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Thematic briefs to regional bioeconomy actors

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ABBREVIATIONS

RIS3	Research and Innovation Strategies for Smart Specialisation
CAP	Common agricultural policy
BIT	Bioeconomy in Italy
EU	European Union
JRC	Joint Research Centre
SMEs	Small and Medium-sized Enterprises
WP	Work package
PNRR	Piano Nazionale di Ripresa e Resilienza

Executive Summary

This deliverable has been prepared under Task 5.5 “Recommendations to regional bioeconomy actors” in the Work package 5 (WP5) – Synthesis and recommendations. The objective of Task 5.5 was to support regional bioeconomy actors, including regional authorities, development agencies, producer organisations, and research centres, with recommendations derived from the SUSTCERT4BIOBASED project findings and insights gained from the analysis of national and regional strategies, such as Spain’s Bioeconomy Strategy 2030, Italy’s BIT II, and Germany’s National Bioeconomy Strategy.

Drawing on the experience of partners from previous relevant H2020/BBI projects such as POWER4BIO and CELEBIO where extensive engagement with regional actors was done, the selected countries/regions were Spain, the Netherlands, Italy, Germany, and Hungary.

The analysis conducted under this task examines key elements such as labelling, certification schemes, traceability and farm-level assurance systems to identify best practices and opportunities for improvement for regional policymakers and value chain actors such as industrial stakeholders aiming to strengthen sustainability governance in their bioeconomy strategies.

To ensure the practical applicability of the findings, regional workshops and webinars were organised with stakeholders, facilitating knowledge exchange and assessing the feasibility of integrating these recommendations into regional bioeconomy strategies.

Based on this analysis, the deliverable proposes targeted recommendations for regional actors to:

- Promote harmonised sustainability certification schemes that are accessible to SMEs and adapted to regional value chains.
- Invest in traceability and digital monitoring tools to improve supply chain transparency and compliance readiness.
- Foster interregional collaboration to share best practices and jointly address common challenges in sustainability assurance.
- Leverage regional policy instruments such as Research and Innovation Strategies for Smart Specialisation (RIS3) strategies and Common Agricultural Policy (CAP) funds to incentivise uptake of certification and labelling schemes among local bioeconomy actors.

These recommendations aim to support regions in strengthening their bioeconomy strategies by embedding robust, credible, and efficient sustainability assurance mechanisms that can enhance market access, regulatory alignment, and stakeholder trust.

1. Introduction

This deliverable has been prepared under Task 5.5 “Recommendations to regional bioeconomy actors” in the WP5 – Synthesis and recommendations. The aim of WP5 is to review and analyse the results generated in the preceding WPs and employing them to extract recommendations and guidance for the implementation of efficient and robust sustainability standards and certifications.

This report presents the results of the analysis conducted to develop recommendations aimed at supporting regional bioeconomy actors. These actors include public and private entities operating at the regional level that play a role in shaping, implementing, or supporting bioeconomy-related policies and value chains, such as regional authorities, development agencies, producer organisations, and research centres. Although the analysis focused on five countries (Spain, the Netherlands, Italy, Germany, and Hungary), it also considered relevant regional-level strategies and initiatives within these national contexts, such as those developed in Gelderland (Netherlands), Catalonia (Spain), and other regions actively engaged in bioeconomy planning.

The analysis focused on key elements, including labelling, certification schemes, traceability, and farm-level assurance systems, to identify best practices and potential areas for improvement. To ensure a robust and practical set of recommendations, close engagement with regional stakeholders was carried out through workshops and webinars, facilitating knowledge exchange and assessing the feasibility of integrating these recommendations into regional bioeconomy strategies.

The deliverable is structured as follows:

- **Chapter 2** describes the methodology applied, including the selection process for the countries/regions analysed and the approach used to engage with regional stakeholders.
- **Chapter 3** presents the key findings from the assessment of regional strategies, highlighting challenges, opportunities, and best practices.
- **Chapter 4** outlines the set of recommendations derived from the analysis, structured in thematic briefs, to serve as guidance for regional policymakers and industrial stakeholders.
- **Chapter 5** provides the conclusions of the work carried out.

2. Methodology

To gather insights from regional stakeholders regarding the integration of sustainability certification schemes, traceability tools, and ecolabels into bioeconomy strategies, a structured approach was adopted. The objective was to ensure both breadth and depth in capturing regional policy dynamics, practical challenges, and stakeholder priorities.

Five Eu regions (Spain, the Netherlands, Italy, Germany, and Hungary) were selected to ensure both geographical diversity and representativeness of different levels of bioeconomy maturity and policy engagement. Selection was based on the consortium's previous collaborations under EU-funded projects (notably POWER4BIO and CELEBIO), which enabled access to well-established stakeholder networks.

Desk research and questionnaire

Initial research involved a detailed review of existing national and regional bioeconomy strategies, policy frameworks, sustainability roadmaps, and implementation plans. Particular attention was given to the treatment of sustainability certification systems, traceability mechanisms, and ecolabelling within these frameworks. This provided baseline knowledge for tailoring stakeholder engagement tools and contextualising results.

To gather company-level perspectives, a structured questionnaire was designed targeting companies active in bio-based sectors such as agri-food, forestry, bioplastics, and bio-based chemicals. The questionnaire is structured as:

- Awareness and uptake of certification schemes;
- Perceived benefits and barriers;
- Use of traceability or monitoring tools;
- Suggestions for improving current systems.

The full questionnaire is provided in Appendix 1. This questionnaire was applied using a mixed-mode approach:

- In some cases, it was shared as a written survey (self-completed by the respondent);
- In others, it served as the basis for a structured interview, conducted directly by project partners via video call, allowing for clarification and elaboration of answers.

A total of 60 questionnaires were distributed, resulting in 33 collected responses. Of these, 22 participants completed the surveys independently, while the remaining 11 responses were obtained through structured interviews.

Workshops and alignment with Task 5.1

To complement the company-level data, region-specific multi-stakeholder workshops were held. These workshops brought together public authorities, industry representatives, development agencies, and researchers to:

- Validate preliminary findings from the company survey,
- Identify regional priorities, barriers, and opportunities,
- Co-develop and test the feasibility of proposed recommendations.

In addition to the primary data collected through stakeholder interviews and regional workshops, this deliverable builds on the findings consolidated under Task 5.1, which served as a key input for shaping the recommendations developed in Task 5.5. The DLV 5.1 synthesised results from the project’s earlier work packages carried out under SUSTCERT4BIOBASED to produce a structured

set of preliminary recommendations. The outputs of Task 5.1 were instrumental in designing the scope and focus of the surveys and workshops conducted under Task 5.5, ensuring continuity between the project's diagnostic work and the formulation of practical, stakeholder-informed guidance.

