

D4.1

Concept of the monitoring system



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Partners short names

TUB	Technische Universität Berlin
UNITELMA	Università degli studi Unitelma di Roma
UNI	Ente Italiano di Normazione
AUA	Geoponiko Panepistimion Athinon
USC	Universidad de Santiago de Compostela
APRE	Agenzia per la Promozione della Ricerca Europea
NOVA	Institut für politische und Ökologische Innovation GMBH
BB	Better Biomass
BAM	Bundesanstalt für Materialforschung und -prüfung
RSB	Roundtable on Sustainable Biomaterials Association
ISEAL	Iseal Alliance

Abbreviations

STAR4BBS	Standards for Sustainability Transition Assessment Rules for Bio-Based Systems
SCS and Labels	Sustainability Certification Schemes and Business-to-business Labels
ITC	International Trade Center
JMS	Joint Monitoring System



Executive Summary

The STAR4BBS project (Sustainability Transition Assessment Rules for Bio-Based Systems) is a Coordination and Support action, which addressed this Horizon Europe call (HORIZON-CL6-2021-ZEROPOLLUTION-01-07: *International and EU sustainability certification schemes for bio-based systems.*) One of the main outputs of the STAR4BBS project is a new monitoring system to assess the robustness of existing SCS and labels and their effectiveness in achieving EU sustainability targets and priorities relevant to the bioeconomy.

Two other consortia were awarded grants under the same Horizon Europe call. The three 'sister projects' work together in the implementation of different joint activities, including the Joint Monitoring System, of which the initial proposal, accepted by the EU officials in June 2023, is included in Annex 4.

This STAR4BBS project report presents a first conceptualisation for the monitoring system – a concept which will be adapted as the project and cross-project collaboration progresses. The report also recommends next steps for the sister projects to take to further refine the concept. The concept presented in this report was developed following the Sustainability Benchmarking Good Practice Guide (ISEAL, 2020), applying research and analysis produced through the STAR4BBS project to date, and incorporating input from project stakeholders and two other sister projects.

Step 1: Audience and Purpose

The first step in developing a monitoring system is to define the audience and purpose of the system. Current thinking about the purpose of the system is to:

- give EU policymakers an understanding of how existing SCS and labels contribute to EU sustainability priorities for the bioeconomy, providing an assessment of the robustness and effectiveness of specific schemes, and
- to support and incentivise scheme owners to improve and harmonise their systems by identifying similarities, gaps and potential weaknesses in their content and system characteristics

The report analyses what functionalities the system will need to provide in order to meet its purpose and serve the needs of these target audiences. An important next step is to confirm the statement of purpose and refine and prioritise the list of functionalities the monitoring system will need to provide to meet the needs of the target audience.

Step 2: Elements to include

The second step in developing a monitoring system is to determine the content or elements of the system. This includes both which SCS and labels are included in the system and what information about each SCS that will be collected and used for analysis in the monitoring system.



STAR4BSS has identified 55 schemes and labels that are highly relevant for the monitoring system (*STAR4BBS, 2023b*). These schemes are very diverse (e.g., many different sectors and parts of the supply chain, many versus one sustainability issue), which adds complexity for the evaluation model to be used in the monitoring system.

The monitoring system will cover both sustainability performance and operational requirements. The report analyses the ISEAL Credibility Principles as one source of input into what specific topics each component of the monitoring system should address. Once the topics are determined, it is recommended that the monitoring system adopt criteria and indicators from recognised external frameworks to improve both the quality of the benchmark and the potential consistency with existing monitoring systems. Important next steps include deciding which frameworks to align with and determining what type and structure of indicators will be necessary to implement that evaluation structure.

Step 3: Evaluation model

The third step is the development of the evaluation structure for the monitoring system - the way in which the data collected about each SCS or label will be analysed and assessed to support achievement of the defined purpose for the benchmark.

There are four basic evaluation models that are commonly applied in sustainability benchmarks. The sister projects have recommended combining a Threshold Model and an Improvement Model for the design of the new monitoring system. The report reviews potential challenges with this desired evaluation model, and also identified design principles to follow to address these challenges. The report recommends developing an evaluation system that is in the first instance focused on improvement and avoiding the use of ranking in the final communication of evaluation results. Important next steps include developing prototypes of how the information coming out of the evaluation model could be analysed and presented to users, and planning for pilot testing and stakeholder consultation on any thresholds, the evaluation approach, and the communication of results.



1 Introduction

1.1 Background

The EU Bioeconomy Strategy defines bioeconomy as “the production of renewable biological resources and the conversion of these resources and waste streams into value-added products, such as food, feed, bio-based products and energy”. The transition to a bioeconomy was a key element for smart and green growth in Europe under the Europe 2020 Strategy and continues to play an important role in the EU Green Deal, particularly for the implementation of the Circular Economy Action Plan and the 2030 Climate Target Plan.

However, the rapid shift towards a bioeconomy in Europe and other countries has raised concerns about serious unintended consequences such as driving indirect land use change (ILUC). This has given rise to stronger sustainability criteria in key legislation, notably the revised EU Renewable Energy Directive (2018), but also to a complex and expanding network of sustainability certification schemes (SCS) and labels. These schemes and labels differ significantly in scope, assurance models, capacity for traceability, and transparency.

In 2021, Horizon Europe called for projects to 1) enhance bio-based value chains transparency in internal and EU trade through business-to-business labels of biological resources and bio-based materials and products, and to 2) increase harmonisation of existing international and EU certification schemes with a monitoring system and indicators of their effectiveness and robustness. The STAR4BBS project (Sustainability Transition Assessment Rules for Bio-Based Systems) is a Coordination and Support action, which addressed this Horizon Europe call (HORIZON-CL6-2021-ZEROPOLLUTION-01-07: *International and EU sustainability certification schemes for bio-based systems.*) One of the main outputs of the STAR4BBS project is a new monitoring system to assess the robustness of existing SCS and labels and their effectiveness in achieving EU sustainability targets and priorities relevant to the bioeconomy.

Two other projects – HARMONITOR (Harmonisation and Monitoring Platform for Certification Schemes and Labels to Advance the Sustainability of Bio-based Systems) led by the SQ Consult, and SUSTCERT4BIOBASED (Sustainability Certification for Biobased Systems) led by the Stichting Wageningen Research, were also awarded grants to address the same Horizon Europe call. The three ‘sister projects’ work together in the implementation of different joint activities. One of these is the development of a Joint Monitoring System, of which the initial proposal, accepted by the EU officials in June 2023, is included in Annex 4.

The goal of the three sister projects working together to develop a Joint Monitoring System (JMS) is to reduce confusion, divergences, and mistrust among stakeholders by creating a harmonised, overarching monitoring system. This would bring coherence to the space and clarity for policymakers driving the



transition to a bioeconomy in the EU. Working together will allow the projects to build on each other's knowledge and experience, subjecting the JMS to a higher level of scrutiny, and maximising the effective use of resources. The JMS will streamline stakeholder consultations and reduce fatigue while eliminating competition among the three projects and maximise the synergies and impacts of the results. The creation of a JMS will require greater coordination between sister projects, but it is believed to be feasible and worthwhile to work together to provide a more comprehensive and detailed tool, covering a wide range of bio-based sectors and products.

This STAR4BBS project report presents a first conceptualisation of a monitoring system for bio-based SCS and labels. This deliverable provides recommendations for the monitoring system which were generated within the implementation of STAR4BBS project activities. However, the report and other STAR4BBS deliverables will serve as input into development of the Joint Monitoring System.

1.2 Purpose and scope of this document

This concept document is being developed in the first year of the project to guide next steps and key decisions in the design of the monitoring system, following the steps and good practices outlined in ISEAL's Sustainability Benchmarking Good Practice Guide (ISEAL, 2020).

This is not intended to present the final concept for the system but rather to provide initial recommendations about what the monitoring system will need to achieve, include and address. This conceptualisation for the monitoring system should not be taken to represent the final outputs of all ongoing work of the consortium partners. As inputs to the monitoring system are finalised, the concept will be adjusted and refined.

Benchmarking or monitoring system?

ISEAL's Sustainability Benchmarking Good Practice Guide refers to 'benchmarking', whereas the EU Horizon call to which STAR4BBS responded refers to 'monitoring systems'. Is there a difference? The ISEAL guide defines benchmarking of sustainability standards as 'the assessment of multiple sustainability standards (VSS), policies, tools or company performance against fixed reference points, enabling comparability of their relative scope, coverage, rigor and outcomes'. This is the spirit behind the monitoring system. In this document, we are treating the terms 'benchmarking system' or 'benchmark' or 'benchmarking exercise' as synonymous with 'monitoring system'.



2 Methodology

2.1 Following good practice in sustainability benchmarking

The STAR4BBS consortium and the sister projects have agreed to use ISEAL's Sustainability Benchmarking Good Practice Guide (ISEAL, 2020) and the ISEAL Credibility Principles (ISEAL, 2021) as frameworks to guide the development of the Joint Monitoring System (See Annex 1 for more detail on ISEAL and the Credibility Principles). This report on the concept for the monitoring system is structured following the steps in the good practice guide methodology. The Credibility Principles were used as input into the content of the system (see chapter 4).

Other existing benchmarking systems (such as most of those reviewed in STAR4BBS Deliverable 1.4 Report on existing monitoring systems) were similarly developed based on the ISEAL Credibility Principles and following the approach recommended in the good practice guide. The Harmonitor sister project also used the Credibility Principles to frame a recent stakeholder survey sent in the context of that project.

