

D5.4

Thematic brief laying down recommendations to scheme/label owners and standards writers

ECOS

May 2025



PROJECT INFORMATION

PROGRAMME	Horizon Europe
TOPIC	HORIZON-CL6-2021-ZEROPOLLUTION-01-07
TYPE OF ACTION	HORIZON-CSA
PROJECT NUMBER	101059785
START DAY	1 June 2022
DURATION	36 months

DOCUMENT INFORMATION

TITLE	Thematic brief laying down recommendations to scheme/label owners and standard writers
WORK PACKAGE	WP5 Synthesis and recommendations
TASK	T5.3. Recommendations to standards writers, scheme owners and certification bodies
AUTHORS (Organisation)	Laura Väyrynen (ECOS)
REVIEWERS	Heleen Ballemans (WR), Iris Vural Gursel (WR), Karolina Niemenoja (CU)
DATE	31.05.2025

DISSEMINATION LEVEL

PU	Public, fully open	x
SEN	Sensitive, limited under the conditions of the Grant Agreement	
Classified R-UE/EU-R	EU RESTRICTED under the Commission Decision No2015/444	
Classified C-UE/EU-C	EU CONFIDENTIAL under the Commission Decision No2015/444	
Classified S-UE/EU-S	EU SECRET under the Commission Decision No2015/444	

DOCUMENT HISTORY

Version	Date	Changes	Responsible partner
0.1	30/04/2025	First draft for review	ECOS
0.2	01/05/2025	Initial feedback on the first draft	CU, WFBR
0.2	05/05/2025	Integration of initial comments and second draft	ECOS
0.3	17/05/2025	Review of the second draft	CU, WFBR
0.4	23/05/2025	Final deliverable integrating reviewer comments	WR - WFBR
1.0	30/05/2025	Final check and Submission by the coordinator	WR
2.0	18/07/2025	Revision based on the comments received from reviewer	ECOS

LEGAL NOTICE

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

© **SUSTCERT4BIOBASED Consortium, 2025**

Reproduction is authorised provided the source is acknowledged.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	6
1. BRIEF TO STANDARD WRITERS AND OWNERS.....	8
1.1 Results of the comparative exercise (BMT & EN16751).....	8
1.1.1 <i>Similarities</i>	8
1.1.2 <i>Differences</i>	8
1.2 Recommended future coverage for EN 16751	9
1.3 Meeting results.....	11
2. BRIEF TO CERTIFICATION SCHEME AND LABEL OWNERS	12
2.1 BMT overview.....	12
2.1.1 <i>Recommended BMT applications</i>	12
2.2 Scope definition	13
2.2.1 <i>Purpose of the self-assessment questionnaire</i>	13
2.2.2 <i>Methodology of development and application of the SAQ</i>	13
2.2.3 <i>Recommended applications of the self-assessment questionnaire</i>	14
2.2.4 <i>Scopes of the CSLs assessed</i>	14
2.3 Testing results: general overview of recommended areas of improvement	15
2.3.1 <i>Overview</i>	15
2.3.1.1 Environment category	15
2.3.1.2. Circularity category	16
2.3.1.3 Social category	16
2.3.1.4 Economic category	16
2.3.2 <i>Comparison of testing results to self-assessment of coverage</i>	17
2.4 Barriers for implementing improvements and recommendations to overcome them	18
2.4.1 <i>Key areas for improvement</i>	18
2.4.2 <i>Barriers to increasing coverage</i>	19

2.4.2.1 Overarching barriers	19
2.4.2.2 Environmental category.....	20
2.4.2.2 Circularity category.....	21
2.4.2.3 Social category	21
2.4.2.4 Economic category	21
2.4.3 Recommendations to overcome barriers	22
2.4.3.1 Circular and economic categories.....	22
3. CONCLUSIONS	23
4. REFERENCES.....	24
ANNEX. SELF-ASSESSMENT QUESTIONNAIRE	25

Executive Summary

This thematic brief, developed within the framework of the Horizon Europe project SUSTCERT4BIOBASED, presents recommendations for standardisation bodies and certification scheme and label (CSL) owners involved in the biobased sector. The project aims to promote the adoption of effective and robust sustainability certification schemes and labels for industrial biobased systems. A key output is the BIOBASEDCERT Monitoring Tool (BMT), designed to assess the effectiveness, robustness, and comprehensiveness of CSLs. The content level of the BMT aims to provide an assessment of the coverage of defined requirements across environmental, circularity, social, and economic categories.

To inform standardisation efforts, the project liaised with CEN/TC 411 'Biobased products', specifically Working Group (WG) 4, responsible for the EN 16751:2016 'Biobased products – Sustainability criteria' standard. This standard is very relevant and linked to the content level BMT. A comparative analysis between the requirements of the content level BMT and those of EN 16751 revealed similarities in topic coverage (e.g., climate change, biodiversity, labour rights). However, differences in approach were also identified, e.g., in the BMT, applicable value chain actors and feedstock categories for each requirement are specified. In addition, several areas were so far not specifically addressed in EN 16751, such as circularity requirements. From this analysis, recommendations for potential future inclusion of various sustainability topics in EN 16751 were presented to TC411 and WG4, resulting in the formation of a dedicated task force within WG4 to assess the possibility of updating the standard. SUSTCERT4BIOBASED representatives (from WR and ECOS) will participate in the taskforce, which will be continued beyond the project deadline.

The BMT developed by the BIOBASEDCERT cluster was tested on a variety of CSLs. SUSTCERT4BIOBASED led the development and testing of the content level BMT for assessment of the sustainability requirements defined in the CSL standards. Assessment results indicate variable coverage of requirements across the four content-level BMT categories: environment, circularity, social and economic. The Environment category generally was found to be well covered, particularly with regards to mandatory requirements aligned with regulations such as the EU Renewable Energy Directive (RED). Also the Social category, especially labour and human rights was well covered as well as the mandatory requirements in the Healthy and safe working conditions and Wellbeing of the local community principles. Many schemes also require impact assessments and management plans. However, basic requirements that are more prescriptive and advanced requirements which can be considered aspirational requirements for the future were seen to be less covered. Circularity and Economic categories were seen to be often less comprehensively addressed or deemed out of scope. Based on the assessment results, recommendations were derived for the CSL owners individually. Although these recommendations differed per CSL, there could be some findings drawn on a general level. Several areas of coverage improvement for CSLs were identified, including lifecycle GHG emission reporting, deforestation, ILUC risk management, water and air quality monitoring (Environment); circular resource use, design for high quality recyclability and product-life extension strategies (Circularity); fair contract practices, comprehensive health and safety management, maternity leave, stakeholder mapping (Social); and formal business plans, financial risk management, and record-keeping on fair practices (Economic).

A self-assessment questionnaire was developed to support CSL owners to identify the sustainability principles that are within their scope and evaluate their level of coverage of these. This questionnaire was also used to define the scope of the tested CSLs in the second testing phase of the BMT with input from the scheme and label owners. This questionnaire can be used beyond the project by other

CSL owners for a quick self-evaluation or as a pre-assessment to define the scope before the content level BMT assessment.

