



Concise Consumer Communication through Robust Labels for Bio-based Systems

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Publishable executive summary

The main goal of the 3-CO project is to support consumers in making more sustainable purchasing choices by providing a supportive framework for Label and Certification Schemes (LCS) on Business-to-Consumers communication for industrial bio-based products.

The scope of this report is the selection of 25 LCS that is based on the work of Task 1.2 'Inventory of qualifying Labelling and Certification Schemes'. This task builds on the selection of product groups in Task 1.1:

1. Baby clothing
2. T-Shirts
3. Shampoo
4. Wooden houses (Cross Laminated Timber or wooden frame houses)
5. Furniture
6. Cosmetics (make-up, etc.)
7. Biodegradable plant pots
8. Bio-based plastic toys
9. Bio-based PET/PEF bottles
10. Mattresses

The schemes selected in Task 1.2 will be further analysed in subsequent tasks of the 3-CO project. Notably, the goal is to assess their robustness and effectiveness in assessing and communicating the sustainability of bio-based products to consumers. The scope of the task was therefore these LCS that cover the product group, are available in the EU, and certify sustainability aspects of products. A long list was first established and then reduced to 25 LCS. These 25 schemes were selected according to the following criteria:

- Bio-based specific aspects are covered.
- All product groups are well represented.
- Sustainability aspects are central to the scheme, with an emphasis on environmental sustainability.
- The scheme focuses on communication to consumers (B2C), and well recognised labels are included.
- Most schemes adhere by either ISO 14024 Type I Ecolabel principles¹, or ISEAL principles².

In addition to the 25 shortlist schemes, a back-up list of 12 additional schemes was established. An analysis of how the criteria are reflected in the short list is included in this report. The LCS selected are presented in Table 1.

¹ ISO 14024:2018 <https://www.iso.org/standard/72458.html>

² ISEAL, Our new membership structure, <https://www.isealalliance.org/get-involved/how-our-membership-changing>

Table 1: Shortlist of LCS

#	LCS name	LCS url
1	Bio-based Content certification scheme	https://biobasedcontent.eu/
2	DIN-Geprüft Biobased / DIN Certco	https://www.dincertco.de/din-certco/en/
3	The RSB Global Advanced Products Certification	https://rsb.org/rsb-certification-for-products/
4	TÜV Austria OK biobased	https://www.tuv.at/ok-biobased/
5	TÜV Austria OK biodegradable	https://www.tuv-at.be/green-marks/certifications/ok-biodegradable/
6	Better Cotton Initiative	https://bettercotton.org/
7	ECOLOGO	https://www.ul.com/resources/ecologo-certification-program
8	Forest Stewardship Council	Home Forest Stewardship Council (fsc.org)
9	Good Environmental Choice (The Swedish Society for Nature Conservation)	https://www.bramiljoval.se/in-english/
10	GOTs - global organic textile standard	https://global-standard.org/the-standard/gots-key-features/ecological-and-social-criteria
11	International Organic and Natural Cosmetics Corporation BDIH Standard	https://www.ionc.info/
12	ISCC Plus (International Sustainability and Carbon Certification)	https://www.iscc-system.org/certification/iscc-certification-schemes/iscc-plus/
13	Natrue-Label	https://natrue.org/our-standard/
14	Naturland	https://www.naturland.de/en
15	Oeko-tex Made in Green	OEKO-TEX® - Tailor-made solutions for the textile and leather industry
16	Programme for the Endorsement of Forestry Certification (PEFC)	https://pefc.org/
17	the vegan trademark	https://www.vegansociety.com/the-vegan-trademark
18	TÜV Austria OK Compost Home	https://en.tuv.at/ok-compost-home-en/
19	UEBT Union for Ethical Bio Trade	https://uebt.org/
20	Blue Angel	Blue Angel The German Ecolabel (blauer-engel.de)
21	EU Ecolabel	EU Ecolabel Product Groups and Criteria (europa.eu)
22	Nordic Swan Ecolabel	https://www.nordic-ecolabel.org/nordic-swan-ecolabel/
23	TÜV Rheinland Green Product Mark Textile	https://www.tuv.com/world/en/green-product-mark.html
24	oekocontrol	https://oekocontrol.com/
25	Cradle to Cradle Certified (CM) Products Program	https://c2ccertified.org/



1 Introduction

1.1 Objectives of 3-CO

The main goal of the 3-CO project is to develop and demonstrate the viability of a supportive framework for Label and Certification Schemes (LCSs) on Business-to-Consumers communication for industrial bio-based products (BBPs) that enables and supports consumers to make more sustainable purchasing choices.