Results analysis and dissemination

After completing data collection, the responses were categorised and analysed to identify recurring themes, challenges, and opportunities. A cross-regional comparative analysis was conducted to detect both shared patterns and region-specific features.

The results informed the development of five region-specific thematic briefs, grounding the recommendations in local realities and supporting the strategic objectives of the SUSTCERT4BIOBASED project.

Finally, dedicated regional webinars were organised to validate the recommendations. Stakeholder feedback gathered in these sessions was used to refine and ensure the relevance, feasibility, and applicability of the proposed guidance at the territorial level.

3. Overview of regional bioeconomy strategies

3.1 Spain

Spain's *Bioeconomy Strategy: Horizon 2030* establishes a comprehensive framework to drive the sustainable production and use of biological resources, strengthen competitiveness, support rural development, and foster technological innovation. The strategy was developed through a collaborative process involving public administrations, research institutions, private sector actors, and civil society, and it integrates feedback collected via public consultations [1].

The Spanish bioeconomy is defined broadly to include the production of food, forest products, industrial bioproducts, bioenergy, and services linked to rural environments, all based on biological resources and sustainable management principles.

The sectors addressed by the strategy include agri-food (agriculture, livestock, fisheries, aquaculture, and food processing and marketing), as well as forestry, industrial bioproducts, biomass-based bioenergy, and services related to rural environments.

According to the Joint Research Centre (JRC), the bioeconomy sector in Spain generated a turnover of €260 billion in 2021 (10% of the EU-27 total), with €75 billion in value added (10% of the EU-27) and employing 1.47 million people (9% of the EU-27 total) [2].

The Strategy sets **two types of objectives** [1]:

- Strategic objectives:
  - Improve competitiveness and internationalisation of Spanish companies in the bioeconomy sectors.
  - Maintain bioeconomy as a core component of Spain's economy, promoting it as a strategic innovation area internationally.
  - Contribute to the development of a sustainable, innovative bioeconomy by 2030.
- Operational objectives:
  - Fostering research and innovation,
  - Promoting internationalisation, enhancing coordination between actors, integrating sustainability into production systems.
  - Boosting the creation of new biobased markets.

The measures for the development of the bioeconomy are organised under **five major strategic lines** rather than isolated actions [1]:

- Promoting innovation and knowledge transfer:
  - Strengthening public and private research, encouraging public-private partnerships, and facilitating the application of scientific knowledge to new technologies and biobased industries.
- Enhancing the socio-political and administrative framework:
  - Establishing coordination mechanisms such as a Spanish Bioeconomy Observatory and promoting dialogue among public authorities, research organisations, industries, and civil society.
- Developing competitive biobased markets:
  - Stimulating demand for biobased products through public procurement, eco-labelling, sustainability certification systems, and facilitating market access by removing regulatory barriers.
- Stimulating demand for new biobased products:

    - Supporting measures such as innovative public procurement and consumer awareness campaigns to encourage the uptake of biobased products.
- Expanding and promoting the bioeconomy:
    - Disseminating successful case studies and best practices, promoting interregional cooperation, and linking Spanish initiatives with European and international bioeconomy strategies.

At the regional level, four autonomous communities (Andalusia, Castilla y León, Catalonia, and the Basque Country) have developed their own bioeconomy or circular economy strategies. Other regions are in the process of drafting or considering similar strategies. These regional initiatives are essential to ensuring that the national strategy is effectively implemented and adapted to local contexts [3–7].

Spain is also actively engaged in bioeconomy innovation projects, both at national and European levels. These include initiatives funded through Horizon 2020, Horizon Europe, and the BBI-JU/CBE-JU, in which Spanish entities play a leading role. The bioeconomy is also addressed through various support mechanisms under Spain's Recovery, Transformation and Resilience Plan (PRTR), particularly those managed by the Ministry for the Ecological Transition and Demographic Challenge, the Ministry of Science, Innovation and Universities, and the Ministry of Agriculture, Fisheries and Food (MAPA) [3].

The strategy emphasises the importance of cross-sectoral integration and cooperation among agricultural, forestry, marine, biotechnological, chemical, and energy sectors. Special attention is given to promoting circular economy approaches, enhancing the value of waste and residues, and ensuring sustainability across value chains [1,3].

Financial instruments such as RIS3 strategies, CAP funds, and national innovation programs are identified as key enablers for supporting bioeconomy projects. Spain's commitment is further supported through initiatives like the PERTE Agroalimentario (a strategic public-private partnership aimed at modernising and digitalising the agri-food sector) and integration with European strategies for circular economy and climate action [1].

In summary, Spain's Bioeconomy Strategy offers a cohesive and dynamic framework that aligns with EU policies and global sustainability objectives, providing strong institutional support for the broader deployment of sustainability certification, traceability, and labelling initiatives.

3.2 Netherlands

The Dutch government recognises the utilisation of biological feedstocks as indispensable in the transition to a climate-neutral, circular economy. Biological resources contribute to a future-proof business model for Dutch businesses (including farmers), enabling them to take a frontrunner position in growing markets.

Important conditions for the use of biological feedstocks are that these are *directed towards high-value applications* and are *produced sustainably*, in order to minimise adverse environmental impacts. To this end, a regulatory sustainability framework for the use of biological feedstocks is currently being developed [8].

This framework builds on a report by the Dutch Socio-Economic Council (SER) [9], which distinguishes between three types of applications for biological raw materials, each to be addressed with its own set of policy instruments:

- *Low-value applications*: certain energy applications for which other sustainable alternatives exist or will become available in the new future (e.g., low temperature heat, light road

transport and electricity). These applications do not fit in the desired end perspective, and policy will focus on phasing these out.

- *Bridging applications*: energy applications in hard-to-abate sectors, e.g., high temperature heat, air and maritime transport, and heavy road transport. Here, biological feedstocks can be applied temporarily, facilitating the transition to a circular bioeconomy on the short term, while not being a long-term solution.
- *High-value applications*: non-energy, material applications (e.g., chemicals and construction materials). In this category, policy interventions will focus on scaling up the use of biological feedstocks.

In December 2024, it was announced that the Dutch framework will be aligned the with sustainability requirements in the Renewable Energy Directive (RED) III [8]. Aim is to ensure a robust, effective system is in place for guaranteeing the sustainability performance of biological feedstocks and biobased products derived from these. The sustainability criteria will be applicable to all relevant sectors, starting with subsidies and regulated flows in scope of the framework: energy, construction and chemicals. At a later stage, it could be expanded to other sectors as well. Compliance with the criteria will be demonstrated with sustainability certification, complemented by public supervision [8].