Based on the testing results, scheme-specific recommendations were developed and detailed in Deliverable 3.2 (Task 3.3). In this brief, overarching findings and cross-cutting areas for improvement are presented. Additionally, in this brief the barriers identified for the implementation of the identified recommendations and to increase the coverage of the sustainability requirements in CSL standards are presented. These include economic constraints, governance and technical complexities, stakeholder dynamics, and the lack of specific regulation for biobased product sustainability. Barriers specific to key areas of improvement were also identified and described in the deliverable. Recommendations to overcome these barriers include highlighting long-term economic benefits of certification, investing in digital tools for traceability and assurance, as well as strong and predictable regulation supporting sustainability certification of industrial biobased systems. The BMT itself is well-positioned as a tool to support alignment of CSLs with EU sustainability goals.

1. Brief to standard writers and owners

For T5.3, SUSTCERT4BIOBASED committed to liaising with technical committees (TCs) of standardisation bodies to seek feedback on the replicability of the BIOBASEDCERT Monitoring Tool (BMT) into CEN/ISO standards and work items. Accordingly, the project liaised with CEN/ TC 411 *Biobased products*, notably with Working Group (WG) 4 *Sustainability criteria, life cycle analysis and related issues*. TC 411 is responsible for the NEN-EN 16751:2016 *Biobased products – Sustainability criteria* standard which is closely linked to the content level BMT which the SUSTCERT4BIOBASED project led the development of.

A general presentation on the cluster, the project, and the BMT were provided to the convenors to provide information prior to a potential presentation to TC411 and, separately, WG4.

The benefits that were identified for TC411 regarding collaboration with SUSTCERT4BIOBASED included receiving a comprehensive overview of all sustainability considerations for industrial biobased systems with a specific set of requirements (through the BMT) as well as additional information to support the TC's work on potentially incorporating additional topics in updates or new standards.

The project was invited to present to TC411 and, separately, to WG4 in March 2025. In the meetings, the cluster and project were presented as well as a general overview of the BMT. In addition, a comparative exercise was conducted regarding the sustainability criteria outlined in the EN 16751 standard and those in the content level BMT.

1.1 Results of the comparative exercise (BMT & EN16751)

Both the requirements set out in the content level BMT and those in the EN 16751 standard were reviewed, and similarities and differences in topic and approach were identified.

1.1.1 Similarities

Similarities between the two sets of sustainability criteria included the requirement to justify non-relevance / non-applicability. This refers to the requirement that if a certain topic or criterion is deemed by the CSL to not be applicable, this needs to be justified explicitly.

In terms of sustainability topics, both covered the following (grouped under BMT categories):

- **Environment:** Climate change, biodiversity, soil management, air quality, water, energy
- **Circularity:** Material efficiency, recycling residual flows
- **Social:** Child labour, forced labour, freedom of association & collective bargaining, discrimination, training, stakeholder consultation (more specifically regarding land rights, food and water security, local development)
- **Economic:** Economic viability, fair business practice

1.1.2 Differences

There were also differences between the two criterion sets in terms of approaches. For example, in EN 16751, applicable value chain actors (e.g., biomass producer, industrial processor, etc.) or feedstock categories (e.g., crops, forest biomass) per requirement are not specified whereas in the

BMT they are. The standard's wording is also slightly different: in EN 16751, operators are asked to “describe measures taken [to reach a goal]”, whereas the BMT requires activities to reach a goal. This is a small but significant difference: technically, for example, EN 16751 prescribes a description of measures, the BMT, in turn, requires that there are certain activities to be conducted to meet the requirement; if these are not done the requirement is not met by the operator. Also, EN 16751 does not explicitly require compliance with applicable laws and regulations. Instead, compliance with certain requirements can be demonstrated by providing an explanation of compliance with legislation.

Additionally, the EN 16751 standard also does not distinguish between different requirement levels, as opposed to the BMT, which has three so-called ambition levels: mandatory, basic, and advanced. However, the purposes of the standard and the BMT differ; with the standard, the expectation is that all requirements are met, whereas the BMT acts as an assessment tool of how many requirements are covered, given the scope of the assessed scheme or label.

1.2 Recommended future coverage for EN 16751

As a result of the comparative exercise, it was observed that several sustainability areas were described in the content level BMT that so far was not addressed by EN 16751 standard. Based on this analysis, a recommendation was presented on potential areas that can be further considered to be covered in new versions or updates of the standard.

General considerations that were recommended for potential future inclusion include more detailed social requirements, for example, by separating labour rights requirements (child labour, forced labour, freedom of association, etc.) from each other. Additionally, more explicit consideration on circularity is recommended beyond waste management, such as related to the design for high quality recyclability and product-life extension strategies. Furthermore, stronger language on Local development requirements is encouraged as the current version is “may”, signifying that these requirements are without obligation, whereas the wording for other requirements is stronger (“Describe procedures taken to identify risks [...]” vs. “The economic operator may describe activities to address local development”).

Additionally, more specific recommendations were identified per categories and an overview is provided in Table 1.

Table 1: Recommended future coverage topics for EN 16751

Category	Sustainability principle	Sustainability criteria examples for inclusion
Environment	Sustainable land use management	High-carbon stock and peatlands
	Forest management	Forest management plans, sustainable harvest, preventing deforestation
	Biodiversity conservation	Buffer zones, invasive species

	Plant protection products and chemicals management	Integrated Pest Management plan, prohibition of hazardous substances
Circularity	Circular resource use	Applying the cascading use principle, ensuring regeneration of biomass
	Circular design & material cycling	Design for high-quality recyclability, product life extension strategies
	Responsible waste management	Addition of specific requirements for prohibiting open-air burning and landfilling
	Human rights	Explicit requirement to adhere to Universal Declaration of Human Rights
Social	Labour rights	Grievance mechanisms
		Fair remuneration
		Fair contract practices
		Gender equality
		Abuse, harassment and violence
	Healthy and safe working conditions	Working hours and overtime
		Health and safety specific requirements such as Personal protective equipment
Wellbeing of the local community	Stakeholder engagement	
	Positive Free Prior and Informed Consent (FPIC)	
Economic	Economic and financial viability	Business records
	Economic risk	Management of financial risks and vulnerability

1.3 Meeting results

The BMT and the analysis of comparison with the EN 16751 standard were presented to the TC411/WG4 on 18th March and to the general TC411 on 19th March. The presentations were received well within the TC411 and WG4 meetings, and the proposition to update the EN 16751 was regarded as an interesting proposition. There were also several presentations by external parties with suggestions on new updates, revisions, or work items for the TC.

