Strategy</b>	This task will monitor the impact of the communication and dissemination activities developed along the project in terms of reaching the general public, the scientific community, policy makers, and other stakeholders.	Social
<b>Task 7.2 –C&amp;D actions</b>	This task will promote and monitor the different communication and dissemination activities to be led by the project partners.	Social Organizational
<b>Task 7.3 – Synergies with other projects</b>	This task will monitor the experiences and activities shared and exchanged with other relevant sister projects, that increase the impact of BRILIAN's results.	Technical
<b>Task 7.4 – Capacity building</b>	This task will develop and monitor the training material and methodology for increasing the knowledge transfer activities to local stakeholders on bioeconomy.	Technical Social

Table 4 BRILIAN's tasks contributing to Monitoring RRI

Therefore, BRILIAN MoRRIs indicators are to be compiled from the different project tasks and partners that are following Responsible practices in their Research and Innovation, as will be detailed along the present deliverable.

### 3.3. The 6 policies agenda in BRILIAN

Following the 6 policies agenda described in section 2.4, the present section summarizes the corresponding activities and monitoring indicators that have been identified at the moment of preparing this deliverable, that will be compiled along the project implementation and will help to assess the commitment of RRI practices.

#### 3.3.1. Public engagement



**Horizon Europe project must foster R&I processes that are collaborative and multi actor: all societal actors work together during the whole process in order to align its outcomes to the values, needs and expectations of society.**

BRILIAN has a strong social scope aimed at assessing and improving the public perception and acceptance of innovations related to Bioeconomy. The project aims to integrate social sciences and humanities (SSH) perspective into its research agenda, **empowering BRILIAN stakeholders to be properly informed and able to make decisions** based on the best available research and ethics. In particular, BRILIAN has a deep involvement of primary producers and the industry, in line with the European objective of “improving the primary producer’s engagement” through all the steps in the development of innovative and bio-based initiatives.

Dedicated tasks are being performed in WP2 to **assess social acceptance and engagement of citizens** (T2.4) to ensure the benefits BRILIAN can bring are fully understood and maximized. Within this task, **local workshops** will be organised, with particular emphasis in the role that citizens, producers and consumers can play in the project pilots, their potential **transition into active actors of the cooperative business models**, and the benefits associated to their engagement in cooperative biorefinery business models.

In addition, BRILIAN aims to implement EU-wide perspectives on public awareness and acceptance to support the establishment of cooperative bioeconomies. This way, the analysis and design of novel business models (WP4) in BRILIAN will be based on a **broad study of the key stakeholders in the value-added bioproducts obtention. BRILIAN consortium will integrate both primary producers and owners / providers of side streams** (NMVT through its suppliers, PATURPAT, DLG) **and brand owners and market actors** (NVMT, TECNO, CHIMAR) for a sustainable establishment of Business models (BMs) in rural areas. Based on case-specific, in-depth studies of biorefinery flows, the **mapping of roles and responsibilities of actors** across the case areas, and an analysis of the legislative, technical, and business environments central to governing the use and flows of bioproducts, **BRILIAN will identify the central enablers and inhibitors to forge robust multi-actor collaborations** to foster cooperative biorefinery business models adoption in the primary sector.

In addition, an **Advisory Board of Farmers (ABF) will be created** within the framework of the project (T2.4.) where knowledge, experience, expertise, support and networking will be facilitated. As an infrastructure to support those actions, interregional workshops will be held during the project to connect with other regions not directly involved in the project, particularly the **BIOEAST macro region**. For improving the public perception and acceptance in innovations related to Bioeconomy, the exploration of capacity building actions for members of the ABF and guests will take place.

**Social LCA** is planned in BRILIAN to: i) ascertain the societal impact of the project results (e.g., jobs creation); and ii) boost the use of bioeconomy as a catalyst for systemic change, which tackles the economic, social and environmental aspects of the EU Green Deal, seeking new ways of producing and consuming resources while respecting our planetary boundaries and moving away from a linear economy based on extensive use of fossil and mineral resources.