The **key principles guiding the Dutch bioeconomy policy are** Haga clic o pulse aquí para escribir texto.:

- Cascading use of biomass:

Prioritising high-value applications of biomass before its use for energy production (i.e., a bridging or low-value application under the Dutch regulatory sustainability framework for biologiscal feedstocks), ensuring optimal value creation and resource efficiency [8].

- Circular economy integration:

Promoting closed-loop systems where biobased materials and products are reused, recycled, and valorised throughout their life cycle. The Dutch National Circular Economy Program (NCEP) 2023-2030 seeks to drive the transition to full circularity by 2050, with special attention for a reducing the raw material use, increasing the percentage of renewable raw materials, and extending the lifespan of products [10].

- Sustainability and certification:

Ensuring that biomass production and use meet strict sustainability criteria, including biodiversity protection, soil and water conservation, and social standards. The government highlights the importance of developing internationally recognised sustainability certification schemes and eco-labelling. Concretely, certification will be used to ensure compliance of operators with the Dutch regulatory sustainability framework for biological resources, as described above [8].

- Innovation and knowledge development:

Strengthening research, development, and demonstration projects focused on biorefinery technologies, advanced biobased materials, and green chemistry solutions. This is driven by the Dutch Knowledge and Innovation Agenda's (KIA) on Agriculture, Water and Food. In the context of this agenda, several Multi-Year Mission-Driven Innovation Programs (MMIPs) are ongoing and aim to develop a solid knowledge base in the transition to a circular (bio)economy [11]. In particular, Mission 2 of mentioned KIA focuses on the production of biological raw materials to serve as an alternative to fossil or otherwise harmful raw materials.

- Market development and public procurement:

Stimulating demand for biobased products through public procurement strategies, promoting green public spending as a catalyst for market expansion.

- International cooperation:

Positioning the Netherlands as a European and global leader in the sustainable bioeconomy through active engagement in EU initiatives and international partnerships.

The **Dutch regulatory sustainability framework for biological feedstocks** is closely related to broader national agendas, including the Dutch Climate Agreement [12], the National Circular Economy Strategy [10], and the National Plan Energy System [13]. Coordination across ministries, primarily the Ministry of Climate Policy and Green Growth, the Ministry of Agriculture, Fisheries, Food Security and Nature, and the Ministry of Infrastructure and Water Management, contributes to ensuring an integrated and cross-sectoral policy framework.

The Netherlands places a strong emphasis on regional innovation ecosystems, such as the Delta Climate Center (DCC) in the south-west of the country [14], and Biological Feedstocks and Sustainable Energy East Netherlands (BEON) in the east [15]. These clusters bring together businesses, knowledge institutions, and local governments to foster pilot projects, share knowledge, and accelerate the commercialisation of biobased technologies. Public-private cooperation is seen as essential for building robust bioeconomy value chains Haga clic o pulse aquí para escribir texto..

The country also hosts a vibrant industrial and entrepreneurial landscape that drives bioeconomy development. Several of the world's leading bioeconomy-active companies are based in the Netherlands. Prominent examples of companies active in research and development in the sphere of the bioeconomy include DSM (biobased chemicals) and Avantium (innovative bioplastics), while the agri-food cooperative Royal Cosun plays a pivotal role in valorising sugar and starch side streams. Waste and wastewater management also serve as significant enablers of the Dutch bioeconomy, with companies like HoSt advancing biogas and biomass technologiesHaga clic o pulse aquí para escribir texto..

As reported by the JRC, the Netherlands represented nearly 6% of the European Union's bioeconomy revenue in 2021, contributing to added value and job creation across various sectors [2]. To maintain its position in terms of innovation leadership, the country supports a range of targeted financial instruments for biobased SMEs and start-ups. These include the TKI Green Chemistry and Circularity (supporting biorefinery and conversion technologies), as well as the Demonstration Climate and Energy Innovation (DEI+) subsidy [16] and Energy and Climate Research and Development (EKOO) [17], coordinated by the Dutch Entreprise Agency.

3.3 Italy

Italy's national approach to the bioeconomy is framed by the "Bioeconomy in Italy (BIT II)" strategy, aiming to foster sustainable economic development by fully leveraging biological resources, promoting circularity, and enhancing regional and national competitiveness [10].

The strategic objectives of BIT II focus on [10]:

- Improving sustainable production across sectors, enhancing the valorisation of national terrestrial and marine biodiversity, ecosystem services, and encouraging circularity through locally rooted and longer value chains.
- Promoting investment in research, innovation, education, and communication to foster new businesses (e.g., startups and spin-offs) and strengthen public-private partnerships.

- Improving coordination between regional, national, and EU levels, creating synergies with wider initiatives like the National Smart Specialization Strategy and the National Strategy for Sustainable Development.
- Supporting territorial regeneration, including the revitalization of marginal land and the conversion of de-industrialized areas into biorefineries and innovation centres.
- Expanding the bioeconomy in the Mediterranean area, aligning with initiatives such as BLUEMED and PRIMA to ensure sustainable resource use and socio-economic stability.

In recent years, the implementation of BIT II has been reinforced by the National Recovery and Resilience Plan (Piano Nazionale di Ripresa e Resilienza – PNRR), which mobilises significant investments in green infrastructure, agroecological innovation, digitalisation, and biobased value chains. These actions contribute to accelerating Italy's alignment with the EU Green Deal and the objectives of the updated EU Bioeconomy Strategy.

BIT II emphasises the integration of sustainability and circular economy principles. It highlights the importance of cascading the use of biomass, promoting biowaste valorisation, and supporting marine bioeconomy activities such as sustainable aquaculture and exploitation of marine bioproducts [10].

Particular emphasis is placed on biobased industries, where Italy plays a leading role in Europe, especially in sectors such as bioplastics, biobased chemicals, and advanced biofuels. The strategy underlines the importance of industrial reconversion projects and flagship biorefineries, many recognised under the BBI Joint Undertaking [10].

The Italian regions are key enablers of bioeconomy development. Regional action is encouraged through distributed business models, interregional cooperation, and the establishment of modular bioeconomy networks that capitalise on the specificity of local biological resources and skills [10].

Furthermore, BIT II emphasises the need for sustainability standards, certifications, and labels to ensure the credibility and market competitiveness of biobased products. It advocates improving the regulatory framework for waste valorisation (especially the "end-of-waste" criteria) and supports public procurement policies that favour biobased products [10].