As a result of these meetings, it was decided to have a follow-up to discuss the propositions further. At a third meeting on 11th April 2025, it was agreed that the suggestions outlined above would be taken forward into a separate taskforce within WG4, along with the ideas presented in another external partner presentation concerning sustainable biomass sourcing. This taskforce would assess the potential to integrate the suggestions into a revised standard. The coordinator of the SUSTCETR4BIOBASED project (Iris Vural Gursel from WR) is a member of the WG4 in question, and thus also the taskforce. The activities of the taskforce and the foreseen revision of the EN 16751 will be carried out beyond the project deadline. However, the coordinator will be involved in the working group supporting the implementation of the recommendations derived by the SUSTCERT4BIOBASED project in updating the EN 16751.

2. Brief to Certification scheme and label owners

2.1 BMT overview

The BIOBASEDCERT Monitoring Tool (BMT), developed by the BIOBASEDCERT cluster to assess the effectiveness, robustness, and comprehensiveness of certification schemes and labels (CSLs) for biobased products, can be useful for CSLs in a multitude of ways. CSLs can use the assessment process as well as the results to understand the standing of their CSLs and associated standards in terms of coverage of the BMT requirements defined within system, content and outcome levels. In a similar vein, it can be a useful way for CSLs to identify points of and ideas for improvement of the content of their scheme's standards, governance, and impact measurement.

This report focuses on the content level BMT, which analyses CSLs' sustainability requirements for operators seeking certification. The content level development was led by the SUSTCERT4BIOBASED project.

In the content level, three requirement levels were defined: mandatory, basic, and advanced. Mandatory requirements are those which credible schemes will most likely cover the majority of (if applicable to their scheme). They are linked to legislation, sustainability protocols and conventions. Basic requirements are more detailed and prescriptive. It was recognised that some schemes choose to provide such more comprehensive requirements in their standards, whereas some schemes intentionally do not prescribe this level of detail on their standards and leave these aspects to be decided by the organisations themselves in meeting the defined criteria. Advanced requirements are intended as aspirational requirements. These requirements are not expected to be covered by the schemes at the moment but were defined to drive continuous improvement. Some ambitious schemes may nevertheless already meet some of these requirements. Schemes can use the basic and advanced requirements detailed in the BMT to, for example, build a future improvement roadmap on specific topics and consider them in the update of their standards.

2.1.1 Recommended BMT applications

The BMT can be used for a multitude of purposes by different stakeholders. Policymakers could use the BMT to gain knowledge of how existing CSLs contribute to EU sustainability priorities. It can also be used as an implementation mechanism to support regulation. CSL owners themselves can use it for identifying opportunities for improvement of their standards. In addition, ecolabels mostly rely on or refer to third-party sustainability certification schemes (such as RSPO, FSC, Bonsucro) to ensure the sustainable sourcing of biomass. They could use the BMT as a checklist for internal assessment of which schemes adhere to their requirements and can be accepted to ensure the sustainability of the biomass feedstock.

2.2 Scope definition

2.2.1 Purpose of the self-assessment questionnaire

The self-assessment questionnaire (SAQ) was developed to (i) serve as a self-reflection tool for CSL owners (i.e., aimed at reflecting on which principles are within their scope and to what extent these applicable principles are covered) and (ii) a scope-defining tool (i.e., an initial step in the assessment process of CSLs for the content level BMT testing to defined the scope of the tested CSL).

Early on in the development of the content level, it was realised that the schemes have quite a varying scope in terms of the applicability of their requirements to certain types of feedstock and value chain actors. Additionally, it was seen that some of the sustainability categories or principles therein can be outside the scope of the assessed CSLs. It was accordingly decided to first have a scope-defining exercise to allow for the selection of applicable feedstocks, value chain actors and principles within the scope of the CSL in consultation with the CSL owners. Thereby, scoring schemes on topics that are out of scope or inapplicable is prevented. The SAQ developed was asked to be filled by the involved CSLs in the second testing phase of the BMT and proved useful to define the scope of the CSLs for assessment.

This questionnaire can also be used beyond the project by other CSL owners for a quick self-evaluation. They can consider whether the different sustainability principles are applicable to them and additionally evaluate their level of coverage of these. Thereby, the SAQ helps ensure a shared understanding of scope, improves the relevance and accuracy of the BMT assessments, and supports CSL owners in reflecting on their own coverage of sustainability principles.

2.2.2 Methodology of development and application of the SAQ

The SAQ (that is provided in the Annex) was developed taking the content level BMT as basis. The design of the SAQ follows the structure and content of the BMT. It includes the list of feedstock categories, value chain actors, and principles included in the “Pre-assessment” tab of the content level BMT. It follows specifically the categorisation of sustainability principles across four categories: Environmental, Circularity, Social, and Economic. It was developed by SUSTCERT4BIOBASED in collaboration with testing teams and sister projects. The SAQ was created as an Excel document with drop-down menus. It was tested by the CSLs involved in the second testing phase. This ensured that the SAQ developed fulfils its defined needs (for defining scope for BMT testing and as a standalone self-assessment tool).

The SAQ is applied as follows. The CSLs enter information selecting the applicable option(s) from the drop-down menus about their scope in terms of applicable feedstock (crop, forest, agrarian and forestry residues, and waste and residues) and value chain actors (biomass producer, industrial processor and final product manufacturer). Then the CSLs review the list of sustainability principles (e.g., climate change management), grouped under four categories, and evaluate which are within their scope. To ease this evaluation, examples of themes addressed within the principles are provided in the questionnaire. For each principle, the CSL/user chooses whether the sustainability principle applies to the CSL or not. If a principle is determined as not applicable, the user is prompted to include a justification for this answer. Examples of justifications are provided through a drop-down menu (e.g., not relevant to feedstock covered). Other justifications can also be included in writing. Following this assessment of applicability, CSLs are then asked to evaluate their level of coverage regarding the applicable principles as either full, partial or absent. The CSL can also provide a reference to their standard where that sustainability principle is covered.

This exercise was introduced in the second testing phase of the content level BMT. CSL owners were asked to fill in this questionnaire. This information was then used as input in BMT to define the scope of the CSL so that they would be assessed with only those requirements applicable to them. If the BMT assessment is done by a third party, it is recommended that the assessor reviews the justifications offered by the CSLs to determine if the principles truly are not applicable and if the justification is credible. The third party carrying the BMT assessment can also review the references provided, which could facilitate the testing process.

The application of the SAQ in the second testing phase of the BMT improved the robustness of the evaluation and thus played a pivotal role in optimising the BMT testing process, increasing transparency, and fostering mutual understanding between scheme owners and assessors.

2.2.3 Recommended applications of the self-assessment questionnaire

Self-assessment questionnaire can yield valuable information to the CSL about itself and its position in the sector, as well as bridge information and knowledge gaps within the organisation itself. The responses and the response collection process can provide CSLs with further insights about why certain sustainability topics are covered or not. If this self-assessment is carried out as a pre-assessment for the BMT, CSL owners can also see how their own understanding of the coverage of certain topics compares to the results of the assessment.