The Sustainability Benchmarking Good Practice Guide recommends that organisations and initiatives that are considering carrying out a benchmarking exercise think through their approach in 5 steps:

- **Step 1:** Determine the purpose and audience of the benchmark
- **Step 2:** Determine the content of the benchmark.
- **Step 3:** Determine the evaluation structure of the benchmark.
- **Step 4:** Implement the benchmarking.
- **Step 5:** Communicate the results.

In practice these steps are not sequential, but they are highly connected. The first three steps are about the conceptualisation of the monitoring system and are therefore also the focus of this report: the three main chapters of this report each address one of the steps. The final two steps are about the implementation of the system and will be used to guide the work of the STAR4BBS consortium in later years of the project.

In addition to presenting these 5 steps, the sustainability benchmarking good practice guide identifies core principles that should inform decisions made in the design of a benchmarking system.

- **Rigour:** *Benchmarking exercises and programmes are structured and implemented in ways that are sufficient to produce quality outcomes.*
- **Accessibility:** *Benchmarking exercises and programmes avoid structures that create unnecessary barriers to participation and seek to minimise the reporting and engagement burden for entities being benchmarked.*
- **Efficiency:** *Benchmarking exercises and programmes are structured as simply as possible and avoid redundancies.*
- **Improvement:** *Benchmarking exercises and programmes are structured to incentivise better practices in the entities that they cover.*



- **Transparency:** *Relevant information is made freely available in an accessible manner.*
- **Stakeholder engagement:** *Interested stakeholders have appropriate opportunities to participate in and provide input to the process.*
- **Impartiality:** *Benchmarking exercises and programmes identify and mitigate conflicts of interest throughout their operations.*

The first four principles are achieved through the design and structure of the benchmark itself and therefore have been used to inform the analysis and recommendations provided in this report. The last three are primarily about the processes and operations of benchmarking initiatives and will become very important for STAR4BBS and the sister projects as the monitoring system moves into an implementation phase.

2.2 Incorporating feedback of stakeholders and consortia partners

The STAR4BBS consortium's engagement has sought stakeholder feedback on initial ideas about the conceptualisation of the monitoring system during two co-creation workshops (January 26, 2023, and May 26, 2023), as well as a joint public meeting (June 7, 2023, during the EUBCE). These meetings provided an opportunity to consult with stakeholders about the first steps in the benchmarking good practice guide (decisions about the audience, purpose, content, and evaluation structure of the monitoring system). Initial ideas on these topics have also been discussed in coordination calls with the sister projects to prepare the proposal for the Joint Monitoring System and then to coordinate on the development of this system. Feedback received from stakeholders and consortia members has informed the recommendations presented in this report.

Other important inputs considered in the development of this report have been:

- Consultation with the International Trade Centre regarding the ITC Standards Map and participation in meetings (led by TUB) with organisations leading other monitoring systems (STAR4BBS Deliverable D1.4 Report on existing monitoring schemes, with recommendations for new system),
- Consultation with ISEAL staff regarding application of the ISEAL Credibility Principles to recommendations regarding the content of the monitoring system, and
- A review of draft STAR4BBS deliverables, including:
 - *Deliverable D1.1 Report on policy sustainability targets*
 - *Deliverable D1.2 Report on existing international and EU SCS and labels for feedstock and bio-based materials and products*
 - *Deliverable D1.4 Report on existing monitoring schemes, with recommendations for new system*

All of the early STAR4BBS deliverables, including this report on the conceptualisation of the monitoring system, provide important early inputs into the monitoring system. The concept will continue to be refined over time as



additional research emerges from the sister projects and as more stakeholder consultations take place.



3 Step 1: Determine the audience and purpose

3.1 Defining the target audience

A critical decision in the development of a benchmarking initiative is the choice of audience(s) for the benchmark. Identifying the needs of the target audiences and how they could use the results of a benchmark then helps define the purpose. The purpose in turn informs decisions regarding content, evaluation structure, and communication of results can be made.

The monitoring system will be publicly available and thus accessible to a wide range of stakeholders. Nonetheless, it is still important to identify the primary intended audience in order to inform the purpose and design of the system. In a meeting in December 2022, the STAR4BBS consortia decided to focus on European Commission / EU policymakers and certification schemes (SCS) and labels as the primary audiences for the system (See JMS proposal in Annex 4)

3.2 Defining the purpose of the monitoring system

From January to May 2023, conversations with various groups of stakeholders, including policymakers, partners of the sister projects, the STAR4BBS consortium members, and the Joint Advisory Board and several SCSs applicable to the bio-based value chains, helped articulate how the monitoring system could support its target audiences. At a high level, current thinking about the purpose of the system could be summarised as follows:

- 1) To give EU policymakers an understanding of how existing SCS and labels contribute to EU sustainability priorities for the bioeconomy, and an assessment of the robustness and effectiveness of specific schemes
- 2) To support and incentivise scheme owners to improve and harmonise their systems by identifying similarities, gaps and potential weaknesses in their content and system characteristics

This statement of purpose will undoubtedly be revisited and further clarified over time. More engagement with the two primary audience groups in the second year of the STAR4BBS project will help ensure that the purpose articulated by STAR4BBS and the sister projects will meet the needs of the target audiences.

3.3 Specifying needed functionalities

The articulation of the audience and purpose for the monitoring system helps define what functions the monitoring system needs to provide for each audience.

For EU policymakers, a monitoring system that meets the defined purpose would:

- Increase transparency regarding the performance of existing SCS and labels for biobased systems, including an evaluation of their effectiveness and robustness.



- Help identify SCS and labels that would support fulfilment of regulations (analogous with REDII for biofuels/bioenergy)

For certification schemes and labels, the monitoring system would:

- Help scheme owners identify gaps and weaknesses in their own systems
- Provide scheme owners with a transparent comparison of their scheme structure, content, and outcomes against other schemes
- Support identification of key points of convergence and divergence with other schemes, highlighting potential opportunities for collaboration and alignment
- (If the monitoring system extends beyond the end of this project) Document and provide recognition for scheme improvement over time

For both audiences, the monitoring system could also:

- Provide an overview of the supply chain, product, and content coverage of SCSs in biobased supply chains, shedding light on how well positioned existing SCS and labels are to drive improvement and provide traceability in biobased industries
- Support identification of gaps in SCS coverage, content, or performance

The STAR4BBS consortium and sister projects have agreed that to fulfil these functions the monitoring system will need to include information on three levels: system characteristics (governance, assurance, etc), sustainability content criteria, and scheme performance and outcomes. (See Text Box 1, and Annex 4)

Text Box 1: Agreed basic structure of the monitoring system

The STAR4BBS consortium (and sister projects) have all agreed that the monitoring systems produced by the project will incorporate information about the SCS and labels on three different levels:

I) System Level: the characteristics of the certification scheme, including its governance and the development process of standards or labels.

II) Content Level: the substantive requirements of the certification scheme, particularly those related to EU environmental, social, economic, and circularity priorities and targets.

III) Outcome Level: evidence of the performance and impact generated by the SCS and labels

For each level, the monitoring system will have a standardized set of indicators (yet to be defined), housed in a centralized *database*. The monitoring system will use this data as the basis for analysis, interpretation, and ultimately communication of results.



The Table in Annex 2 looks in more depth at the specific functionalities each level of the monitoring system will need to provide to meet the defined purpose. This table can be used as a reference for shaping the content, analysis, interpretation and user interface/communication for each level of the system.

3.4 Identifying principles of credible benchmarking of particular importance to the target audience

It is important to identify which principles of credible benchmarking will be of particular importance to each of the two primary audience groups and use these principles to assess all decisions taken in the further design of the monitoring system.

For EU policymakers any monitoring system will need to pay close attention to the principle of Rigour (*...structured and implemented in ways that are sufficient to produce quality outcomes*).

Policymakers need to trust the quality of the analysis the system produces. However, rigour does not necessarily mean complexity and completeness. There will likely be limited information on some desired characteristics or outcomes of SCS and labels, and many SCS will not yet address some desired content components (for example, circularity). EU policymakers will lose some of the key benefits of the system if the pursuit of rigour leads to the exclusion of many SCCs from the monitoring system, or if the analysis of information emerging from the system ends up being too complex for EU policymakers to easily understand. To avoid this problem, it will also be important to consider the trade-offs between rigour and the principles of Accessibility (*...avoid structures that create unnecessary barriers to participation*) and Efficiency (*...structured as simply as possible*).

One of the intended functions of this monitoring system is to support the fulfilment of legislation (following the EU REDD model, for example). In this context, the operations and governance of the system become very important. The principles of Transparency (*...information is made freely available*), Impartiality (*...identify and mitigate conflicts of interest*), and Stakeholder engagement (*...Interested stakeholders have appropriate opportunities to participate in and provide input*) should be given high priority.

For SCS and labels, a new monitoring system would need to have the principle of Improvement (*...structured to incentivise better practices in the entities that they cover*) at its heart. Accessibility (*...seek to minimise the reporting and engagement burden for entities being benchmarked*) and Efficiency (*structured as simply as possible and avoid redundancies*) are also of great importance for the SCSs, as they will provide information for this monitoring system.