The strategy is accompanied by a specific R&I programme and a roadmap for its implementation and monitoring, ensuring a coordinated and measurable progression towards the 2030 goals of increasing the performance of the Italian bioeconomy by 15% [10].

The Italian bioeconomy is among the most developed in Europe, integrating a broad spectrum of sectors including agriculture, forestry, fisheries, food and beverage, biobased industries, the marine bioeconomy, and parts of the chemical, energy, and pharmaceutical industries. According to the analysis conducted by the JRC , it has been determined that Italy achieved a turnover of €345 billion in activities directly associated with the bioeconomy sector in 2021, which represents 14% of the total. The sector employs nearly 1.9 million people, accounting for over 11% of total EU bioeconomy employment [2].

3.4 Germany

Germany's National Bioeconomy Strategy, adopted in 2020, reflects a deeply integrated and forward-looking approach to sustainable development. Rooted in earlier policy frameworks such as the National Research Strategy "BioEconomy 2030" and the National Policy Strategy on Bioeconomy, the current strategy presents a cohesive and expanded vision aimed at embedding bioeconomic principles across all sectors of society and the economy [11].

At the core of the German strategy are two guiding principles: the responsible use of biological knowledge and innovation to support a climate-neutral future, and the circular, efficient use of

biogenic raw materials. The strategy defines the bioeconomy as the production, exploitation, and use of biological resources, processes, and systems to provide goods and services in a sustainable economic framework. It is explicitly aligned with the Sustainable Development Goals (SDGs) of the 2030 Agenda, and Germany views bioeconomy as a cornerstone for achieving these global objectives [11].

Six strategic goal's structure Germany's policy direction [11]:

- Develop bioeconomy solutions aligned with the SDGs
- Recognize and harness bioeconomic potential within ecological boundaries
- Enhance and apply biological knowledge for innovation
- Establish a sustainable raw material base for industry
- Promote Germany as a hub for bioeconomy innovation
- Involve society while strengthening national and international cooperation.

Implementation measures are broad and multi-sectoral. They encompass funding for interdisciplinary R&D, initiatives for sustainability monitoring, and frameworks for policy coherence at federal and regional level. Key areas of action include reducing pressure on land-use, sustainable biomass production, promoting biobased supply chains, supporting rural development, and deploying digital technologies for enhanced traceability and resource efficiency [11].

In particular, the German approach recognises the complexity of aligning ecological, economic, and social objectives. The strategy emphasizes that sustainability must be rigorously assessed, and that circularity and biodiversity protection are non-negotiable pillars of a successful bioeconomy. Particular attention is given to potential trade-offs and unintended impacts, reinforcing a commitment to systemic, science-based policy development [11].

Germany's leadership in bioeconomy policy is further supported by international engagement, as well as internal monitoring and stakeholder dialogue. The strategy aims not only to transform domestic value chains but also to set global benchmarks for sustainable, resilient, and innovation-driven biobased economies [11].

Germany is recognised as an international pioneer in bioeconomy policy, with dedicated strategies and funding frameworks in place since the 1990s. The German bioeconomy spans key sectors such as agriculture, chemical and construction industries, energy, food, textiles, and consumer goods. Its strength lies not only in industrial innovation, but also in its academic infrastructure, with over 800 universities and research centres involved in interdisciplinary bioeconomy research and development [12].

As reported by the JRC, Germany represented the most substantial portion of the European Union's bioeconomy in the year 2021, producing a turnover of €493 billion, which constitutes 19% of the total for the EU-27, while also employing more than 2 million individuals [2].

3.5 Hungary

The Hungarian bioeconomy is an important and growing sector, deeply rooted in agriculture, forestry, food processing, and related industries. With its abundant biomass resources, mostly of agricultural and forestry origin, the country has great potential to expand the use of renewable biological materials to produce energy, materials and high-value biobased products.

Although Hungary does not yet have a fully developed national bioeconomy strategy, efforts are underway to formalise one under the leadership of the Ministry of Agriculture. In the meantime, various policy frameworks relevant to the bioeconomy are spread across energy, rural development,

innovation, and environmental strategies. This fragmented governance structure has made it difficult to build a unified national vision, although it has also driven several exploratory and cross-sectoral initiatives [13].

The country's new bioeconomy priorities reflect a growing focus on climate resilience, sustainable biomass use, circularity, and economic diversification. A key emphasis is placed on the cascading use of resources, the valorisation of agricultural and food industry residues, and the establishment of biorefineries as regional anchors for innovation and rural development. Efforts are also being made to integrate circular economy principles and align bioeconomy policies with national goals for decarbonisation and strategic autonomy in key sectors such as food, energy, and materials [14,15].

In the absence of formal regional bioeconomy strategies—currently not allowed under Hungarian administrative law—regions such as the Southern Great Plain have demonstrated leadership through bottom-up planning and stakeholder engagement. Using participatory approaches and drawing on methodologies from EU projects like POWER4BIO, local actors have identified opportunities in knowledge exchange, renewable energy (biogas), training, and logistics optimisation [16,17].

Implementation support is being channelled through national and European innovation and development programmes. Platforms such as the Hungarian Bioeconomy Cluster and Hungary's involvement in the BIOEAST initiative are helping to mobilise networks and encourage cross-sectoral collaboration, both nationally and within Central and Eastern Europe. Research activities continue to expand, particularly around biogas, biomethane, and circular valorisation of agricultural waste streams [16,17].

Hungary's policy landscape includes several frameworks relevant to the bioeconomy, even in the absence of a dedicated strategy. The National Environmental Technology Innovation Strategy (2011) provides a foundation for eco-innovation, promoting reduced material use, recycling, reuse, and clean technologies. The country's bioeconomy is also closely tied to its circular economy transition. According to the OECD (Organisation for Economic Co-operation and Development), Hungary is working to strengthen the regulatory framework for compost and digestate use in agriculture, redefine bioenergy policy through circular principles, and invest in education and training programmes to build sectoral capacity. However, structural challenges remain: Hungary's material productivity and recycling rates are below the EU averages, and domestic material consumption remains high.

According to the JRC, Hungary's bioeconomy generated a turnover of €35 billion in 2021 (1% of the EU-27 total), employing approximately 361,000 people —equivalent to 2% of the EU-27's bioeconomy employment [2].