The other main application of the self-assessment questionnaire is the scope definition stage. The exercise optimises the BMT assessment process by pre-determining the applicable feedstock(s), value chain actor(s) and principles. This way, only requirements applicable to the CSL in question will be assessed, reducing unnecessary work for the assessor but also providing the CSL with useful and appropriate results. The justification required in case of a non-applicable selection can also clarify if a scheme does not cover a topic due to credible reasons (resulting in it not being assessed against the topic) or due to potential gaps in coverage or low ambition (resulting in an assessment against the topic, likely yielding low coverage).

2.2.4 Scopes of the CSLs assessed

Across the nine CSLs assessed in the project, in terms of feedstock scope, it was seen that some schemes cover several feedstock categories (such as RSB, ISCC and Better Biomass), whereas some schemes are specific to a specific feedstock category, such as FSC and SBP for forest biomass and Better Cotton and Bonsucro for crop. In terms of value chain actors, the CSLs most often covered biomass producers and industrial processors. Final product manufacturers were only explicitly covered by the two assessed ecolabels.

Regarding sustainability principles within the scope of the assessed CSLs, the ecolabel product groups assessed (building and construction materials for the Nordic Swan Ecolabel, and detergents and cleaning products for the EU Ecolabel) were seen to have quite different coverage compared to sustainability certification schemes. Social and economic aspects were considered out of the scope or not applicable to ecolabels (with the exception of the Wellbeing of consumers principle). Also, some gaps were seen in Environmental and Circularity principles. This is because, in the approach adopted by ecolabels, requirements are defined not to be comprehensive in coverage but to address the environmental (and social) impacts identified as hotspots for the life cycle of the product group under consideration, and where a viable potential for change by operators exists. This means that for other product groups (e.g., textiles), some social principles can be identified as hotspots and as such be in scope. Looking at the certification schemes, most principles under the four categories

were applicable, except for the Wellbeing of consumers principle under the Social category, as the final product manufacturer is out of scope of the schemes.

2.3 Testing results: general overview of recommended areas of improvement

2.3.1 Overview

The findings presented in this section synthesise the results of the testing conducted across nine CSLs, detailed in *D3.2 Evaluation of existing schemes and labels*. As part of D3.2, based on the assessment results, recommendations were derived for the CSL owners individually. This sections focuses on deriving common findings and opportunities for improvement for CSL owners.

While these recommendations varied depending on the specific scope and characteristics of each scheme, several common findings emerged.

- The CSLs demonstrate varying coverage across the four categories of the BMT (Environmental, Circularity, Social, Economic). Generally, the Environmental and Social categories were more comprehensively covered than the Circularity and Economic categories. However, coverage can vary significantly depending on the specific scheme's scope, objectives, the feedstocks and the value chain actors that are applicable.
- Many schemes cover mandatory requirements well, particularly those aligned with regulation, such as the EU Renewable Energy Directive (RED). Several schemes require impact assessments and management plans, which contribute to extensive coverage of requirements in the Environment and Social categories. However, basic requirements that are more prescriptive and advanced requirements which can be considered aspirational requirements for the future were seen to be covered to a lesser extent than mandatory requirements. Additionally, social (except for well-being of consumers) and economic aspects were considered out of the scope or not applicable to ecolabels.

The following section synthesises these cross-cutting insights derived from D3.2, highlighting overarching areas for improvement that are broadly applicable to CSL owners across the four BMT categories.

2.3.1.1 Environment category

CSLs generally cover mandatory environmental requirements well. Principles such as 'Environmental management', 'Protection of biodiversity' (e.g., identifying high conservation value areas), 'Climate change management', and 'Soil management' are often well covered, especially regarding mandatory and some basic requirements. Compliance with RED III strengthens coverage in 'Sustainable land use management' and 'Protection of biodiversity' for relevant schemes. 'Water quality and conservation' requirements related to pollution prevention are often included. Some schemes demonstrate a high coverage of requirements within the 'Chemical use management' principle, particularly concerning pesticides and hazardous substances.

While GHG emissions are addressed, the coverage of specific requirements for reduction roadmaps or lifecycle reporting in CSL standards themselves could be expanded. If present, they are part of voluntary add-ons offered by the schemes, rather than being integrated into the core standard documents. In the 'Sustainable land use management' principle, requirements concerning deforestation/degradation prohibitions and ILUC risk management were identified as an area of

improvement. CSLs could also consider increasing their coverage of the requirements in the 'Chemical use management' principle, as many requirements sometimes focused on pesticides rather than substances at a general level. Water and air quality monitoring were also identified as areas of improvement. CSLs could also consider increasing their coverage of some of the advanced requirements (such as those concerning the use of renewable energy or reduced energy usage).

2.3.1.2. Circularity category

Mandatory requirements for 'Responsible waste management' (e.g., safe disposal) and 'Circular design & material cycling' (e.g., reuse/recycling of residual flows) are often covered. Some schemes also prohibit or restrict open-air burning and require measures for material efficiency.

Nevertheless, the Circularity category was identified as an area of improvement for CSLs. The standards did not exhibit high coverage of requirements related to the 'Circular resource use' principle, such as application of the 9R framework and cascading use principle or ensuring harvesting respects sustainable yields. In the 'Circular design & material cycling' principle, basic requirements, such as the reuse or recycling of residual flows and resource efficiency, were addressed by a handful of CSLs. CSLs could consider increasing the coverage of basic-level 'Responsible waste management' requirements, like prohibiting landfilling. Advanced requirements concerning design for reuse and reparability could also be considered for coverage by all CSLs.

2.3.1.3 Social category

CSLs generally demonstrate a high coverage of mandatory requirements in the 'Labour and human rights' principle, including prohibitions on child labour and forced labour, and ensuring freedom of association and collective bargaining. Requirements covered in the 'Healthy and safe working conditions' principle often concern management plans and the provision of personal protective equipment (PPE). CSLs frequently cover requirements on land rights and stakeholder engagement/consultation within the 'Wellbeing of the local community' principle. Some schemes show a broad coverage of basic and even advanced labour rights requirements. 'Wellbeing of consumers' is occasionally addressed by product-related schemes, even if other social aspects are out of scope for the CSL in question.

CSLs could consider expanding their standards to cover the Universal Declaration of Human Rights, written contracts, or maternity leave. Basic requirements regarding social security benefits, maternity leave, detailed fair contract practices, or training on labour rights were identified as areas of improvement. It is suggested as well that many CSLs could strengthen their requirements regarding working hours, emergency response, access to medical treatment, and safe accommodation. In the 'Wellbeing of the local community' principle, BMT requirements that CSLs could increasingly consider in their standards relate to stakeholder mapping and engagement, food and water security, and procedures for handling land disputes. Requirements for local hiring or supplier prioritisation were also identified as areas for improvement.

2.3.1.4 Economic category

Where in scope, schemes often cover the mandatory requirements in the 'Fair business practice' principle (e.g., having policies against bribery and corruption). Some basic-level requirements (e.g., maintaining business records) and some advanced requirements (e.g. requiring written contracts of business relationships) are also included.