To rely on this benchmark to inspire continual improvement, SCS and labels will need to trust the results of the assessment and will need to have a chance to verify



data and to feel comfortable with how their systems are portrayed. The principle of Rigour is therefore also of importance to the SCSs.

3.5 Recommended next steps on audience and purpose

- Confirm the above statement of purpose for the monitoring system and the key principles of credible benchmarking that will guide all decisions made in designing and implementing the system
- Hold focus groups with each target audience to get input on the defined purpose, the functions that the monitoring system would need to fulfill for each audience, and how each audience would prioritise functionalities if choices needed to be made
- Refine the Table in Annex 2 with a prioritised list of functionalities to include at each level of the monitoring system to address audience needs



4 Step 2: Determine which elements to include

Step 2 in the conceptualisation of the monitoring system is about determining the ‘elements’ of this system – what the content of the system will be. This includes both which SCS and labels are included in the system and what information about each SCS that will be collected and used for analysis in the monitoring system.

4.1 Determining which entities to benchmark

In determining which entities will be benchmarked, a first question to answer is which initiatives are potentially eligible to be included in the scope of the benchmark. A second is how to determine which of the potentially eligible systems will in fact be included in the monitoring system.

The target scope of the Joint Monitoring System has been defined as sustainability certification schemes and labels for biological resources intended for industrial biobased value-chains and to biobased materials and products, excluding food/feed, biofuels, bioenergy, and cultural/recreation sector. SCS and labels covering the entire value chain and capturing all aspects of a product’s life cycle (with each main stage of the value chain being covered separately) will be considered. While the JMS will be applicable to products traded within the EU, the evaluation of entire value chains of biobased products will cover other geographical regions involved in the production and handling of the products (i.e., production of feedstock and all upstream and downstream operations within the supply chain).

Applying the principle of Accessibility, the monitoring system should be open to all SCS and labels that fall within this scope. Including a full picture of all available schemes will help achieve the stated purpose of the scheme for the target audiences.

For practical reasons, however, it may not be feasible to achieve this coverage goal, at least not within the lifetime of this project. It is therefore important to think carefully through strategies for reducing the number of SCS and labels included in the system and to avoid any approach used undermining the core purpose of the monitoring scheme. If the SCS and labels that are presented in the monitoring system do not accurately reflect the range of available schemes, then the monitoring system will not be able to provide an overview of SCSs in biobased supply chains or identify gaps in SCS coverage, content, or performance. Both of these functions are important to the target audiences.

One particularly problematic approach to reducing the list of SCS and labels would be to include only SCSs for which most data is available. This approach would result in a skewed view of SCSs and would obscure one of the important lessons one could learn through the monitoring system – where extra effort by scheme owners and researchers is needed to improve data availability. We recommend testing any proposed exclusion criteria to ensure consistency with the purpose and desired functions of the monitoring system before adopting this as the strategy to narrow down SCS and labels.



The STAR4BBS consortium has already undertaken the task of identifying and prioritising SCS and labels for inclusion in the monitoring system. A review and analysis of existing international and EU SCS and labels within the target scope was conducted (*Deliverable D1.2 Report on existing international and EU SCS and labels for feedstock and bio-based materials and products*). This resulted in a list of more than 100 schemes and labels. This broad list was analysed to capture relevant characteristics of each scheme/label including, among others, geographical coverage, type of feedstock, value chain stages covered, sustainability criteria, economic costs, transparency, and traceability mechanisms. The schemes were then categorised by sector and coded against a set of criteria covering:

1. Relevance of the sustainability focus of the scheme
2. The sector and value chain covered by the scheme
3. Type of scheme and scheme characteristics
4. Scheme usage and available information

For an SCS or label to be included in the STAR4BBS pre-selection list, at least two of the bulleted criteria needed to be met. This prioritisation approach was intended to identify the schemes most likely to be relevant for the sectors and policy priorities addressed by STAR4BBS. The result was validated in a co-creation workshop; stakeholders had an opportunity to identify and suggest schemes that had not been previously included and to provide input on the criteria used for prioritisation. STAR4BBS Deliverable 1.2 identifies 55 relevant schemes. It is likely that a few other schemes will be identified over the course of the second year of the project and considered by STAR4BBS partners for possible inclusion in the monitoring system.

One challenge identified through this exercise is that the existing schemes are very diverse: they cover many different sectors and parts of the supply chain, and some are focused on one or a small number of sustainability issues. Given these differences, comparisons across schemes risk not producing meaningful results. The challenge of how to address scheme diversity is addressed below in the chapter regarding evaluation approach. In the context of this chapter on Content, the question is whether to reduce the complexity of the evaluation challenge by eliminating whole categories of schemes from analysis (e.g., eliminate single issue schemes). If this approach is adopted, it will be important to be very transparent about which types of SCS and labels were eliminated and why.

4.2 Determining which topics will be addressed in the benchmark

The benchmarking good practice guide suggests that benchmarks assess SCS and labels according to both their sustainability performance requirements and the operational requirements that support their uptake.



- The sustainability performance requirements may include environmental, social and/or economic sustainability, and can be set in different ways: defining acceptable practices; performance metrics; processes that should be followed; or desired outcomes.
- Operational requirements such as assurance, scheme governance, traceability (chain of custody), claims, etc. are important to consider because they can have a significant impact on the sustainability results achieved by an SCS or label.

The monitoring system will cover both sustainability performance and operational requirements by including Content across three components. The System Characteristics component will address operational requirements. The Content and Outcome components will address sustainability performance.

It is beyond the scope of this document to suggest the specific topics to be covered by each component of the monitoring system. Detailed recommendations will be developed and tested during year 2 and 3 of the project. Proposals will be consulted with the Joint Advisory Board, with a broader stakeholder group, and with the sister projects.

The sister projects have agreed that the ISEAL Credibility Principles should be used as one important input into the decision about which topics to include in each level of the monitoring system. These principles of good practice for credible SCS and labels provide a useful reference point for the monitoring system, helping to explain to stakeholders the relevance and purpose of the content included in the monitoring system. Other important inputs will be analyses conducted under the STAR4BBS project– for example, the analysis of relevant policies and the review of existing monitoring systems. In year 2 of the project, the consortium will consider all of these inputs together to formulate a detailed proposal for which topics would ideally be included.

The table in Annex 3 shows how the Credibility Principles could be used to guide and frame the topics, criteria and indicators for each component of the system. As the table shows, the Credibility Principles are particularly useful in providing guidance about the topics to cover in the System Characteristics component of the monitoring system, but they also provide some guidance for the other two components. The following general conclusions can be drawn from the analysis in this table:

- The Systems Characteristics component should be focused on how the system behind the SCS or label supports quality, reliable assessments, and outcomes, ensures stakeholder engagement, and builds trust.
- The Content component should be focused on what the SCS or label is trying to achieve and how the content of the standard will support achieving those objectives and the sustainability objectives of the target audience (e.g., EU legislative priorities)
- The Outcome component should be focused on how and whether the scheme assesses its sustainability outcomes and on the information the scheme and



others make publicly available about the outcomes and impacts of the SCS or label.

4.3 Defining specific criteria and indicators for the monitoring system

Once the topics to be addressed by each component of the monitoring system are determined, the next step is to define specific criteria and indicators. The criteria highlight the specific expectations of the scheme (e.g., public availability of full scheme explanation and policy). The indicators translate the criteria into a measurement framework that can be used in the evaluation stage of the monitoring system. An indicator may be bivariate (e.g., = 0 if full scheme explanation and policies are not available; = 1 if is available), multivariate (e.g., = 1 if first party, = 2 if second party, = 3 if third party assurance model), or continuous (e.g. = number of entities certified to standard). The form of the indicator will need to be adapted to support the chosen evaluation approach (see next chapter).

The following are some important general guidelines to follow in choosing criteria and indicators.

4.3.1 Desired characteristics of criteria and indicators

The criteria for the monitoring system should be clear and incisive, enabling a consistent assessment that results in a robust picture of potential performance of the benchmarked entity. It is recommended that all proposed criteria should meet the following characteristics:

- They are relevant to the purpose of the benchmark
- They allow for meaningful differentiation between SCS
- They are concise
- They employ clear and unambiguous language
- They are accompanied by explanatory guidance where necessary to ensure consistency of interpretation.
- It is clear what available evidence could be used to assess their fulfilment.
- They are based on a mapping of current practices of entities that can be benchmarked.

This last point has been disputed in public consultations of the STAR4BBS project – should the monitoring system include criteria that few or no systems currently meet but that are important to create an effective bio-based economy? Inclusion of this sort of criteria can provide an incentive for improvement over time of SCSs, provided that the criteria are something that the SCS and labels could aspire to address. As one example, the [European Feed Manufacturers' Federation FEFAC Soy Sourcing Guidelines Benchmarking Tool](#) has included criteria and indicators related to carbon footprint data because of its relevance to recent regulation. However, a search of the database shows that none of the benchmarked standards currently provide this information.



Any aspirational criteria like this must be relevant for the benchmarked standards, or at least a clear differentiation must be made between SCSs that could, but have not yet, addressed the criteria and those SCS to which the criteria do not apply. For example, circularity criteria will be less relevant for standards focused only on labour aspects of sustainability or for feedstock standards, than they would be for a product standard. Before any criteria that go beyond current practice are included in the benchmark, it is important to consider whether and how the inclusion supports the purpose and desired functionalities of the benchmark.