Hungarian industry stakeholders in the bioeconomy recognise the importance of certification and traceability for market access, sustainability, and regulatory compliance. However, they face significant challenges, such as the absence of a unified regulatory framework, which results in administrative complexity and unclear responsibilities. Certification processes are often perceived as costly and burdensome, especially for SMEs, while a lack of harmonised standards reduces cross-border recognition. In addition, businesses point to gaps in digital infrastructure, training, and awareness, which complicate the practical implementation of traceability systems. This evidence underlines the urgency of integrated policy reforms and targeted support mechanisms in the future national bioeconomy strategy [14].

4. Region-specific overviews and recommendations

4.1 Spain: Results and recommendations

In consultations carried out under SUSTCERT4BIOBASED Task 5.6, Spanish stakeholders indicated that sustainability certification is being seen increasingly as an important driver of the sustainability of market credibility and finding new opportunities However, although the same certification schemes are applied across sectors, their scope and emphasis vary. Some sectors prioritise feedstock traceability, while others focus more on end-product labelling or the validation of circularity claims, leading to different implementation approaches depending on the sector. While the forestry and agricultural sectors have a comparatively higher rate of adoption of certification schemes, this is still low for biobased products such as plastics, chemicals, construction, and waste based products.

Spanish stakeholders highlighted the need to ensure that sustainability becomes the guiding principle in the identification and valorisation of biobased resources. Cascading use should be prioritised systematically, and all aspects of sustainability, including environmental, circular, social, and economic considerations, must be embedded in certification approaches. Stakeholders also emphasised that while certification is valued for its strategic importance, barriers such as administrative complexity, high costs, and fragmentation among schemes still discourage widespread adoption, particularly among SMEs and cooperatives.

As one of the leading regions in biobased sectors such as agri-food and forestry, Spain is well-positioned to take a pioneering role in promoting the adoption of certification schemes and in raising sustainability standards across the bioeconomy.

Moreover, regulatory consistency and enforcement need to be strengthened. Harmonisation of certification schemes at both national and regional levels, along with clear guidelines aligned with upcoming EU frameworks (such as the Green Claims Directive), will be critical to avoid market fragmentation and ensure credibility.

Finally, expanding certification frameworks to cover not only primary biomass (forestry and agriculture) but also residues, waste streams, and industrial by-products is necessary to fully implement a circular bioeconomy model.

Based on the combination of survey results, stakeholder interviews, and insights gathered during the workshop, the following recommendations aim to support the implementation of certification and traceability systems within Spain's biobased sectors. To ensure targeted action, each recommendation is aligned with specific stakeholder groups, including regional authorities, policymakers, industry actors, research institutions, and certification scheme owners.

- **For industry actors in mixed-material sectors (e.g., construction, plastics, packaging):** Empower sectors with both biobased and fossil-based components to lead the transition by incentivising the production and uptake of certified biobased alternatives, while also supporting traditionally biobased sectors such as agriculture and forestry in scaling up certified and higher-value biobased products.
- **For policymakers and regional authorities:** Expand certification frameworks to include urban biowaste, secondary residues, and non-traditional biomass streams, such as textile waste, green urban clippings, or aquatic biomass, in order to advance circularity goals and promote more inclusive biomass valorisation strategies.
- **For public procurement bodies and decision-makers:**

Integrate sustainability certification criteria into regional and national public procurement policies to stimulate market demand and create incentives for the production of certified biobased products.

- **For research centres and knowledge institutions:**
  Promote interdisciplinary research on the environmental, social, and economic impacts of biobased value chains to generate evidence that supports the continuous improvement of certification systems and enhances stakeholder trust.
- **For certification scheme owners and digital solution providers:**
  Foster digital innovation, such as blockchain-enabled traceability tools, to reduce the administrative costs of certification, streamline verification processes, and improve transparency across value chains.
- **For all stakeholder groups involved in governance and implementation**:
  Encourage structured multi-stakeholder dialogue to define common sustainability metrics and harmonised terminology (e.g., “circular bioeconomy”, “sustainable bioeconomy”), improving consistency and clarity in both policy development and practical implementation.

4.2 Netherlands: Results and recommendations

Stakeholder consultations in the Netherlands conducted during Task 5.6 of SUSTCERT4BIOBASED confirmed that voluntary certification schemes and labels (CSLs) are well established and increasingly visible in policy discussions. Participants noted that the wide range of existing schemes—each with distinct goals and scopes—creates a fragmented landscape that can be difficult to navigate, especially when determining which certification is most appropriate for a given context. While the Dutch bioeconomy is highly developed, this diversity of schemes was highlighted as a key challenge for broader and more consistent adoption.

Notably, feedback gathered during the stakeholder workshop in the Netherland showed hesitation on whether CSLs must strive to include comprehensive sustainability aspects to drive its continuous improvement, or if it is better to target those aspects required by regulation (e.g., RED criteria). In response to this, it is mentioned that the implementation of additional sustainability requirements in regulation is likely the best driving force for increasing the ambition level of CSLs.

As explained in section 3.2, the Dutch government is introducing a regulatory sustainability framework for biological resources, in which certification will play a significant role, similarly to RED. Given this development, Dutch stakeholders called for a balance between the ambition of CSLs and the ease of their implementation, so that schemes remain ambitious but practical for businesses to adopt.

Sub-national initiatives, such as the Province of Gelderland's efforts to implement CSLs into public procurement policy, demonstrates the potential for certification to drive sustainable innovation at a regional level. But broader national alignment and clearer recognition of accepted schemes remain necessary to foster their large-scale adoption across sectors.

The following recommendations are based on the combined insights of Dutch stakeholder consultations conducted under SUSTCERT4BIOBASED and the strategic documents outlining in the Netherlands’ bioeconomy and circular economy agendas. They reflect both stakeholder demands, and project-level analysis of challenges and opportunities related to certification, and sustainability assurance:

- **For national policymakers and regulatory authorities:**
  Create a national “whitelist” of recognised CSLs that align with legal sustainability requirements. This would offer operators clear guidance while maintaining fair market competition and avoiding distortion through the endorsement of specific schemes.
- **For SME support agencies and public administration:**
  Provide tailored guidance and technical assistance to small and medium-sized enterprises (SMEs) interested in certification, with a focus on minimising administrative burdens while retaining high sustainability ambition.
- **For procurement officers and public sector institutions:**
  Incentivise the integration of CSLs into regional and national public procurement policies, particularly in sectors with high sustainability impact potential—such as construction, waste management, or food services.
- **For all stakeholder groups, including industry, academia, NGOs, and public bodies:**
  Facilitate regular and inclusive stakeholder dialogue to ensure that CSLs remain responsive to evolving regulatory frameworks, market demands, and sustainability expectations.
- **For monitoring and evaluation bodies and policymakers:**
  Explore the potential of CSLs to serve as tools for monitoring the transition to a circular bioeconomy. It is essential to distinguish between monitoring systemic progress and merely enforcing compliance with individual certifications.
- **For national and EU-level sustainability governance actors:**
  Acknowledge the global implications of Dutch and EU sustainability policies by ensuring that certification practices are compatible with international supply chain realities, particularly in terms of traceability, fairness, and environmental standards.