Compared to other categories, the Economic category is frequently the least covered or deemed out of scope. Common areas of improvement (when applicable) include requirements for a formal business plan, record-keeping of fraudulent practices, and systematic financial risk management as well as staff training on fair business practices.

2.3.2 Comparison of testing results to self-assessment of coverage

During the second testing phase, the CSLs assessed in that phase were sent an Excel-based scope-defining exercise, which included a section for the self-assessment of the CSL's coverage of the various principles of the BMT with the response options of 'Full', 'Partial' and 'Absent'. It is important to note that the CSL's response was based not on the detailed requirements of the BMT for that principle, but on the general themes of the various principles detailed in the self-assessment exercise.

For this thematic brief, the correlation between the self-assessed coverage and the assessment results was compared.¹ It is to be noted that only six CSLs carried out this self-assessment and were involved in the second testing phase.

Based on the analysis, there is moderate alignment between the schemes' self-assessment and the testing results. For nearly two-thirds of the principles across all four schemes, there was consistency between the self-assessed coverage and the testing results. The alignment was especially notable in the Social and Economic categories, especially for 'Labour and human rights' and 'Healthy and safe working conditions'.

However, for a quarter of the principles, the self-assessment and testing results diverged. The predominant pattern among non-aligned principles was that CSLs considered that the principle was fully covered, despite the results leaning more towards partial coverage. Principles in the Environmental category were often assessed to have 'Full' coverage in the self-assessment, however, the BMT results showed that this was not always the case. As an example, 'Chemical use management' coverage was assessed as 'Full' by all tested CSLs. While this was indeed the case, especially for the mandatory requirements for several schemes, the BMT assessment results of some were also much lower (e.g., 1 out of 5 mandatory requirements covered). Principles such as 'Air quality' and 'Energy use & efficiency' were often assessed as partial, even though BMT assessment results varied from fully covered to not at all covered. This could be due to the self-assessment questionnaire not providing the details on the requirement level, but only brief information on what the principle is about. Therefore, the perception of the CSL owners on what aspects should be included in that principle could be different.

It was also observed that most often, the CSLs considered the principles under the circularity category to be outside their scope. Many CSLs seemed to have misunderstood the focus and content of this principle. The term 'circularity' was often associated with the end-of-life of products (e.g., recycling of the product after its use), while the BMT content level requirements in the circularity category also emphasise circularity in resource use and along the production process. It was needed

¹ To conduct the comparison, thresholds were established for the coverage levels. Coverage was defined as 'Full' coverage when the 'percentage of requirements met' was 50% or higher for mandatory requirements or 75% for basic requirements. Coverage was defined as 'Absent' when the aggregated score across mandatory, basic, and advanced levels was below 10%. All other cases were defined as 'Partial'. Principles not applicable to the CSL were excluded from the exercise. When conducting the self-assessment, these thresholds were not used by CSLs, thus their self-assessment is unavoidably subjective.

to hold follow-up interactions with CSLs to clarify on this point that several of the requirements within this category are also applicable to them, e.g., reusing or recycling residual flows and material efficiency.

These results imply that CSLs may want to review the divergences between their self-assessment and the BMT assessment results. This could help CSLs understand better the extent of their coverage of certain principles, the narrative deployed around certain sustainability topics, and the extent of a common understanding of the CSL's ambition levels regarding specific sustainability topics among CSL employees and representatives.

2.4 Barriers for implementing improvements and recommendations to overcome them

2.4.1 Key areas for improvement

As outlined in 2.3 *Testing results*, there are some key areas where the BMT's sustainability topics were not covered by the CSLs. While the Environmental and Social categories receive significant attention by CSLs, the Circularity and Economic categories are less well covered. Many schemes only cover, for example, the mandatory requirements and a very limited number of basic requirements.

In the Environmental category, key areas of improvement included:

- Climate change management: Emission reduction roadmaps and lifecycle emissions reporting
- Sustainable land use management: Deforestation and degradation, indirect land-use change (ILUC) management
- Protection of biodiversity: Management of invasive species
- Chemical use management: Consideration for management of all chemicals instead of focusing only on pesticides
- Air quality: Air quality measurement and monitoring
- Water quality: Water quality monitoring
- Energy efficiency: Energy use reduction, use of renewable energy

In the Circularity category, key areas of improvement included:

- Circular resource use: 9R framework or cascading use principle
- Circular design & material cycling: Design for high quality recyclability and product-life extension strategies, reuse and recycling of residual flows, material efficiency
- Responsible waste management: Prohibition of landfilling and open-air burning

In the Social category, key areas of improvement included:

- Labour and human rights: Explicit requirement to adhere to the Universal Declaration of Human Rights, training on labour rights, fair contract practices, social security
- Healthy and safe working conditions: H&S management plans, working hours, emergency response, access to medical treatment, safe accommodation

- Wellbeing of the local community: Stakeholder mapping and engagement plans, food and water security impact assessment, procedures for handling land disputes, local hiring and procurement prioritisation

In the Economic category, key areas of improvement included:

- Economic and financial viability: Formal business plan
- Fair Business practice: Fraudulent practice risk identification, record-keeping
- Economic risk management: Economic risk, financial vulnerability

2.4.2 *Barriers to increasing coverage*

The question that arises as a result of the assessment is: how can CSLs bridge these gaps in their coverage? As an attempt to answer this question, a high-level literature review was conducted, and the input of topic experts and a CSL representative was solicited. It is important to note that most of the assessed CSLs are a result of extensive multi-stakeholder interactive processes. Through these processes, consensus is sought on the inclusion and modification of requirements so that the CSL finds broad support in the market. While scheme owners are recommended to consider addressing the points identified and reported under opportunities for improvement, upholding a balanced multi-stakeholder engagement system is acknowledged as instrumental to safeguard sustainability and the CSL's position as a widely recognised scheme in the market. Additionally, some CSLs, for example ISO-compliant ecolabels, do not intend to be comprehensive in coverage but to address the environmental (and social) impacts identified as hotspots for the lifecycle of the product group under consideration, and where a viable potential for change by operators exists. Therefore, it is acknowledged that the identified areas of inclusion per CSL are meant as feedback for consideration by the CSL owners, and they would be implemented only if aligned with their procedures, aims and scope.

2.4.2.1 *Overarching barriers*

At a general level, barriers often identified for CSLs to update their standards to increase the ambition level include the following.

Economic constraints: For CSLs themselves, there are costs associated with developing, implementing and auditing stricter standards [1]. More importantly, CSLs may hesitate to introduce stricter standards due to concerns about the costs for certified and certification-seeking operators (especially smallholders and SMEs). Especially short-term costs for compliance and certification can be high early in the certification process, but even out in future years as the up-front investments start reaping benefits. This can be the case for, for example, investments in energy efficiency.

There is also a fear that higher costs could deter company participation, especially if clear market premiums cannot be guaranteed [1]. This would, in turn, endanger the viability of the CSL as an organisation. It can be assumed that the stricter the requirements of a scheme are, the fewer companies will apply and be certified by the scheme due to the increased resources needed to comply. Schemes thus need to balance factors related to market demand and competitiveness with the ambition and stringency of their requirements.