## Public engagement MoRRI Indicators

Public engagement MoRRI indicators			
Indicator	Task(s) related	Value reached by M12 (D1.5)	Target value by end of project (M48)
Number of primary producers and farmers engaged in the project	T5.5.	44	100
Nº of workshops to foster interregional cooperative frameworks	T2.4.	-	≥6
Nº of local workshops in the pilot's regions	T2.4.	-	3
Nº of contractual agreements put in place during the project	T4.2.	7	≥42
Nº of new direct jobs created during the project execution in relation to the pilots	T1.4. T5.5.	3	≥30
Nº of new indirect jobs created in relation to the pilots	T1.4. T5.5.	-	≥60
Nº of replication regions engaged through the BIOEAST initiative	T6.1.	-	≥6
Nº of stakeholders reached through the C&D activities	T7.1. T7.2	>1.000	≥15.000
Nº of long-term strategies for stakeholders	T7.3.	-	1
Nº of members of the ABF	T7.3.	≥11	≥30

Table 5 Public engagement MoRRI indicators

### 3.3.2. Gender equality



*Horizon Europe projects must promote gender balanced teams, ensuring gender balance in decision-making bodies, and considering always the gender dimension in R&I to improve the quality and social relevance of the results.*

BRILIAN expects gender to play a significant role in most aspects relevant to establishing technology, social and economic readiness levels in the new organisational models. **Differences in sustainability choices and use between genders will be assessed during the project** as well as the bottlenecks, enablers, and gaps affecting bio-based innovations (T2.1). This will later be used for the Business model methodology design in T4.1 and to tailor the business models of the project developed in T6.2 to the characteristics and casuistic of each gender, in case relevant differences are identified.

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Other aspects such as age, lifestyle and various socio-demographic aspects also influence the way bioeconomy actors participate in and guide their sustainability actions. In this sense, **gender balance will be a key selection criterion for the participants involved in the validation activities of the project.** As part of the process, the project will perform early releases of the various technological results and solutions for validation by the end-users through several iteration loops. Under such inclusiveness principles, BRILIAN will monitor and improve the level of gender impact and balance achieved in the project pilots.

Concerning the consortium organizations and the project team itself, in accordance with EU's Gender Equality Strategy, SDG-5 and SDG-10, BRILIAN has been conceived on a gender equality basis. **Partners are ensuring that tasks and responsibilities are divided among both genders in a balanced and non-discriminatory way.** For that, the following commitments are being followed by all the project partners to ensure that gender dimension is fully considered and integrated within BRILIAN activities:

- Be fully aware of the Gender Equality in Horizon Europe guidelines,
- Consider gender dimension in all research activities,
- Foster gender equality,
- Where possible, apply the previous by counting on an updated **Plan for Gender Equality** in their organizations, applicable to BRILIAN activities

In this sense, gender balance is a key selection criterion for the participants involved in the research and validation activities of the project, to avoid disparity. Partners ensure that tasks and responsibilities are divided among both genders in a balanced and non-discriminatory way by 1) **Promoting a balanced participation in the project activities,** 2) Organizing day-to-day project activities in such way that **compatibility between professional and personal activities is guaranteed** and 3) Promoting women's access to leadership positions in the project.

Gender MoRRI indicators			
Indicator	Task(s) related	Value reached by M12 (D1.5)	Target value by end of project (M48)
% of women involved in the project public activities (trainings, workshops, events)	T7.1. T7.2 T7.3	60%	≥50%
% of leading roles occupied by women in the consortium	T1.4.	57% (4/7)	≥50%
% of women involved in the project with professional category of researcher	T1.4.	55% (26/47)	≥50%

Gender MoRRI indicators			
Indicator	Task(s) related	Value reached by M12 (D1.5)	Target value by end of project (M48)
% of women being part of the whole Brilian's working team	T1.4.	72% (38/53)	≥50%
Number of project partners having a GEP	T1.4.	6/13	6/13

Table 6 Gender MoRRI indicators

### 3.3.3. Science education



*Horizon Europe projects must promote actions that (1) enhance the current education process to better equip citizens with the necessary knowledge and skills so they can participate in R&I debates; and (2) increase the number of researchers (promote scientific vocations).*

Aligned with the European Skills agenda 2030, **BRILIAN will organize regional rooms and education and training days to strengthen the foundation of basic skills for rural regions inhabitants.** Special attention will be placed in the provision of education and skills to understand and build knowledge on bioeconomy. Additional campaigns will be aimed at Vocational Educational Training (VET) for young people as an inducement to remain in their home rural territory.

With these aims, a dedicated task has been planned in the project (T7.4.) to develop the **training material and methodology for increasing the knowledge transfer activities to local stakeholders on bioeconomy.** Prior to the training programme development, the already-existing national and regional knowledge reservoirs will be analysed. Then, customized training material for the actors of the bioeconomy value chain will be developed to provide them with the necessary skills and technical knowledge to trigger long-term acceptance of bioeconomy strategies. On the one hand, to support farmers, biorefinery operators and general society in the making of better-informed decisions regarding bioeconomy and, on the other hand, to enhance consumers to choose bioproducts instead of traditional fossil-based products.