4.3 Italy: Results and Recommendations

Sectoral analysis conducted in SUSTCERT4BIOBASED revealed that Italy has frontrunner competences in biobased chemicals, biobased plastics, and food sectors. However, the adoption rate of sustainability certification is not aligned across sectors. The chemical sector, in particular, shows potential for increased adoption of certification and traceability schemes.

Stakeholders suggested that certification is ever more valued as a tool for market competitiveness and regulatory compliance. However, challenges such as administrative burden, scattered certification norms, and regulatory uncertainties—especially concerning waste valorisation—persist. SMEs and start-ups face particular difficulties in accessing certification, partly due to cost and knowledge gaps.

Moreover, certification tools should better reflect the whole set of sustainability impacts, including circularity, social well-being, and economic sustainability. Italy's strong regional dynamics offer an extraordinary opportunity to experiment with tailored certification schemes addressing specific characteristics such as the sectors, value chains or territorial context.

Feedback gathered through stakeholder consultations and sectoral dialogues, as well as technical contributions from certification experts, has underscored that the biobased economy cannot be presumed sustainable by default. Sustainability must be demonstrated through robust evaluation systems, verified traceability (e.g., EN 16751, EN 16848), and alignment with legal frameworks such as the EU Green Claims Directive. Continuous improvement of certification schemes is essential to ensure transparency, credibility, and effective achievement of sustainability objectives.

In light of Italy's strategic direction under the BIT II strategy and discussions held with industry representatives, the following recommendations aim to enhance the implementation and uptake of sustainability certification and labelling schemes:

- **For policymakers and funding authorities (national and regional):**
  Include sustainability certification incentives in public funding programmes to support the scaling-up of certified bioeconomy initiatives across value chains.
- **For certification bodies, SME support agencies, and standardisation institutions:**
  Streamline certification processes and provide technical support to SMEs, reducing entry barriers and encouraging broader participation in sustainability schemes.
- **For regulators and scheme owners in key bioeconomy sectors (e.g., plastics, chemicals):**
  Harmonise certification criteria across strategic biobased sectors to strengthen consistency, comparability, and market credibility.
- **For policymakers and certification scheme developers:**
  Expand the scope of certification beyond traditional sectors like forestry and agriculture to include underrepresented resources such as waste streams, industrial residues, and marine biomass.
- **For regional authorities and bioeconomy platforms:**
  Promote inter-regional collaboration to exchange best practices and lessons learned in certification implementation, facilitating territorial adaptation to diverse socio-ecological contexts.
- **For certification developers, NGOs, and impact analysts:**
  Develop comprehensive sustainability assessment frameworks that incorporate dimensions such as circularity, social equity, and economic resilience within certification systems.
- **For research institutions and innovation agencies:**
  Support targeted R&I efforts aimed at improving impact measurement methodologies, enhancing the scientific robustness and credibility of sustainability certification schemes.

4.4 Germany: Results and Recommendations

The concrete implementation of sustainability certification and traceability systems at a sectoral level reveals a number of technical and policy challenges in Germany. Certification schemes are in place, but their implementation across regions (Länder) and sectors is sometimes uneven. Industry faces regulatory fragmentation in the prescription of sustainability requirements to biofuels and biobased products.

In Germany, both the structured input from national stakeholders and the strengths of the existing bioeconomy framework highlight the country's emphasis on research, innovation partnerships, and public-private collaboration. However, analyses from previous national consultations and strategy documents have pointed to the need for better alignment between certification schemes and circular design principles, as well as stronger integration of certification requirements within Germany's public procurement and industrial policy frameworks.

Germany's long-term vision for a bioeconomy is also contingent upon being able to facilitate system-wide scenario planning, cost-effective implementation, and informed decision-making. Policy intervention in this direction is essential to facilitate interface between energy recovery incentives, material recovery, and design-for-recycling agenda. Additionally, creating a validated and transparent framework for scenario assessment and economic drivers would enhance the scope for stakeholders to compare pathways and forecast trade-offs

A national portfolio of existing bioeconomy technologies—coupled with detailed cost and environmental impact assessments—would also help industry actors to scale up promising solutions and accelerate the transition toward circular and biobased industrial models.

Germany's mature bioeconomy and its policy-driven emphasis on innovation, traceability, and SDG-aligned development offer valuable insights. The following recommendations are drawn from the national strategic context and supported by lessons observed across EU-funded initiatives and comparative assessments carried out within the SUSTCERT4BIOBASED project:

- Enhance coordination and harmonization between regional and federal government authorities to ensure that sustainability certification schemes operate equally across pivotal sectors of the bioeconomy.
- Encourage adoption of certification and ecolabelling standards into government public procurement policy, in particular within such sectors as construction, clothing and textiles, packaging, and catering services.
- Have a portfolio of national bioeconomy technologies supplemented by extensive techno-economic and life cycle costing assessments for policy planning purposes and investment choices.
- Support the alignment of certification schemes with circular economy principles, including cascading use, recyclability, and end-of-life valorisation, especially in complex product systems.
- Encourage inter-ministerial coordination to harmonize certification-related requirements with national climate and circular economy goals, avoiding duplication and conflicting incentives.
- Establish and foster the use of proven scenario frameworks that allow stakeholders to compare bioeconomy transition pathways, compare drivers, and enhance explanations of sustainability trade-offs.
- Promote cross-sectoral exchange and innovation platforms to identify convergences, gaps, and synergies between certification, regulation, and market incentives.

4.5 Hungary: Results and Recommendations

Hungarian industry actors generally view traceability and certification as important tools for improving market access and demonstrating sustainability performance. However, as discussed in Section 3.5, several challenges continue to limit their broader adoption. Among the most commonly reported barriers are the absence of a unified regulatory framework, administrative and financial burdens, and limited access to training and technical infrastructure—particularly outside urban centres. SMEs, in particular, may struggle with the complexity and cost of certification processes, as well as with gaps in digital skills and the availability of tailored guidance.

The expansion of overlapping schemes, both within Hungary and the EU as a whole, adds a further complication. Respondents expressed a strong preference for harmonised and mutually accepted certification pathways that can facilitate international competitiveness and simplify access to new markets.