4.3.2 Alignment with external frameworks and benchmarks

Adopting criteria and indicators from external frameworks improves both the quality of the benchmark and the potential consistency with existing benchmarking initiatives. Since the start of this project, ISEAL has recommended that the sister projects seriously consider aligning with Standards Map criteria and indicators from ITC’s Trade for Sustainability Development Initiative. Standards Map has benchmarked hundreds of existing standards against a core set of criteria that are aligned with the ISEAL Credibility Principles and cover both system characteristics and standards content. The ITC database today includes hundreds of SCS and labels, and many benchmarking initiatives use ITC’s criteria and indicators and corresponding data as the basis for their work.

ITC criteria and indicators will be most useful for the System Characteristic and Sustainability Content criteria levels of the monitoring system. Figure 1 shows the major categories of criteria included in the database.

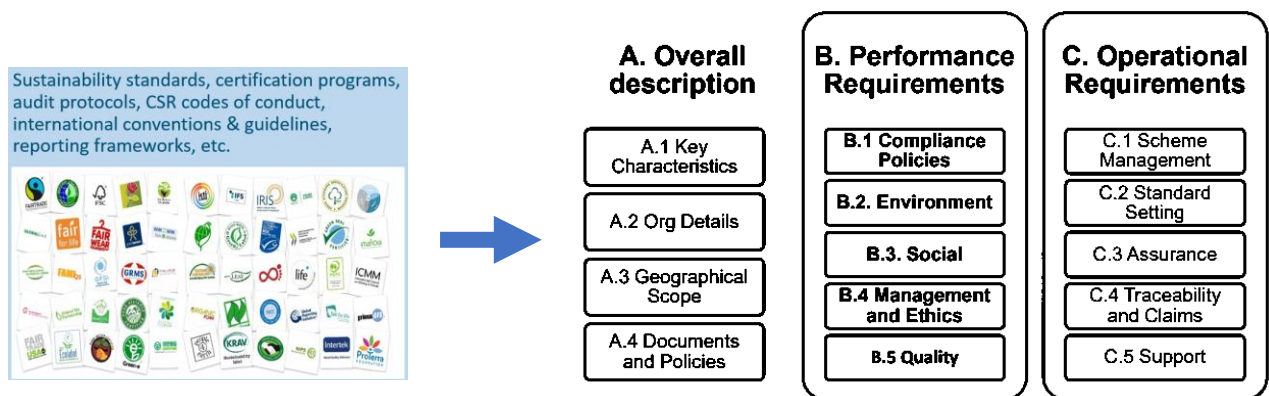


Figure 1. ITC Standards Map requirements, organised by category

ITC regularly collects and validates information from the SCS and labels in the Standards Map database. Therefore, aligning with and using these criteria and indicators would help ensure data availability (now and over time) and also allow STAR4BBS and the sister projects to leverage the testing, guidance, and



knowledge ITC has built up in collecting data from SCS and labels on these criteria and indicators.

In addition to the ITC Standards Map, there are other relevant benchmarking initiatives that could serve as inspiration and a source of alignment or to assist in deciding which of the ITC indicators (e.g., FAO SAFA, WWF CAT, SDG indicators, etc.). For instance, the FEFAC Soy Benchmarking Tool relies exclusively on data collected by ITC, both on core existing ITC indicators and on additional indicators that FEFAC asks to be included. ITC, under contract from FEFAC, renews the data for the benchmark on an agreed schedule (for example once every two years). Schemes that pass the benchmark are shown in the ITC Standards Map as 'FEFAC benchmarked', and an interactive platform with benchmarking criteria and results is also [made available](#) by ITC. (For more detail, see STAR4BBS Deliverable 1.4)

As ITC is the most established and most stable initiative, we recommend relying on this initiative as a primary data source for the monitoring system.

4.4 Deciding how many criteria and indicators to include

Monitoring systems need to guard against a tendency to want to include all potentially relevant criteria and indicators. To achieve the principles of Efficiency (*...structured as simply as possible and avoiding redundancies*) and Accessibility (*seek to minimise the reporting and engagement burden for entities being benchmarked*) it is very important to keep the number of criteria and indicators in monitoring system down as much as possible.

There is an important trade-off between comprehensiveness (e.g., covering all possible topics and criteria of potential interest) and the principles of efficiency and accessibility. The general recommendation within the STAR4BBS consortium is to start small – choose a small core set of criteria, leaving the potential to add over time. Stakeholder input can be one important input into decisions about how to narrow down the criteria and indicator list (See Text Box 2).

The more that existing data sets can be used to generate the information on each of the criteria and indicators (for example by relying on the ITC database) the easier it will be to include more criteria and indicators without increasing the burden on the entities being benchmarked.



Text Box 2: Using stakeholder input to narrow in on priority indicators for the System Characteristic level of the monitoring system

Over the last several months, ISEAL and TUB have led small-scale consultations with stakeholders and with sister project consortium members with the goal of narrowing in on priority system characteristics indicators to include in the monitoring system.

Below are the system characteristics – organized by ISEAL Credibility Principle - that have emerged as priorities from these discussions:

Stakeholder engagement:

- Who manages the standard and who participates in the decision-making
- Stakeholder engagement opportunities, including transparent public consultation on standard and public information on how feedback is used
- Complaints procedure

Transparency:

- Communication of the standard's policies, processes and documents
- Public information on org structure and income / financing structure

Impartiality

- Economic independence from certificate holder and certification body

Reliability

- Type of verification system and audit process (third party verification, audit frequency, what is checked, what qualifies as non-compliance)
- Availability of guidance to support consistent interpretation and implementation
- Documented methodology to assess compliance
- Defined duration of certificate
- Complaints mechanism

Truthfulness

- Claims indicate to what they apply
- Requirements governing use of claims available
- Traceability and chain of custody system

Continual improvement

- How often is standard revised
- Monitoring and evaluation

These topics have been assessed against the ITC Standards Map indicators to determine whether existing criteria and indicators are available on these topics. In year 2 of the project, further consultation with stakeholders, comparison to EU legislative requirements, and an assessment of whether these characteristics are relevant for all types of SCLs will be conducted.



4.5 Recommended next steps on elements of the monitoring system

- Determine whether it is necessary to further narrow down the list of SCSs for inclusion in the monitoring system, and, if so, that the approach adopted is transparent and does not undermine purpose of the monitoring system
- Confirm a decision to build the monitoring system on the basis of the Standards Map database from ITC, adding to this where needed to achieve the purpose of the monitoring system
- For each component of the monitoring system, develop a list of desired criteria to include in the system and begin a process to narrow these down by relying heavily on the agreed purpose of the monitoring system, on stakeholder and expert input, and on the ISEAL Credibility Principles
- Determine what type and structure of indicators will be necessary to implement the evaluation structure that will be used in the monitoring system
- Pilot test the criteria and indicators with a range of different types of SCS and labels to ensure that they can accurately accommodate a diversity of systems



5 Step 3: Determine the evaluation structure

The third step in conceptualising a monitoring system is the development of the evaluation structure. The evaluation structure refers to the way in which the data collected about each SCS or label will be analysed and assessed. The evaluation model must be designed to support achievement of the defined purpose for the benchmark.

5.1 Choosing an evaluation model

There are four basic evaluation models that are commonly applied in sustainability benchmarks. The table below, drawn from the ISEAL benchmarking guidance, lists the models and some pros and cons to using each. In practice, it is very common to develop benchmarks that are a combination of these models.

Based on early conversations led by ISEAL and TUB, there is a general agreement within the consortia that ideal evaluation model will combine the concept of a Threshold with the idea of Improvement:

- In a **Threshold model**, systems are assessed against a minimum level of acceptable performance.
- In an **Improvement Model**, systems are compared to desired practice, which may be beyond where systems currently stand.

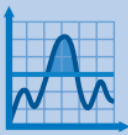



Benchmarking Model	Purpose	Distinguishing Features	Pros	Cons
 <p>Threshold</p>	To qualify entities that meet or exceed a threshold. Often used for recognition	Performance bar set at level of acceptable practice	Simplifies message about which entities are acceptable to use	If poorly designed, can recognise poor performers without differentiating better performers
 <p>Ranking</p>	To compare performance of similar entities through a ranked evaluation	Entities are scored against performance topics and compared	Public communication of results creates incentive for entities to improve	Potential subjectivity in how entities are ranked, particularly if based only on public information
 <p>Peer comparison</p>	To conduct an internal comparison of an entity's own performance against its peers	The reference benchmark is the practices of the benchmarking entity itself	Effective for understanding strengths and challenges compared to peers	Starting with own performance may neglect key issues addressed by others
 <p>Improvement</p>	To encourage improved practices by showing progress toward good practice	Aspirational performance bar set beyond current practice to provide direction and incentive	Encourages improved performance over time	Can have narrow focus on benchmarking programme's topics of interest

Figure 2 Evaluation Models (from ISEAL Benchmarking Guidance)

5.2 Anticipating potential challenges with the desired evaluation model

5.2.1 Current lack of clarity on legislative requirements

Current legislation affecting the bio-economy activities within the scope of this project does not include a mechanism for recognising specific SCS and labels as



evidence of compliance with elements of the legislation, though legislation could evolve in this direction in the future. While there are many policy targets for the bioeconomy, these do not easily translate into specific expectations or requirements for products, sectors, or SCS and labels. Without full clarity on future legislative requirements, it will not at this stage be possible to set a threshold that accurately identifies SCS and labels that support fulfilment of specific regulations. One could set a threshold based on current *expectations* of future legislative developments, but this has the disadvantage that it could reduce information available for policymakers. For example, if only schemes that meet the threshold are assessed, then policymakers will not have a full picture of the characteristics and content of all relevant SCS and labels – information they may need to set policy in the future.