Science Education MoRRI indicators			
Indicator	Task(s) related	Value reached by M12 (D1.5)	Target value by end of project (M48)
Nº of training sessions implemented	T7.4.	-	≥6
Nª of attendees to the -to-the face-to-face trainings	T7.4.	-	≥40
Nº of capacity modules developed	T7.4.	-	5
Nª webinars views	T7.4.	-	100

Science Education MoRRI indicators			
Indicator	Task(s) related	Value reached by M12 (D1.5)	Target value by end of project (M48)
Nº of cross-visits promoted	T7.4.	-	3
Nº of players to BRILIAN's Quiz Game	T7.2.	-	>100
Nº of general conferences and exhibitions trade fairs attended, aligned or link to the Bioeconomy	T7.2.	6	8
Nº of participants on BRILIAN's Info day	T7.2	-	>30

Table 7 Science Education MoRRI indicators

### 3.3.4. Open Access



*Horizon Europe projects must address issues of accessibility to and ownership of scientific information. Free and earlier access to scientific work might improve the quality of scientific research and facilitate fast innovation, constructive collaborations among peers, and productive dialogue with civil society.*

The Open Access importance has already been deeply taken into account within the deliverable Data Management Plan (D1.3) under the FAIR principles (Findability, Accessibility, Interoperability, and Reusability).

Following accessibility principles in BRILIAN project, the consortium will define which data will be made openly available and, if some datasets remain closed, the reasons for not giving access will be provided. When possible, the outputs of the project (data, reports, publications, etc.) will be available in Open Access repositories either through preregistrations or through publications in Open repositories or Journals. A dedicated budget for open access scientific publications is reserved to this end. Open access clauses appear in both the Consortium Agreement (CA) and the Grant Agreement (GA), ensuring the consortium's commitment to open publications of project's results. To comply with the open access principles, BRILIAN will apply a hybrid of gold and green access schemes. Choosing the scheme will be determined by the project coordinator, the dissemination lead, and the partners concerned on a case-by-case basis.

For every publication, no later than 6 months after the publication is released, a machine-readable electronic copy of the published manuscript will be made available on the website by FOOD+i, as a reproduction or as a direct link. Furthermore, research data and bibliographic metadata needed to validate the published results will be stored in the respective area of the repository. Finally, and to make project knowledge publicly available, FOOD+i as Communications Manager will contact and exploit EC open access portals and tools (e.g.,



OpenAIRE). With regards to open access publications, the recently launched EC’s Open Research Europe publishing platform will be favored.

Moreover, for making its research data FAIR, BRILIAN partners are encouraged to use the free ZENODO repository. A BRILIAN community has been established on the ZENODO website (<https://zenodo.org/communities/brilian-101112436>), where all public datasets and deliverables, as well as possible scientific publications with green open access, will be uploaded.

Open Access MoRRI indicators			
Indicator	Task(s) related	Value reached by M12 (D1.5)	Target value by end of project (M48)
Scientific Publications in OA journals	T1.4. T7.2	-	6
Materials updates in BRILIAN’s Zenodo community	T1.4.	-	30

Table 8 Open Access MoRRI indicators

### 3.3.5. Ethics



*Horizon Europe projects must address (1) research integrity: the prevention of unacceptable research and research practices; and (2) science and society: the ethical acceptability of scientific and technological developments.*

The ethical dimension is a transversal topic along BRILIAN’s objectives and methodology. The project promotes respect for people and for human dignity and fair distribution of the benefits and burden of research, protecting the values, rights and interests of the research participants. Where needed, the corresponding ethics approvals are being released before starting any activity, to collect the free and fully informed consent of the research participants. Regarding ethical needs for technology solutions to security and privacy, the Consortium is committed to communicate and enforce participants’ data protection as a transversal policy. Legislation such as the EU’s General Data Protection Regulation (GDPR) (EU) 2016/679 for the control and protection of personal information provides the principles on which the handling of personal data will adhere to. Additionally, the wider understanding of privacy, such as those contained within the European Convention on Human Rights (Article 8), the EU Charter of Fundamental Rights (Articles 7 & 8) and related case law has also been considered and respected within the scope of the project, including definitions of privacy, and their relation to the security of information technology systems, as outlined within the ISO standard ISO/IEC 29134:2017.