Governance complexity: CSLs might not want to adopt requirements that are difficult to audit credibly, fearing greenwashing accusations. In addition, there might already be ineffective implementation of existing requirements due to, for example, weak assurance mechanisms [2,3].

Technical complexity: CSLs might be cautious about including criteria on topics with complex technical aspects (e.g., life cycle analysis), as methodologies evolve continuously, and some might be challenging to apply across various contexts [1,4]. This may result in CSLs choosing less complex, process-based criteria as opposed to outcome-based ones.

Stakeholder dynamics: Multistakeholder standard development and implementation process, as well as scheme governance models, generally can result in more robust and inclusive CSLs. Meaningful stakeholder consultation can result in a compromise between economic feasibility and environmental and social considerations. However, engagement of a wide variety of stakeholders can also lead to compromises in ambition, as CSLs might hesitate to introduce requirements that might face opposition from influential groups [1,2].

Lack of regulation: At the European level, there is a lack of regulation setting out requirements for the sustainability of biobased products. Often, CSLs use regulation as a minimum baseline upon which to build their requirements through stakeholder engagement processes. In the absence of regulation, there can be uncertainty for schemes and stakeholders on what sort of standards to follow and what themes to focus on.

2.4.2.2 Environmental category

Climate change management: Accurately calculating lifecycle GHG emissions for biobased materials can be challenging for the operator itself. Correspondingly, verifying the calculations accurately can pose significant challenges to the CSL's assurance system. In turn, setting ambitious emissions reduction roadmaps requires robust baseline data and strong monitoring, which can be costly to implement.

Sustainable land use management: Monitoring compliance with deforestation or forest degradation can be difficult, especially in regions with weak governance systems. However, there are existing and emerging capabilities to use, for example, satellite data to monitor deforestation, and the new EU Deforestation Regulation that CSLs are already adapting to will hopefully make the monitoring process less complex.

Protection of biodiversity: Developing meaningful, implementable and auditable criteria for biodiversity beyond habitat area conservation can be seen as difficult by CSLs [4]. However, there are currently several initiatives ongoing (e.g., [ALIGN Project \[5\]](#), [IPBES Business and Biodiversity Assessment \[6\]](#), [Science-Based Targets for Nature \[7\]](#)) to establish frameworks for biodiversity monitoring, which might support further inclusion of biodiversity criteria in CSL standards.

Chemical use management: Schemes may prefer to stick to allowing the use of pesticides due to existing regulations and assessment methods. In addition, reducing the use of plant protection products increases the risk of harvest failure. A scheme can find it challenging to require reduced usage of pesticides from farmers considering the fact that this can increase the operator's economic risk significantly.

Air quality, water quality: Measurement and periodic monitoring of air and water pollutants can be technically difficult, and it is challenging to attribute pollutant emissions to specific entities, especially with smaller operations. It might also be perceived as a lower-priority issue compared to, for example, deforestation. Some of the schemes assessed may rely on prohibiting or limiting open-air burning as a proxy, which is easier to verify but less comprehensive.

Energy efficiency: While efficiency can offer cost savings, mandating specific energy efficiency measures or technologies can be costly for operators.

2.4.2.2 Circularity category

Circular design and material cycling: Implementing circular design principles (e.g., designing for reuse and repairability) requires significant shifts in product design and manufacturing processes, which can be costly and face resistance [8]. Expertise across different areas, including design, materials, and environmental impacts, as well as collaboration with other sectors (e.g. using residues to produce textiles) is often also needed.

Other major barriers include the lack of circularity infrastructure (e.g., sorting, recycling) in certain areas, and regulation and standards unintentionally blocking circularity efforts (e.g., through material requirements for food packaging) [9].

Responsible waste management: Lack of adequate infrastructure for waste collection, treatment, and disposal (alternatives to landfilling/burning) is a major barrier, particularly in remote and developing regions [10,11]. Developing requirements that are nearly impossible to meet can result in non-compliance.

Out-of-scope assumption: Many CSLs, including those in the biobased sector, consider that circularity is out of the scope of their scheme. It is often perceived as only an end-of-life matter as opposed to a principle to be integrated throughout the lifecycle of the biobased product. Operator and CSL awareness of the benefits of circularity beyond waste management and end-of-life should be increased.

2.4.2.3 Social category

Labour and human rights: Monitoring and verifying compliance with labour rights (e.g., fair wages, working hours, freedom of association, non-discrimination) can be challenging, especially without unannounced audits. Social audits and audits in general can only determine the situation at a singular point in time. It is challenging to determine if the results of the day(s) of audit can be extrapolated to all other days of the year. High-quality auditing of social matters can be complex and costly due to, for example, difficulties in accessing vulnerable workers.

Healthy and safe working conditions: Developing, implementing, and ensuring compliance, as well as providing training regarding effective H&S management plans, can be costly, particularly for small operators.

Wellbeing of the local community: Meaningful engagement with local stakeholders requires significant effort, resources, and culturally appropriate approaches [12]. This can seem overly burdensome to some organisations. Requiring and auditing, for example, Free, Prior and Informed Consent (FPIC) and food security impact assessments, requires contextual understanding and resource-intensive auditing [8,9].

2.4.2.4 Economic category

CSLs traditionally focus on environmental and social criteria, often viewing economic aspects as out of scope.

Economic and financial viability: There could be concerns about the potential to exclude less formalised operators like smallholders if comprehensive business plan and documentation requirements are set out [13].

2.4.3 Recommendations to overcome barriers

Highlighting economic benefits: Schemes may be hesitant to introduce more ambitious, and thus often costlier, requirements, as many operators shy away from the high costs of compliance. Enhancing communications about the long-term economic benefits of both certification and the implemented technologies and measures (e.g., water-saving infrastructure) could mitigate this barrier. In addition, providing certified operators with information on the positive impact resulting from certification (e.g. x% decrease in soil degradation) can improve both acceptance of the certification process within the company (improving implementation efficiency), as well as act as external proof of genuine sustainability impact, potentially producing further economic benefits.

New technologies: Investing in digital tools to improve traceability and assurance can enhance audit credibility and transparency and reduce the risk of greenwashing. Digital and regulatory tools, including the Digital Product Passport (DPP), and technologies such as blockchain and AI will make processes, especially traceability, smoother, more effective, and more trustworthy.

Taking new approaches to challenging problems can also sow solutions. For example, exploring new ways to improve biodiversity monitoring, such as monitoring bee behaviours in different areas, can be useful in several different contexts.

Strong regulation: The introduction of ambitious regulation is key to driving the sustainability of the biobased industry. Any potential sustainability regulation should consider learnings from earlier regulations, for example, the Renewable Energy Directive (RED), especially when considering scheme recognition processes. If CSLs are recognised under a regulatory framework such as that in RED and the ambition of the regulation in question increases, CSLs in general would not want to give up their official recognition. Thus, they will modify their standards to match the ambition levels of legislation.