In line with Hungary's broader circular economy ambitions, particularly in the biobased and food sectors, several targeted policy recommendations have been developed to strengthen the bioeconomy transition. These include the need for a dedicated regulatory framework to support the use of high-quality compost and digestate in agriculture; the introduction of economic instruments to incentivise municipal bio-waste separation (such as "pay-as-you-throw" schemes and higher landfill taxes); and a redefinition of Hungary's approach to bioenergy production to better align with circularity principles. At the same time, stakeholders highlight the importance of improved education,

information dissemination, and training tools to increase awareness and build the necessary technical skills across all levels of the bioeconomy [15].

These challenges highlight the need for policy instruments that are not only technically sound but also accessible and inclusive—most particularly for decentralised and rural actors. The proposed national strategy contains a key potential to integrate these reforms structurally.

Considering the evolving bioeconomy landscape in Hungary, the recommendations below focus on overcoming institutional, technical, and financial barriers to certification and traceability. Although no formal stakeholder workshop was held under the SUSTCERT4BIOBASED project in Hungary, relevant input was gathered through previous EU-funded initiatives such as POWER4BIO, as well as through the activities of national platforms. The derived recommendations are:

- Establish and put in place a national bioeconomy strategy with a single set of certification and traceability schemes for adoption across ministries and sectors.
- Simplify certification procedures and reduce administrative burdens with modular schemes, targeted incentives, and minimal paperwork, especially for SMEs.
- Promote harmonization and mutual recognition of certification standards at national and EU levels for greater trust, transparency, and export value for certified products.
- Use specific capacity-building and training programs to increase awareness of certification benefits, improve technical skills, and facilitate compliance readiness.
- Invest in digital technology infrastructure, especially in rural areas, to allow for effective implementation of traceability systems and increase monitoring capacity.
- Incorporate certification support into national funding schemes, including rural development and innovation programs, prioritizing value chains on agricultural and food industry residues.
- Promote cooperation between national agencies, clusters (e.g., the Hungarian Bioeconomy Cluster), and EU-level initiatives like BIOEAST to ensure coordination, mutual learning, and harmonized development.

4.6 Cross-Cutting Recommendations and Regional Replicability Insights

The analysis of five diverse national contexts: Spain, the Netherlands, Italy, Germany, and Hungary, reveals a set of recurring challenges and enabling factors that transcend borders and administrative levels. Despite differences in policy in each country, common strategic requirements across the cases include industrial capacities, institutional development, and effective sustainability governance. Important lessons can be drawn from these results to support regional bioeconomy strategy design and implementation throughout the EU.

These cross-cutting recommendations are derived from the combined analysis of the national thematic briefs, stakeholder consultations, and relevant EU policy debates. In addition, info from the DLV 5.1 of the SUSTCERT4BIOBASED project, which compiled early strategic recommendations through the synthesis of findings from previous work packages. The full set of Task 5.1 outputs is available in the internal project repository and served as a critical reference to shape the focus and formulation of the regional-level guidance presented in this deliverable.

Based on this consolidated knowledge base, the following cross-cutting proposals are introduced to help shape a sustainable, circular, and certification-led bioeconomy across regions.

Based on the thematic briefs above for each analysed country, the stakeholder consultations, and the current EU policy debates, the following cross-cutting proposals are introduced to help shape a sustainable, circular, and certification-led bioeconomy across regions:

- Promote the use of locally sourced biomass and the establishment of regional biobased value chains to enhance territorial cohesion, facilitate certification, support rural employment, and improve resilience. Substituting imported inputs with regional alternatives (e.g., flax instead of cotton) can also simplify traceability and market access.
- Encourage the development of regional monitoring and data systems to track certified biobased production and value chains. Collaboration between certification scheme owners, statistical offices, and public agencies can enable aggregated reporting by sector and region, improving transparency and supporting evidence-based policymaking.
- Foster the integration of environmental and social externalities into cost-benefit assessments of certification systems. Accounting for these externalities in monetary terms is essential to better reflect the true impacts of bio-based production, support sustainability claims, and guide more responsible investment decisions.
- Allow regional-level coordination of certification practices by enabling harmonised interpretation and adoption of sustainability certification schemes. The regional governments can encourage interface between regional and national or EU-level stakeholders to restrict fragmentation.
- Enable SMEs and local producers to access certification by providing technical assistance and financial support. Regions can introduce specific funding lines, pre-certification advisory services, or pilot actions to reduce the administrative and cost burden for smaller actors.
- Ensure policy coherence at the regional level. National and EU-level sustainability targets should be coordinated by regional governments into bioeconomy and circular economy roadmaps, so that certified biobased products are explicitly addressed in public procurement and innovation support programmes.

5. Conclusions

This deliverable has provided an analysis of national bioeconomy strategies and translated their lessons into practical, regionally applicable insights through the selected five representative countries: Spain, the Netherlands, Italy, Germany, and Hungary. The study highlights the diversity of policy frameworks related to the bioeconomy and identifies key challenges linked to the adoption of sustainability certification, offering concrete recommendations to support the development of circular and sustainable biobased value chains at the regional level.

Although priorities and levels of maturity in their governance of bioeconomy differ between countries, some general observations can be made. For example, stakeholders tend to see certification schemes as playing an important role in building market confidence, enforcing compliance and demonstrating sustainability. However, administrative burdens, high costs (especially for SMEs), lack of specific policy incentive, and lack of awareness or infrastructure, especially in more remote or rural settings, discourage their use.

Second, there is a growing consensus on the need to harmonise certification systems across regions and sectors. In the absence of greater harmonisation and mutual recognition, the spread of duplicate standards risks causing confusion and market inefficiencies. Stakeholders from all regions repeatedly called for more precise definitions, streamlined procedures and greater integration of certification into public procurement and industrial policies.

Third, circularity remains poorly integrated into certification mechanisms. While cascading use of biomass and waste stream valorisation are emphasised in the majority of national bioeconomy strategies, circular economy principles are not adequately reflected in most existing certification scheme standards. It will be necessary to bridge this gap if the bioeconomy's full sustainability potential is to be achieved.

Besides, the role of regional actors remains central. Subnational initiatives and innovation ecosystems have become key facilitators of the implementation of bioeconomy, especially in countries with strong decentralised governance. Stakeholder workshops and interactions illustrated the value of regional leadership in piloting certification practices, cross-sectoral partnerships, and solutions' adaptation to regional socio-economic conditions.