In general terms, **it is not expected (i) the involvement of human participants for SSH studies, (ii) the use of digital tools based on AI (iii) The collection, processing and sharing of data.** Nevertheless, should it be the case, data will be analyzed under the principles of the General

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Data Protection Regulation (GDPR) and the proposed Data Governance Act. This has been considered in the **Data Management Plan (D1.3)**, which states in detail the process and mechanisms to safeguard security and privacy requirements imposed in the project's data collection activities. Such processes have been designed towards ensuring transparency on all data collection and management practices performed by the project and notify all stakeholders that act as data owners and producers, as well as, safeguarding data protection, security and privacy issues through a well-established ethics management policy enforced by advanced sovereignty and security technologies as well as data management practices in the project's field of research.

Ethics MoRRI indicators			
Indicator	Task(s) related	Value reached by M12 (D1.5)	Target value by end of project (M48)
Development of a DMP	T1.3.	1	3
Number of forms/ authorizations from external participants on GDPR	All WP7 T1.4.	100	≥250

Table 9 Ethics MoRRI indicators

### 3.3.6. Governance



*Horizon Europe projects must arrange policies that lead to acceptable and desirable futures to (1) be robust and adaptable to the unpredictable development of R&I (de facto governance); (2) be familiar enough to align with existing practices in R&I; (3) share responsibility and accountability among all actors; and (4) provide governance instruments to actually foster this shared responsibility.*

Policy makers and public bodies are key stakeholders in charge of developing and fostering novel governance models and public procurement. Hence, EC, regional, local authorities and permitting bodies with competences in the field of BRILIAN project are the targeted audience in several dissemination activities. The key messages to send them are the successful use cases and lessons learnt in BRILIAN and how new regulations can ease the way to new add value bioproducts.

In addition, BRILIAN also finds it crucial to identify, assess, and disseminate regulatory aspects at EU or regional levels, and standardization issues which could impact the project. To this aim, a dedicated task of the project (T3.3.) is focused on the **development of guidelines about how bioeconomy must be addressed and biorefineries deployed in rural contexts from a regulatory perspective**. During the project, **partners will identify the most noticeable gaps and bottlenecks in bioeconomy policy development**, aiming at a balanced distribution of benefits from bio-based innovation across actors of the value chain, member states and regions. Aligned

with the knowledge4policy, a **bioeconomy policy assessment leading to the understanding of standards for the bio-industry will be developed to refine business models**. This will be possible by taking into account the current political context and it will support the establishment of roadmaps towards a standardized and certified environment for new businesses. Additionally, **recommendations on regional and national regulations will be provided** to establish a pan-European framework that will even the competitiveness of all countries. With all that, BRILIAN will deliver proposals to policy makers including recommendations, roadmaps and standards to make business models feasible, through the organization of policy workshops and participation in public consultations.

Governance MoRRI indicators			
Indicator	Task(s) related	Value reached by M12 (D1.5)	Target value by end of project (M48)
Nº of policy bulletins developed	T3.3.	1	6
Nº of workshops organized with policy makers	T3.3.	1	4
Nº of Policy makers reached through the project workshops	T3.3.	3	15
Nº policy and regulatory, Technical, market and environmental barriers identified and reported	T3.3.	9	≥30
Nº of recommendations for standardization and certification	T3.3.	-	≥10

Table 10 Governance MoRRI indicators

## 4. CONCLUSIONS

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The present document serves as the first version of the Responsible Research and Innovation (RRI) report within the BRILIAN project, Deliverable 1.5., with a clear objective outlined to guide the consortium in RRI practices throughout the project implementation. The work is being done within the framework of *task 1.4. Innovation management and Responsible Research and Innovation*, led by CIRCE as project coordinator.

The RRI practices outlined in the document are aligned with the European Commission's framework of Responsible Research and Innovation, focusing on six key policies: Ethics, Public engagement, Open Access, Gender, Governance, and Science education. For each of the six policies, a summary of how BRILIAN will contribute to each has been provided, together with a preliminary list of indicators that will allow the Monitoring of the Responsible Research and Innovation (MoRRI) in the project.

By the time this report is submitted to the CBE-JU, the project has not yet achieved relevant results concerning the technical activities, as mostly preparatory activities, designs, and sectorial analysis have been the focus for the first year of work. Due to this reasons, MoRRI indicators concerning public engagement, governance, open access and science education are to be increased along the coming project months, when workshops, publications, and capacity building activities will be enhanced to promote the project results as they are obtained. On the other hand, ethics and gender agenda have been applicable and provided monitoring results from the very beginning, with a worth mentioning achievement of the gender balance targets in the BRILIAN team from the start of the project.

This document will be updated in May 2026 with the creation of D1.12. RRI Progress Report.

## 5. DEVIATIONS

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This report has been provided according to timeline with no major deviations

## 6. REFERENCES

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