This is also the case for future and potential regulations. CSLs might want to align, for example, their traceability processes with potential proposed directives to stay ahead of their competitors. CSLs should align their long-term business strategies with future regulatory trends. However, this requires clear and predictable regulatory processes and avoiding backtracking on ambition.

Regulatory requirements can give ambitious schemes leverage to push for more ambitious requirements. The BMT can be a supportive tool to assess CSL alignment with EU sustainability goals.

2.4.3.1 Circular and economic categories

Due to the nature of the circular economy, cross-sector and multistakeholder collaboration is critical throughout the value chain to ensure success. Collaboration between different initiatives, projects, and sectors is critical to finding new ways of collaboration and resource efficiency improvements. Making changes to the design of products that promote circularity is challenging, as changes may affect every phase of the value chain. This requires resources and possibly new infrastructure. For operators to invest, clear incentives and/or penalties should be put in place; anything that requires a significant shift from operators without them having a strong understanding of the benefits should be the target of attractive incentives by both schemes and policymakers.

Regarding concerns about unintentionally excluding smallholders, many standards, such as RSB, have created separate standards for smallholders and opportunities for group certification.

To overcome the variety of barriers, different actors in the biobased industry must be brought together. Even though, in the end, the CSL can determine its own ambition levels, the practical application will be done by stakeholders such as producers.

3. Conclusions

The SUSTCERT4BIOBASED project, through its engagement with standardisation bodies and CSL owners and the development of the BIOBASEDCERT Monitoring Tool (BMT), provides valuable insights into the current landscape of sustainability certification for biobased systems. The comparative analysis with EN 16751 highlights areas where existing standards could be strengthened, particularly concerning circularity, detailed social requirements, and specific environmental management aspects like chemical use. The positive reception and formation of a task force within CEN/TC 411 WG4 indicate an openness to incorporating these broader sustainability considerations into future standard revisions.

In this brief, overarching findings and cross-cutting areas for improvement of CSLs were presented, derived from D3.2. The assessment of various CSLs using the BMT reveals that each CSL has potential room for improvement to varying degrees. While core environmental and social requirements, especially mandatory ones aligned with existing regulations, are often covered, gaps were especially seen in the Circularity and Economic categories, as well as in the basic and advanced requirements across all categories. The BMT proves effective not only in identifying opportunities for improvement but also in encouraging CSL owners to improve the coverage and ambition level of their systems to stay competitive by comprehensively addressing key sustainability criteria and requirements. The scope-defining exercise achieved through the application of the self-assessment questionnaire by the CSLs is a crucial component, ensuring the relevance and efficiency of the BMT assessment process. Additionally, it provides the CSL owners with a quick overview of the sustainability principles within their scope and a way to evaluate their level of coverage of these. When comparing the coverage assessed by CSLs themselves in the self-assessment questionnaire to the results of the BMT assessment carried out by the BIOBASEDCERT cluster, it was revealed that there is significant alignment but that some divergences were also observed. This can be due to the differences in the perception of the CSL owners on what aspects should be included in the principles, as this level of detail is not included in the questionnaire. To provide an impartial analysis, it is advised that the BMT assessment would be carried out by a third party; however, the self-assessment questionnaire filled by CSL owners can provide useful input in defining the scope. It is important to discuss with CSL owners and validate the sustainability aspects considered outside scope.

Several barriers were identified that hinder the widespread adoption of more ambitious sustainability requirements by CSLs, ranging from economic viability concerns for operators and schemes to the technical and governance complexities of implementing and credibly auditing stricter criteria, particularly in areas like life cycle analysis, biodiversity, and social conditions. Especially the lack of regulation specific to biobased product sustainability means further complicates the landscape.

Overcoming these barriers requires a multi-faceted approach. Investment in technology, particularly in digital tools for assurance, is needed. Crucially, ambitious and predictable EU-level regulation can provide a necessary baseline and leverage for CSLs to increase requirements. Enhanced collaboration across value chains and sectors is vital, especially for advancing circularity. Ultimately, improving the sustainability credentials of the biobased sector requires efforts from a variety of stakeholders, including standard writers, scheme owners, industry actors, and policymakers, by utilising tools like the BMT to guide progress towards greater effectiveness, robustness, and comprehensiveness of CSLs.

4. References

1. Mori Junior, R., Franks, D. M., Ali, H. S. (2016), Sustainability certification schemes: evaluating their effectiveness and adaptability. *Corporate Governance*, 16(3), 579 – 592. <http://dx.doi.org/10.1108/CG-03-2016-0066>
2. Marx, A., Depoorter, C., & Vanhaecht, R. (2022). Voluntary Sustainability Standards: State of the Art and Future Research. *Standards*, 2(1), 14-31. <https://doi.org/10.3390/standards2010002>
3. OECD. (2022). The role of sustainability initiatives in mandatory due diligence. <https://mneguidelines.oecd.org/the-role-of-sustainability-initiatives-in-mandatory-due-diligence-note-for-policy-makers.pdf>
4. IISD (2016). Quantifying the Challenges of Adopting Sustainability Criteria for Biofuel Production. <https://www.iisd.org/system/files/publications/sustainability-criteria-biofuel-production.pdf>
5. ALIGN Project. https://green-forum.ec.europa.eu/business-and-biodiversity/our-activities/project-align_en
6. IPBES Business and Biodiversity Assessment. <https://www.ipbes.net/business-impact>
7. Science-Based Targets for Nature. <https://sciencebasedtargetsnetwork.org/how-%20it-works/the-first-science-based-targets-for-nature/>
8. ECOS (2021). Durable, repairable and mainstream. How ecodesign can make our textiles circular. <https://ecostandard.org/wp-content/uploads/2021/04/ECOS-REPORT-HOW-ECODESIGN-CAN-MAKE-OUR-TEXTILES-CIRCULAR.pdf>
9. Sustainability Directive. (2025). What Are the Key Barriers to Widespread Adoption of Biobased Materials? <https://sustainability-directory.com/question/what-are-the-key-barriers-to-widespread-adoption-of-bio-based-materials/#:~:text=Higher%20costs%2C%20performance%20gaps%2C%20scaling,to%20bio%2Dbased%20material%20adoption.>
10. Climate & Clean Air Coalition. (n.d.) Open waste burning prevention. <https://www.ccacoalition.org/projects/open-waste-burning-prevention>
11. Mebratu, D., Mbandie, A., (2022). Open burning of waste in Africa: Challenges and opportunities. https://www.researchgate.net/publication/370299701_Open_burning_of_waste_in_Africa_Challenges_and_opportunities
12. The Consumer Goods Forum. (2020). Fixing the Business of Food. How to Align the Agri-food Sector with the SDGs. <https://www.theconsumergoodsforum.com/wp-content/uploads/glm-Fixing-the-Business-of-Food-2020-Report.pdf>
13. German Development Institute. (2017). Drivers and Constraints for Adopting Sustainability Standards in Small and Medium-sized Enterprises (SMEs) and the Demand for Finance. https://www.idos-research.de/uploads/media/MSME_Case_Studies_10_2018.pdf

Annex. Self-assessment questionnaire

The purpose of the self-assessment questionnaire is twofold: (1) help determine the scope of the BMT content-level assessment and (2) provide the opportunity for schemes to self-assess their coverage of the BMT principles prior to the assessment.