5.2.2 Feasibility of setting meaningful thresholds or improvement steps

Stakeholders have raised concerns about the feasibility of defining meaningful thresholds for the monitoring system. One concern was that it could take an inordinate amount of effort and time to define scientifically relevant thresholds for outcome variables. A second concern is that the legitimacy of a threshold could be questioned, unless the threshold is set to align with a recognised authority (e.g., legislation, ISEAL Credibility Principles) or is devised through a transparent and inclusive public consultation process. Finally, appropriate thresholds could differ across parts of the value chain and across sectors.

There could be similar problems with an improvement model. An improvement model needs to be able to differentiate between systems and progress as they improve. To achieve this, the model needs to recognise meaningful steps towards improvement. Figuring out what meaningful steps would be and identifying steps that would be relevant for all types of SCS and labels will be challenging, especially with increasing diversity among schemes. (See Text Box 3).

5.2.3 Incompatibility between system objectives.

The Threshold component of the analysis is expected to help meet the desire of EU policymakers to understand which standards will support compliance with EU regulations. However, a threshold model could work against the continual improvement objective of particular interest to the second target audience for the benchmark – the SCS and labels themselves. Setting the bar too low could recognise poor performers and disincentivise further improvement. Setting the bar too high could discourage SCSs from participating and, if those not meeting the threshold are excluded from the benchmark, policymakers could lose sight of SCSs that do not yet meet the threshold criteria.



Text Box 3: Accommodating diversity of SCS and labels

The ISEAL benchmarking guide recognises that one of the most significant challenges inherent in benchmarking is how to appropriately recognise the diversity in the SCS and labels that are to be assessed. Benchmarks are, by nature, built on common reference points and yet SCS are increasingly diverse.

- What element of the value chain does the standard address? Standards that are focused on feedstocks are likely to have a very different approach and content coverage than standards focus on end products.
- What sustainability topics does the SCS or label include in requirements? Some SCS and labels are focused on just one topic (e.g., circularity, labour rights) while others aim to be comprehensive sustainability standards.
- How are sustainability performance requirements expressed? Some standards delineate desired practices, others define processes or policies that should be in place, while others require specific performance outcomes. It is not unusual for a standard to use a combination of these.
- How do schemes assess compliance? Standards that focus on driving improvement might recognise enterprises as compliant once they have started on the improvement journey (e.g., meeting only core requirements) while others require enterprises to achieve a high-performance bar before they are considered compliant (e.g., meeting core requirements plus 60% of other requirements).
- What other strategies are applied by scheme owners to achieve results? In some schemes, standards, certification and labelling are the only strategies used to drive change. For other scheme owners, SCS and labels are just part of their strategy. They may also operate capacity building programmes, advocacy campaigns or other measures to achieve their desired outcomes. In the Outcome Level of the monitoring system, it will be important to establish whether the focus is on information about outcomes of standards, certification, and labelling only or about the full range of strategies employed by the scheme owner.

Given these complexities it is important to determine at an early stage of the conceptualization process what the key differences between SCSs to be included in the benchmark are and to test all proposed topics, criteria and indicators (see 4.2 and 4.3) as well as the evaluation models to be used against a variety of different system models. STAR4BBS's work to date in reviewing over 100 SCS and labels provides an important foundation for this upcoming work. Failure to carefully consider system model differences will undermine principles of Rigour (*... produce quality outcomes*) and Improvement (*structured to incentivise better practices in the entities that they cover*)



5.3 Addressing potential challenges with the combined evaluation model

The following design principles will help address these potential challenges:

1. Develop an evaluation system that is in first instance focused on improvement.

This means defining and capturing a performance ladder with two or more meaningful categories of performance through each indicator.¹ For example there could be categories or performance ranges from basic to aspirational. This would permit SCSs to be classified by their current level of performance and compared to a desired level of performance. If the life of the monitoring system extends beyond the end of this project, then an improvement-focused model could also be used to show progress over time by tracking how SCS move up categories of performance.

Criteria-level thresholds can be defined to correspond with a particular level on this performance ladder. For one indicator, the threshold could be set at a 'basic' level of performance, and for another at a higher level, depending on current practice and regulatory ambition. By associating the threshold with a performance level, it is possible to adjust the threshold up or down over time once more is known about legislative developments and the current performance of the SCLs to be included in the system. It would also be possible to create a user-driven threshold model, where users or user groups define thresholds that are meaningful to them before asking the monitoring system to run the analysis.

2. To the extent possible, align the performance categories identified in each indicator – as well as any thresholds -- with recognised references

These references could include ISEAL's Codes of Good Practice, existing or expected legislation, or scientific consensus. A current proposal under consideration by the sister projects is to use existing finalised EU legislation (where it exists) to set the lowest performance bar for benchmark criteria where possible, and to use EU legislative proposals as input into the development of other performance levels.

Where a relevant reference does not exist, it will be important to use transparent stakeholder consultation to gain input on the performance categories and thresholds and/or to provide sufficient scientific backing for proposed performance levels. A meaningful and inclusive stakeholder consultation process is complex and time consuming to organise. This further reinforces the value of using recognised existing references wherever possible.

¹ Note that there could be some indicators that are information only, with no performance implications. This recommendation refers only to indicators intended to differentiate scheme quality and improvement.



Where a reference exists but is too complex to translate directly into performance categories, providing transparent documentation of how the reference material inspired the performance categories and why full alignment was not feasible or desirable will be important.

3. Prioritise transparency and access to full information

Where thresholds are used, this should not result in relevant schemes being excluded from the monitoring system in the hiding of performance ladders for particular indicators.

In communicating about results of the evaluation model, it should always be possible for a user to dig deeper and see that information that behind any summarized or simplified results. For example, if results are summarised at the System Characteristic, Content, or Outcome level, then users should be able to see results for each of the individual criteria and indicators that feed into that.

It is highly likely that information on some indicators will be missing for some schemes. The evaluation system should make this gap clear for users. An evaluation system that highlights (rather than hides) these data limitations will encourage SCSs, the EU, and researchers to invest in filling research and information gaps.

4. Ensure the relevance of criteria, indicators, and evaluation assessments for the SCS and labels included in the monitoring system

Pilot test the evaluation approach – or multiple approaches if various options are under consideration. Any evaluation approach should be tested at the level of the indicator and the level of the monitoring system, for different types of SCSs and labels to ensure that the results of the evaluation are meaningful and understandable.

Given differences in SCS and labels, it is quite possible that multiple forms of evaluation will be necessary to provide a meaningful insight into differences between the schemes. UNITELMA has suggested that it may be necessary to separately compare small groups of schemes that are very like each other in order to generate meaningful conclusions.

5. Avoid introducing scheme ranking in the final communication of evaluation results

The rigor and accuracy of the assessment is very important in a ranking system. It is premature to introduce a ranking system given the anticipated gaps in available information, the potential problems with developing and justifying meaningful performance levels, and lack of clarity about preferences of our target audiences. The first version of the monitoring system should focus on transparency and information provision, rather than providing a ranking of



schemes against each other. If the monitoring system has a life beyond the STAR4BBS project lifespan, then one could consider introducing ranking at a later stage when the system has been fully tested and subjected to stakeholder scrutiny, and if it is determined that ranking with support achievement of the defined purpose of the monitoring system (See chapter on audience and purpose). At present, it does not appear that ranking would be necessary to meet the needs of the target audiences.