Finally, the findings confirm that the bioeconomy cannot be assumed sustainable by definition. Rigorous, multidimensional assessment—across environmental, social, and economic dimensions—is required to ensure biobased transitions occur sustainably. Certification schemes, therefore, must evolve to incorporate integral sustainability criteria and enhance robustness through also coherence with regional policy developments, e.g., the EU Green Claims Directive.

The recommendations in the thematic briefs cover both cross-cutting and national needs. They demand practical fine-tuning of certification deployment, additional capacity-building, and closer alignment with climate and circular policy. In this way, the regional stakeholders of the bioeconomy can be empowered to lead a transition that is not only biobased, but also future-proof, efficient, and inclusive.

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Appendix

Appendix 1. Structured questionnaire

1. Company sector and details

Question 1: Sector of activity
In which sector of the bio-based economy does your company primarily operate?

- Building and construction
- Wood and timber industry
- Textile industry
- Paper and pulp industry
- Chemical industry
- Plastics industry
- Other (please specify)

Question 2: Type of bio-based feedstock utilized
What type of bio-based feedstock does your company primarily utilize in its production processes?

- Primary dedicated feedstock
- Primary residues
- Secondary residues
- Tertiary residues and waste
- Other (please specify)

2. Certification schemes and ecolabels

Question 3: Adoption of sustainability certification schemes
Has your company adopted any sustainability certification scheme for biological feedstocks or bio-based products?

- Yes
- No

Follow-up (if Yes): *Which sustainability certification scheme(s) and/or ecolabel(s) are currently being used by your company? (Select all that apply)*

- FSC
- PEFC
- RSPO
- RTRS
- Bonsucro
- Better Cotton
- ISCC Plus

- RSB Advanced Products
- Better Biomass
- REDCert[2]
- Textile Exchange GRS/RWS/RDS
- EU Ecolabel
- Blue Angel Ecolabel
- Nordic Swan Ecolabel
- Other (please specify)

Follow-up (if Yes): *Would you/your company be interested in participating in a brief interview/interview and/or participating in a webinar/webinars as a presenter?*

- Yes
- No

Question 4: Reasons for considering the implementation of sustainability certification
What are the main reasons your company would consider implementing sustainability certification schemes for your products or feedstocks?
(Select all that apply)

- Increased market demand
- Gaining access to new markets
- Enhanced environmental/social reputation
- Company's commitment to sustainability goals/targets
- Differentiating products from competitors (competitive advantage)
- Securing price premiums or higher margins
- Reducing operational risks
- Meeting regulatory requirements
- Other (please specify)

Question 5: Challenges in adopting sustainability certification
What are the main challenges your company has faced, or expects to face, in adopting sustainability certification schemes ?
(Select all that apply and rank by priority)

1. High costs of certification (e.g., audit fees, certification fees)
2. Lack of return on investment (e.g., certification costs do not result in higher revenues or market advantages)
3. Ctompliance with certification standards (e.g., adapting production processes to meet sustainability criteria)
4. Administrative burden in monitoring and traceability (e.g., ensuring full traceability of materials across the supply chain)

5. Multiple certification schemes with similar objectives (e.g., confusion about which certification to pursue due to overlapping schemes)
6. Lack of harmonization between certification schemes (e.g., conflicting criteria across different certification bodies)
7. Limited market demand for certified products (e.g., customers not willing to pay premium for certified products)
8. Difficulty in accessing clear information on certification requirements
9. Other (please specify)

Question 6: Perception of multiple certification schemes
How does the existence of multiple sustainability certification schemes with similar objectives impact your company's decision to adopt a certification?
(Select the statement that best reflects your company's perception)

- It makes the process more difficult and confusing, as it is not clear which certification to pursue.
- It creates additional costs and complexity, as we need to comply with multiple certifications to meet different market demands.
- It does not significantly impact our operations, as we have already chosen a certification scheme.
- It offers flexibility, allowing us to select the most appropriate scheme for our needs.
- Other (please specify)

3. Monitoring certification schemes

Question 7: Tools for monitoring compliance with certification requirements
What tools or strategies does your company use to monitor and ensure ongoing compliance with sustainability certification requirements?
(Select all that apply)

- Internal monitoring systems
- Third-party audits
- Digital traceability tools
- Staff training
- Cross-functional sustainability teams
- Other (please specify)

Question 8: Expected challenges in monitoring compliance
What challenges has your company encountered or expects to encounter in monitoring and ensuring ongoing compliance with sustainability certification requirements?
(Select all that apply)

- High costs associated with ongoing compliance audits and monitoring systems
- Technical difficulties in ensuring full traceability of bio-based materials throughout the supply chain
- Lack of appropriate digital tools or software for monitoring and reporting sustainability metrics
- Insufficient internal expertise or staff capacity to manage certification compliance

- Difficulty in accessing reliabler data on environmental or social performance
- Integration of new systems and processes with existing production systems
- Other (please specify)

4. Perspectives and expectations of improvement

Question 9: Expectations for improvements in sustainability certification
What improvements would you like to see in terms of sustainability certification at the EU or international level to facilitate their adoption and make them more effective?
(Select all that apply)

- Greater harmonization and alignment between different certification schemes to reduce complexity
- Clearer guidelines and standards for certification, especially for small and medium enterprises (SMEs)
- Reduced certification costs or more accessible financial support for companies pursuing certification
- More support for monitoring and compliance, including digital tools and traceability systems
- Enhanced recognition of certified products in the market, including incentives for customers to choose certified products
- Simplified certification processes, with less administrative burden
- Increased collaboration between certification bodies and government regulators to ensure consistent enforcement
- Other (please specify)

About SUSTCERT4BIOBASED

SUSTCERT4BIOBASED is an EU funded (Horizon Europe) project aiming at defining and promoting the adoption of effective and robust sustainability certification schemes and business-to-business labels for industrial biobased systems to support tracing the sustainability (environmental, social, economic) of biobased products along the value chains and trades within the EU and globally for responsible production and consumption. This objective is realised by the development of a monitoring system, mapping of the current situation in global trade flows of biological resources and biobased products, and feasibility assessment from the adoption of certification schemes and labels considering actual economic as well as internalized environmental and social costs and benefits. The results of the project are leveraged to provide recommendations to four key target groups: policy makers, sustainability system community, industrial biobased value chain actors, and regional bioeconomy stakeholders. These ambitions are addressed by a strong, well-balanced and multi-disciplinary consortium comprised of 5 complementary partners. SUSTCERT4BIOBASED thereby supports the development of harmonized system requirements, continuous improvement of sustainability certification schemes and labels and contributes towards establishing a circular, climate-neutral and sustainable biobased industry.

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