Pre-determining the scope reduces unneeded workload and makes the assessments more representative and fairer. Self-assessment can be used as a mini-sized BMT assessment and can also be interesting to compare to the results of the full assessment.

In the document, the user fills in the name of the certification scheme or label, as well as chooses the applicable feedstock from dropdown menus that list the feedstock used in the content level (agrarian and forestry residues; crop; forest; waste and residues) and the applicable value chain actors (biomass producer; industrial processor, final manufacturer).

Scope-defining feature

Each principle (e.g., *Chemical use management*) of the BMT is listed on a separate row in the Excel, followed by examples of the themes contained in the principle (e.g., *Plant protection products, pest management, fertilisers, chemical spills, storage of chemicals, hazardous substances*). In an adjacent “Applicability” column, the user can choose whether the principle is ‘applicable’ or ‘not applicable’. If ‘not applicable’ is chosen, the Excel prompts the user to fill in a justification for why the sustainability theme is not applicable. The user can either choose from one of the pre-determined options (not relevant to feedstock/product covered; not relevant to value chain actors(s) covered; specialised scheme/label), or they can choose “Other, please elaborate”, after which the user can write out themselves a justification in the following column.

Self-assessment

Accordingly, for each principle, the user can also fill in an estimated coverage based on the name of the principle but also on the example given of the themes within the principle. The user can choose if the coverage is either full, partial or absent. In the adjacent column, the user can add a reference to the relevant document. For example, if the user determines that the CSL has “Full” coverage of the Climate change management principle, the user can link the standard in question and provide the page numbers for the section on climate change management.

Table 2 Self-assessment questionnaire

Name of certification scheme or label	Name of responder	Date		
[...]	[...]	[...]		
Applicable feedstock 1	Applicable feedstock 2	Applicable feedstock 3	Applicable feedstock 4	Other?
Select: [Agrarian and forestry residues] [Crop] [Forest] [Waste and residues]	Select: idem	Select: idem	Select: idem	
Applicable value chain actor 1	Applicable value chain actor 2	Applicable value chain actor 3	Other?	
Select: [Biomass producer] [Industrial processor] [Final product manufacturer]	Select: idem	Select: idem		

Principle	Examples of themes within principle	Applicability	Justification for non-applicability	Further justification for non-applicability	Coverage	Reference to documents (for Column "Coverage")
-----------	-------------------------------------	---------------	-------------------------------------	---	----------	--

ENVIRONMENT

Environmental management	Environmental management plans with targets and measures	Select: [Applicable] [Not applicable]	Select: [Not relevant to feedstock/product covered] [Not relevant to value chain actor(s) covered] [Specialised scheme/label (e.g. only focused on carbon neutrality)] [Other, please elaborate]	[...]	Select: [Full] [Partial] [Absent]	[...]
Climate change management	Greenhouse gas emission calculation, emission targets, emissions reporting, reduction actions	Select: idem	Select: idem	[...]	Select: idem	[...]

Sustainable land use management	Raw material sourcing, forest management, land conversion, regenerative practices, low ILUC risk	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
Protection of biodiversity	Protection of high biodiversity value areas, invasive species, habitat fragmentation, biodiversity assessment and management	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
Chemical use management	Plant protection products, pest management, fertilisers, chemical spills, storage of chemicals, hazardous substances	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
Soil management	Soil quality, soil erosion, nutrient management	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
Air quality	Air pollution targets and monitoring	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
Water quality and conservation	Water use efficiency, water pollution prevention, water quality	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
Energy use & efficiency	Energy use reduction targets, renewable energy use targets	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]

CIRCULARITY

Circular resource use	9R framework and cascading use, share of circular inflows in production, circular procurement	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
Circular design and material cycling	Product durability, repairability, recyclability, material efficiency, residual flows	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]

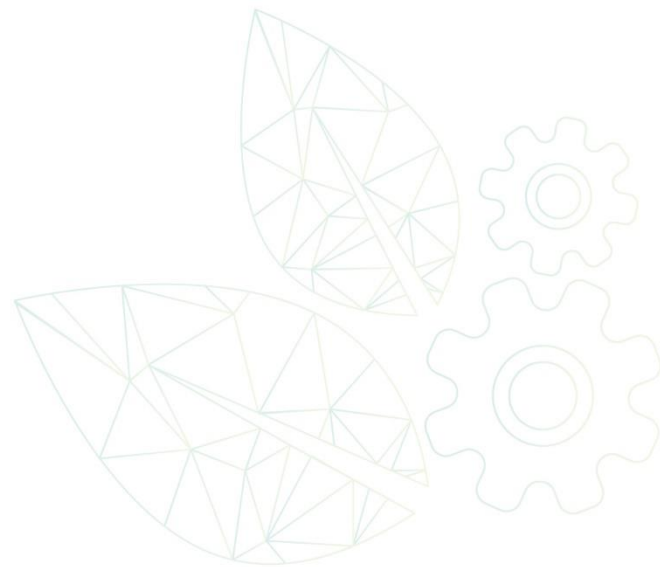
Responsible waste management	Waste storage and transportation, limited landfill and energy generation usage	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
-------------------------------------	--	------------------------	------------------------	-------	------------------------	-------

SOCIAL

Labour and human rights	Human rights, ILO Core Conventions, child labour, forced labour, fair remuneration, freedom of association, collective bargaining, gender equality, discrimination and harassment, grievance mechanisms, fair contracts, ethical labour providers, training, social security	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
Healthy and safe working conditions	Health& safety, hygiene, working hours, employer-provided accommodation	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
Wellbeing of the local community	Legal rights to land/water use, stakeholder engagement, local development, food and water security	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
Wellbeing of consumers	Ability to give feedback, product health&safety	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]

ECONOMIC

Economic and financial viability	Business plans and records	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
Fair business practice	Policies and procedures, anti-corruption, bribery and fraud, supply chain relations	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]
Economic risk management	Financial risk and vulnerability management	<i>Select:</i> idem	<i>Select:</i> idem	[...]	<i>Select:</i> idem	[...]



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.

PARTNERS



Stichting Wageningen Research (WR)
www.wur.nl



Fundacion Circe Centro de Investigacion de Recursos y Consumos Energeticos (CIRCE)
www.fcirce.es



White Research SRL (WHITE)
white-research.eu



Environmental Coalition on Standards (ECOS)
www.ecostandard.org



Control Union Certifications Germany GmbH (CU)
www.controlunion-germany.com

CONTACT US

info@sustcert4biobased.eu

- Sustcert4biobased
- @SUSTCERT4BIO
- SUSTCERT4BIOBASED
- SUSTCERT4BIOBASED

VISIT

www.sustcert4biobased.eu