5.4 Recommended next steps on the evaluation model

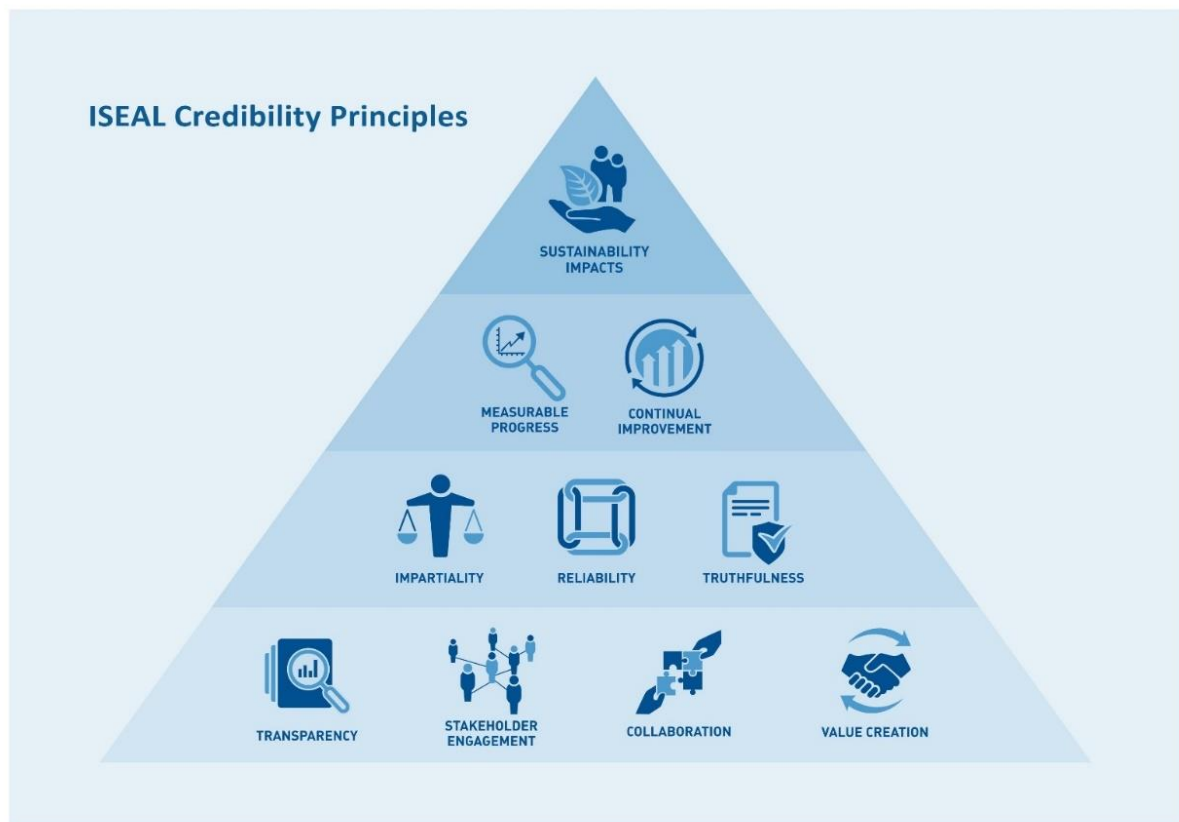
- Identify recognised references that can be used to set performance levels
- As criteria and indicators are being developed, identify meaningful performance levels and possible indicator-level thresholds
- Develop prototypes of how the information coming out of the evaluation model could be analysed and presented to users and test these against the purpose of the monitoring system and these basic principles for the credible benchmarking
- Plan and prepare for pilot testing and stakeholder consultation on both the thresholds, the evaluation approach, and the communication of results



Annex 1: ISEAL and the ISEAL Credibility Principles

ISEAL is a UK-based charity and global membership organisation for sustainability systems, including SCS and labels. ISEAL is globally recognised as an authority on credible practice for sustainability standards and labels. ISEAL’s Codes of Good Practice on standard setting, impacts, and assurance support sustainability systems to improve how they operate and deliver greater impact. Code Compliant members of the ISEAL Alliance have been independently assessed for compliance with ISEAL’s Codes.

The ISEAL Codes are based on ISEAL’s Credibility Principles, which were developed through a global multi-stakeholder consultation. The principles define the core values of credible and effective SCS and labels and provide the foundations for these schemes to deliver greater impact. The Credibility Principles help businesses and governments make informed choices about the systems they work with, pushing the schemes to further improve.



ISEAL has also published good practice guides on other related topics, such as sustainability benchmarking, chain of custody models, and claims.



Annex 2: Functionalities needed for each component of the monitoring system

Function	Overarching functionalities needed	Functionalities needed for each component of the monitoring system		
		System characteristics component	Sustainability content component	Sustainability outcomes component
<p>Transparency on robustness and effectiveness for bio-economy</p> <p>For policymakers: increase transparency regarding the performance of existing CSLs for biobased systems, including an evaluation of their effectiveness and robustness.</p> <p>For scheme owners: Help scheme owners identify gaps and weaknesses in their own systems against content criteria and system characteristics determined to be critical for credibility and effectiveness in the bio-economy space</p>		<p>Compare system characteristics and governance to recognised best practice for sustainability systems (e.g., ISEAL)</p> <p>Enable users to see where gaps exist in existing information</p>	<p>Compare content criteria in SCLs to content areas and practices deemed to be critical for effective biobased systems</p> <p>Enable users to see where gaps exist in existing information</p>	<p>Enable users to find data and analysis for specific CSLs of achieved sustainability outcomes and sustainability improvements on topics directly related to the effectiveness of the bio-economy</p> <p>Enable users to see where gaps exist in existing information</p>



Function	Overarching functionalities needed	System characteristics component	Sustainability content component	Sustainability outcomes component
<p>Support for fulfilment of regulations</p> <p>For policymakers: Help identify certifications and labels that would support fulfilment of regulations²</p>		Compare system characteristics and governance to any system level requirements from EU policy or legislative proposals including traceability and chain of custody models employed	Compare content criteria and requirements of SCLs to requirements in EU regulation and highlight any gaps	(If EU regulation has performance criteria) achieved outcomes of CSLs to requirements in EU regulation and highlight any gaps
<p>Comparison with other schemes</p> <p>For scheme owners: Provide a transparent comparison of their scheme against other schemes, identifying key points of convergence and divergence with other schemes and highlighting potential opportunities for collaboration and alignment</p>		Enable CSLs to compare their results on system characteristics and governance with those of other comparable CSLs (e.g., in same part of supply chain, same commodity etc.)	Enable CSLs to compare their content and requirements with those of other comparable CSLs (e.g., in same part of supply chain, same commodity etc.)	Enable CSLs to compare their performance and outcomes (or evidence of performance and outcomes) with those of other comparable CSLs (e.g., in same part of supply chain, same commodity etc.)

² Legislation affecting the bio-economy activities within the scope of this project does not currently include a mechanism for recognizing specific certification and labelling schemes as evidence of compliance with elements of the legislation, though legislation could evolve in this direction in the future. Without full clarity on future legislative requirements, it will not at this stage be possible to create a monitoring system that identifies CSLs that support fulfilment of specific regulations.



Function	Overarching functionalities needed	System characteristics component	Sustainability content component	Sustainability outcomes component
<p>Show improvement over time</p> <p>For scheme owners: (If the monitoring system extends beyond the end of this project) Document and provide recognition for scheme improvement over time</p>		<p>Provide data for benchmark results at more than one point in time</p> <p>Highlight CSLs that have made improvements</p>	<p>Provide data for benchmark results at more than one point in time</p> <p>Highlight CSLs that have made improvements</p>	<p>Provide data for benchmark results at more than one point in time</p> <p>Highlight CSLs that have made improvements</p>
<p>Support analysis of collective contribution of CSLs</p> <p>For all: Provide an overview of the supply chain, product, and content coverage of CSLs in biobased supply chains, shedding light on how well positioned existing CSLs are to drive improvement and provide traceability in biobased industries and where the gaps may lie</p>	<p>Show coverage of CSLs by supply chain level and product/sector</p> <p>Show where there are CSLs and where there are gaps</p>	<p>Show where there are CSLs with specific characteristics and where there are gaps</p>	<p>Show where there are CSLs with specific type of content and where there are gaps</p>	<p>Show where there are CSLs with performance level or evidence of performance and where there are gaps</p>



Annex 3: Application of Credibility Principles to each component of monitoring system

Credibility Principle	System Characteristics	Sustainability Content	Sustainability Outcomes
<p>Sustainability: A credible sustainability system makes a difference where it matters.</p>		<ul style="list-style-type: none"> • Defines and clearly communicates its scope and its specific sustainability objectives. • Focuses on the significant sustainability impacts in its scope. • Seeks to address the root causes of sustainability issues • Reflects current scientific evidence and international norms when relevant. • Adapted to local or sector-specific conditions where this helps improve impact. 	
<p>Collaboration: A credible sustainability system works with others to create change.</p>	<ul style="list-style-type: none"> • Establishes partnerships to improve its efficiency (e.g., mutual recognition) 	<ul style="list-style-type: none"> • Actively seeks alignment with others (e.g., alignment with recognised frameworks) 	
<p>Value creation: A credible sustainability system adds value.</p>	<ul style="list-style-type: none"> • Supports users to implement its tools 		<ul style="list-style-type: none"> • Strives to create value that fairly rewards the effort and resources that it takes for users to participate in the system (e.g., premiums)
<p>Measurable Progress: A credible sustainability system can demonstrate the difference it is making.</p>			<ul style="list-style-type: none"> • Allows progress towards objectives to be measured over time • Collects and analyses the data it needs to measure, understand, and demonstrate the progress its users are making towards its sustainability objectives



Credibility Principle	System Characteristics	Sustainability Content	Sustainability Outcomes
<p>Stakeholder engagement: A credible sustainability system listens and learns.</p>	<ul style="list-style-type: none"> • Empowers stakeholders to participate in decisions and hold the system to account • Involves a balanced and diverse group of stakeholders in decisions that will affect them • Strives to understand the context and perspectives of stakeholders who have been under-engaged or under-represented • Creates opportunities to ensure their participation in decision-making • Provides clear and transparent feedback on stakeholder input and concerns. • Has fair, impartial and accessible mechanisms for resolving complaints and conflicts. 		
<p>Transparency: a credible sustainability system earns trust by being open and honest.</p>	<ul style="list-style-type: none"> • Credible sustainability systems make important information publicly available • Enables stakeholders to understand, evaluate, and participate in the system's processes and decision-making 		<ul style="list-style-type: none"> • Enables stakeholders to understand the system's results, and impacts.
<p>Impartiality: A credible sustainability system is impartial.</p>	<ul style="list-style-type: none"> • Avoids or mitigates conflicts of interest throughout its governance and operations 		



Credibility Principle	System Characteristics	Sustainability Content	Sustainability Outcomes
<p>Truthfulness: A credible sustainability system's claims and communications can be trusted.</p>	<ul style="list-style-type: none"> • Claims the system or its users make are clear, relevant, and can be checked. • The scope and design of the system is accurately reflected in any claims, ensuring these are not misleading. 		<ul style="list-style-type: none"> • Publicly available data and evidence back up claims of impact
<p>Continual improvement: A credible sustainability system keeps improving.</p>	<ul style="list-style-type: none"> • Applies the lessons learned to improve • Responds to new evidence, stakeholder input, and external changes, adapting its strategies to improve its impacts and remain fit for purpose. 		<ul style="list-style-type: none"> • Evaluates the impacts and outcomes of its activities.
<p>Reliability: A credible sustainability system provides trustworthy assessments of users' performance</p>	<ul style="list-style-type: none"> • Standards can be consistently implemented and assessed • Ensures assessments of users' sustainability performance are competent and accurate • Assessments support any claims it allows users to make. 		



Annex 4: Proposal for Joint Monitoring System



Joint Monitoring System for Bio-Based Certification Schemes and Labels

Proposal to the EU Commission from HARMONITOR, STAR4BBS, and SUSCERT4BIOBASED

Introduction

This document presents a proposal for a Joint Monitoring System (JMS), providing information on the proposed set-up of the JMS, resources & time planning, and intellectual property rights (IPR). It includes following main sections: i) benefits of having a JMS; ii) the purpose, audience and scope of the JMS; iii) proposed structure of the JMS; iv) a description of the specific focus of each project; v) time planning, resources and IPR management.

I. Benefits of a Joint Monitoring System

A key benefit of a JMS is to reduce confusion, divergences and mistrust among stakeholders since having three different systems with potentially slightly varied results can impede trust and application of these systems beyond the project. A JMS has a better chance of bringing harmony and coherence to the space and clarity for policy-makers driving the transition to a bioeconomy in the EU. This is also important for the value of the JMS beyond the project where there could be a specific harmonized tool that can be used to analyze the performance of other CSLs (Certification Schemes and Labels). Instead of 3 potentially competing systems that would be developed from the projects, it is aimed in this way to develop a joint, overarching system.

Having three projects working together on the development of the JMS would allow us to build on each other's knowledge and experience, effectively subjecting the system to a higher level of scrutiny during the development and testing stages. By joining forces, we would be able to maximize the effective use of the resources at our disposal to gain more depth on every aspect of the system. It will allow a higher comprehensiveness of the system in its scope and usefulness to a wide range of stakeholders. Indeed, with a JMS we will be able to streamline stakeholders consultations, pooling our networks and reducing stakeholder fatigue.



In addition, the inter-project collaborative process of conceptualizing and developing the JMS will eliminate competition among the three projects, while maximizing synergies and impacts of the results. It will also facilitate and increase the chances to secure long-term funding of the tool, beyond the life of the three projects. By joining forces, more than 30 institutions will be involved in the development, testing and validation of the tool. This will allow a broader comprehensiveness of the coverage and applicability of the tool and will increase the chance to identify a potential institution willing to host and adopt the tool. In addition, the higher number of institutions involved represents an important advantage in terms of stakeholder engagement in the development, optimization, and exploitation of the tool. Last but not least, we expect that a single tool, supported by a large number of institutions will have a better chance of being adopted than three individual, competing tools. Although the creation of a JMS would require greater coordination between the projects, we believe that it is not only feasible but also worthwhile to work together, providing a more comprehensive and detailed tool, covering a wide range of bio-based sectors and products.

II. Purpose, Scope and Audience of the Joint Monitoring System

Purpose

The JMS aims to provide the European Commission and certification schemes and labels owners with a framework to evaluate the potential of CSLs (certification schemes and labels) and their accompanying standards to contribute to objectives and sustainability goals prioritized in EU relevant policies and SDGs (Sustainable Development Goals). It intends to facilitate the potential harmonization of existing certification schemes and labels of biobased systems in terms of shared sustainability and governance criteria. The JMS will further increase the understanding of the effectiveness and robustness of the existing sustainability certification schemes and labels for biobased systems in the European market.

The subsequent application of the JMS (and its further elaboration through recommendations, additional guidance, and standardization) will provide a baseline for the assessment of certification schemes and labels, which is key to informing stakeholders about the strengths and weaknesses of CSLs at the system, content, and outcome levels. This information could potentially be used to improve CSLs performance.

The JMS will provide comprehensive criteria needed for biobased systems to be qualified as sustainable and together with its accompanying roadmap, drive continuous improvement towards an aspirational performance. It will increase the understanding of the effectiveness and robustness of the existing sustainability certification schemes and ecolabels for biobased systems in the European market. The JMS will be developed by following established guidelines ensuring schemes are not only credible but tangible impacts can be achieved through their appropriate implementation.



Scope

The JMS will be developed for analyzing sustainability certification schemes and labels for biological resources intended for industrial biobased value-chains and to biobased materials and products. Industrial biobased systems do not include food/feed, biofuels, bioenergy, and cultural/recreation sector. The entire value chain will be considered, capturing all aspects of a product’s life cycle (with each main stage of the value chain being covered separately). While the JMS will be applicable to products traded within the EU, the evaluation of entire value chains of biobased products will cover other geographical regions involved in the production and handling of the products (i.e., production of feedstock and all upstream and downstream operations within the supply chain).

Direct Audience/Users

The JMS will be developed for two direct audiences: the European Commission/policymakers and the certification schemes and labels owners (see the Table below). Indirectly, the JMS will be also accessible for industry users, NGOs, practitioners and general public. The methodology of the JMS and the assessment/validation examples will be made public.

<p>The European Commission/ Policymakers</p>	<p>The JMS will increase transparency regarding performance of existing CSLs for biobased systems, including an evaluation of their effectiveness and robustness.</p> <p>The commission could use the tool as an Implementation mechanism to fulfil regulations (in analogy with REDII for biofuels/bioenergy).</p>
<p>Certification Schemes and Labels Owners</p>	<p>The CSLs owners would have access to a harmonized system that would cover entire value chains as well as have a transparent evaluation system.</p> <p>CSLs owners could potentially use the JMS as a benchmark to address the gaps in their own systems, with the aspiration performance defined in the JMS.</p>

III. Proposed Structure of the Joint Monitoring System

At the center of the JMS is a **set of indicators** designed to collect key information about the robustness and effectiveness of the certification schemes and labels. This will be built in three levels: I) System level; II) Content Level and III) Outcome Level. ‘System indicators’ will focus on system characteristics, such as how a scheme is governed and how the standards or labels are developed. ‘Content indicators’ will clarify the requirements of the certification scheme or label vis-à-vis specific EU environmental, social, economic and circularity priorities and targets. Minimum requirements that all CSLs should adhere



to will be defined with a life cycle perspective. ‘Outcome indicators’ will enable to capture impact made by the schemes and labels. Outcome indicators will include life-cycle assessment comparison indicators and continual improvement indicators.

The indicators will be tested against the most relevant bio-based certification schemes and labels in use today, capturing results in a central **database** (Figure 1). On their own, the usefulness of these indicators and accompanying database for end users is limited. The data needs to be interpreted to mean something to them. Therefore, another key component of the JMS will be a layer of **interpretation** (e.g., minimum requirements, a traffic light system and rankings), which will provide the assessment results of the application of the indicators of the database in a schematic and clear way. In particular, this interpretation stage, building on the applied evaluation methodology and related minimum requirements for each indicator, will define a rating and scoring mechanism, that will allow a final visualization of the results.

While the JMS will be a new and unique tool, it will build on previous projects results (among others STAR-ProBio where the three projects were involved), existing assessment/benchmarking tools (e.g., FAO SAFA, WWF CAT) and/or databases (e.g., ITC Standards Map). SUSTCERT4BIOBASED produced the deliverable D3.1 in Nov 2022 containing a review of existing monitoring approaches which will provide input for the JMS development. In addition, STAR4BSS is currently conducting a specific task on the review and analysis of existing monitoring systems (D1.4 due in August 2023). The HARMONITOR project will soon launch a dedicated public consultation on the (strength and) weaknesses of existing CSL’s. All of these activities will be bundled and used for the JMS.

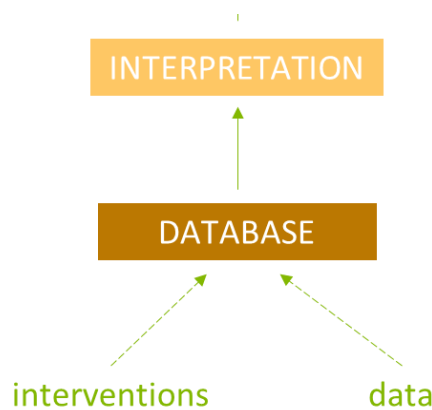


Figure 1. Skeleton of the Joint Monitoring System

IV. Proposed Division of Responsibilities among the 3 Projects

1. Database

A. Coordination at the Three Levels - Division of Project Management Responsibilities:



- System Level coordinated by STAR4BBS
- Content Level coordinated by SUSCERT4BIOBASED
- Outcome Level coordinated by HARMONITOR

All three projects will work on the conceptualization and development of all the elements and levels of the JMS, respecting the work packages and tasks described in the grant agreement of each project. The development of the JMS among the three projects will require intensive coordination of efforts coming from teams involved in the three projects. In order to collect the inputs from the three projects in a strategic and systematic way, we considered it important to have each project coordinate one level. Although each project could potentially coordinate each area, we propose an allocation of the coordination role, based on the strengths of each project and its partners involved.

STAR4BBS will coordinate the development of the System Level, the knowledge and practical experience of project partner ISEAL in defining credibility in sustainability systems. ISEAL's Codes of Good Practice cover many relevant aspects such as standard-setting and credible assurance processes. SUSCERT4BIOBASED will be leading the Content Level - this is in agreement with the focus of the project on the sustainability and circularity criteria where partners WR and ECOS are heavily involved. WR has been working on review and analysis of circularity criteria for biobased products where we would like to see progress seen in CSLs. As an environmental protection organisation working on the EU sustainable product policy (such as the Ecodesign for Sustainable Products Regulation), ECOS has a strong expertise on environmental and circularity aspects. Between 2020 and 2022 ECOS was also a member of the Platform on Sustainable Finance, and appointed as circular economy expert, following various bioeconomy related activities to be included in Taxonomy delegated acts. HARMONITOR will be leading the Outcome Level - as the WP leader and an academic organization, UU has activities planned in their project to tackle assessment of the effectiveness aspect. This is also linked to the fact that UU has hired a PhD student, who will use part of the HARMONITOR work as foundation for a PhD thesis. Assessing the outcome level is currently the least explored topic and as such allows for methodology development and to venture beyond the current scientific state of the art.

We emphasize that all three levels are equally relevant for the intended users. Assessing and monitoring CSLs on system, content and outcome level are all relevant aspects for both policy makers and CSLs themselves, and should be jointly evaluated.

B. Division of Labor Across All Three Levels – Full Participation at All Three Levels

Each sister project will work jointly in the development of the core JMS. Under the coordination of one project in each level, all three cluster projects will provide inputs on the conceptualization of the content of each level and will be responsible for the development of a subset of indicators using their project proposal as a guide to determine what aspects to focus on. Where there is an overlap between projects, project teams will work together to further split the work and broaden the coverage in terms of sustainability thematic areas to be covered. This efficiency will allow more time to be



spent on customizing the JMS during the testing phase to account for the nuances between different stakeholders and/or value chains (Section C below).

C. Division of Labor in the Joint Monitoring System Pilot Testing Phase: definition of the focus of each project based on the analysis of different Value Chains

It is expected that the JMS can have so-called add-ons to reflect the unique aspects of different value chains that are not covered in the core system (Figure 2). Each sister project will work on these add-ons linked to the specific resources or product categories depending on their value chain selection defining additional requirements for these. Based on the testing, feedback will be used to improve the JMS.

2. Interpretation

The three projects will work jointly in the Interpretation component of the JMS, proposing for each indicator the minimum requirements and an overall evaluation mechanism to be applied for scoring/rating the analyzed CSLs. Stakeholder engagement will be a requirement for the development of this layer.

3. Stakeholder engagement and testing (pilot testing on CSLs)

Stakeholder engagement will be continued throughout different phases of the monitoring system development. The three projects will have joint workshops where they will present and ask input/feedback on the JMS. They will jointly work on incorporating these inputs/feedbacks in optimization of the JMS. The development and the testing of the tool will involve stakeholders, and the improvement of the tool will be an interactive process.

Pilot testing: will be carried out in an early stage (preliminary version of the tool) with a small number of CSLs. In particular, within the STAR4BBS project the tool will be tested with RSB and Better Biomass, in the SUSTCERT4BIOBASED project with certification body CU and in the HARMONITOR project with RINA-C and with PreferredbyNature. This will provide input in terms of practical applicability of the requirements of the JMS for further optimization.

CSLs testing: An updated version of the JMS will be tested on a broader number of CSLs. This selection of value chains and CSLs have not been yet finalized, but the intention is that the three projects together will cover a broader coverage in terms of sectors in the biobased industry and most prominent CSLs.

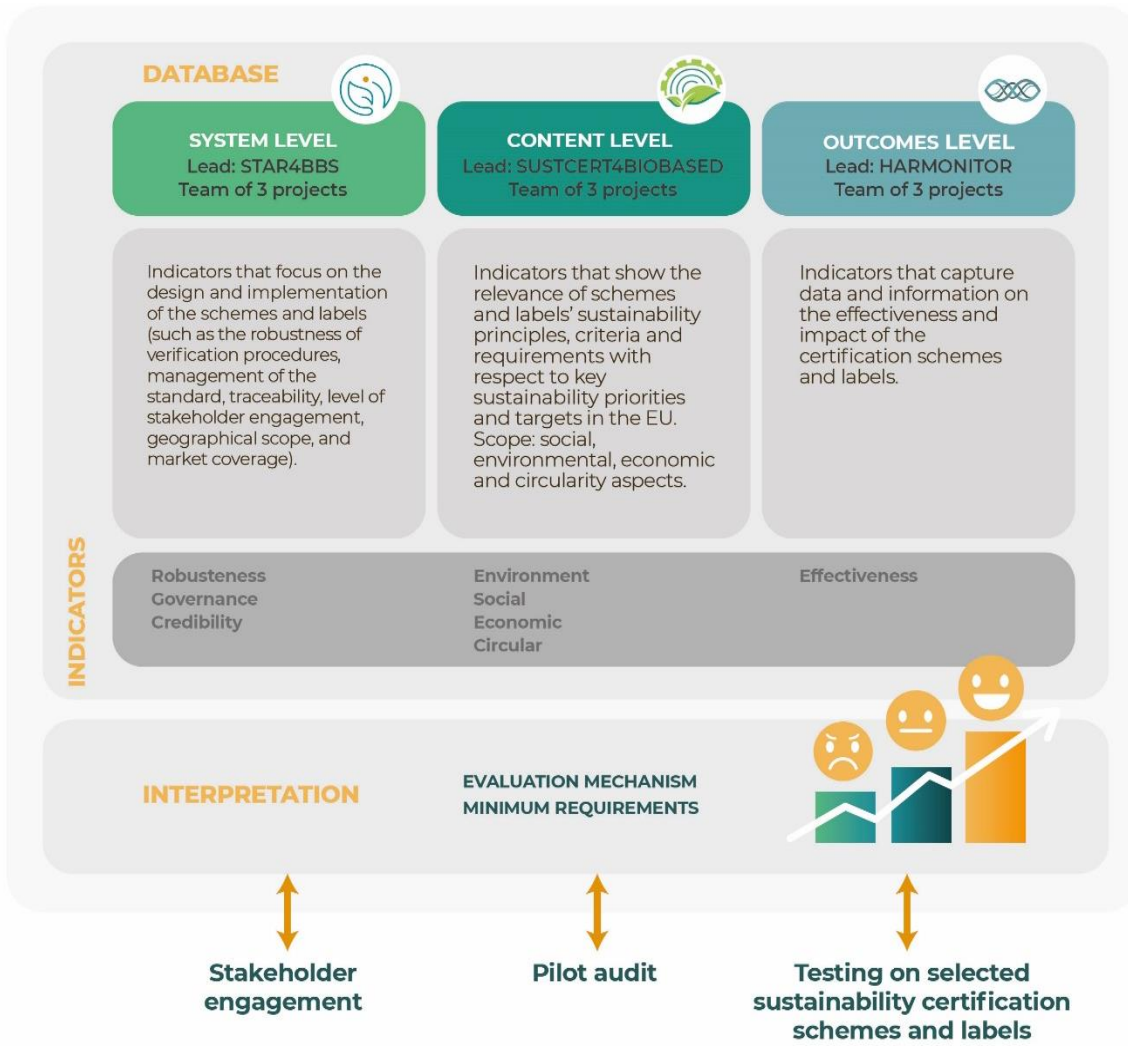


Figure 2. Graphical representation of the JMS



References

Documents

STAR4BBS (2023a) STAR4BBS Deliverable D1.1 Report on policy sustainability targets

STAR4BBS (2023b) STAR4BBS Deliverable D1.2 Report on existing international and EU SCS and labels for feedstock and bio-based materials and products

STAR4BBS (2023c) STAR4BBS Deliverable D1.4 Report on existing monitoring schemes, with recommendations for new system

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ISEAL (2014) ISEAL Impacts Code of Good Practice Version 2.0, www.isealalliance.org/defining-credible-practice/iseal-codes-good-practice

ISEAL (2014) ISEAL Standard-Setting Code of Good Practice Version 6.0, www.isealalliance.org/defining-credible-practice/iseal-codes-good-practice

Meetings

ISEAL and representatives from ISEAL's members (2023, June 13), Meeting with ISEAL members [Stakeholder meeting], Online

STAR4BBS Consortium (2023, June 7), STAR4BBS side event to European Biomass Conference and Exhibition (EUBCE) [Stakeholder meeting], Bologna, Italy

STAR4BBS Consortium (2023, May 26), STAR4BBS Co-creation workshop 2 [Stakeholder workshop], Online

STAR4BBS and Joint Advisory Group representatives (2023, February 24), STAR4BBS Joint Advisory Group Meeting 1 [Stakeholder meeting], Online

ITC Standards Map and STAR4BBS Consortium (2023, February 20), Meeting with ITC Standards Map [Stakeholder workshop], Online

STAR4BBS Consortium (2023, January 26), STAR4BBS Co-creation workshop 1 [Stakeholder workshop], Online

“ Sustainable bio-based systems via effective certification & labelling ”

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