The project aims to improve sustainability performance and competitiveness in bio-based systems. The focus is on consumer-oriented labelling options for industrial BBPs that are sustainable and circular in using resources, processes, and materials during their entire lifecycle. The supportive framework will consist of actionable guidelines for LCS owners that reflect consumers' and other stakeholders' needs, digital solutions to support better-informed decision-making processes of consumers, and policy recommendations on deploying social measures.

1.2 Objectives of WP1

The objective of WP1 is to thoroughly understand existing LCSs for the bioeconomy through pre- and co-normative research. It will assess the existing and lacking coverage of environmental, social, and economic aspects and their robustness and effectiveness. Ultimately, the objective is to derive a science-based supportive framework for further developing bioeconomy LCSs.

1.3 Scope of the report

This document presents the results of Task 1.2 of the 3-CO project. It includes the methodology established for the conduction of the task, as well as the results. The main result is a list of 25 labelling and certification schemes that certify the sustainability of BBPs, for the purpose of communicating this information to consumers. An analysis of the shortlist is included, indicating how the criteria for selection are reflected in the selection.

The first activity conducted was mapping labelling and certification schemes available in Europe that follow the scope of the task. A matrix template was developed, to ensure that all relevant information was included in order to perform the reduction to 25 schemes at the end of the task.

The mapping itself was conducted by the project partners and resulted in the mapping of about 67 schemes. A number of sources were consulted, including existing databases of ecolabels and other consumer facing certification schemes, and lists established by other related EU-funded projects. Fourteen were removed at an early stage as they did not properly fit the expected scope.



Once the mapping was completed, partners updated the selection criteria proposed in the preparatory documents of the project. The criteria were finalised having in mind the analysis that will be performed in later tasks and the scope of the project. Based on these criteria, a qualitative scoring was established, and applied to the long list of schemes. It first ranks schemes that best filled these criteria (giving points for each criterion), and then give a final score ensuring a balance between the different objective (e.g. product groups representation). As a result of this scoring, a shortlist of 25 LCS were selected, as well as a backup list of 12 other schemes. An analysis of how the shortlisted schemes address the different criteria is included at the end of the report.

To conduct the work in this task, the team met remotely to discuss the matrix template, the shortlist criteria, and the selection of LCS. Exchanges were also conducted via email to receive comments from all partners in the consortium on the choices made, and to propose schemes for further analysis. All working documents, and notably the matrix template, were available online for all partners.



2 Mapping of labelling and certification schemes

A mapping of labelling and certification schemes was conducted. The scope of the mapping includes these labelling and certification schemes that are available in the European Union and cover the value chains selected in task 1.1 of the 3-CO project. These ten value chains are: 1) Baby clothing, 2) T-Shirts, 3) Shampoo, 4) Wooden houses (Cross Laminated Timber or wooden frame houses), 5) Furniture, 6) Cosmetics (make-up, etc.), 7) Biodegradable plant pots, 8) Bio-based plastic toys, 9) Bio-based PET/PEF bottles, and 10) Mattresses.

In Month 3 of the project, a pre-mapping was conducted to support Task 1.1. The idea was to ensure that for all expected product groups, at least one LCS could be identified. The pre-mapping was included in Deliverable 1.1.

The final mapping itself resulted in a long list of 67 LCS. For each LCS, a number of information was collected to facilitate the assessment of their relevance in the second stage of the task (selection of 25 LCS).

2.1 Preparation of the matrix template

The first step in preparing the mapping template is the definition of data needed for the analysis and selection of the LCS. For the purpose of Task 1.2, the main elements to be collected should allow the identification of the LCS (name, website), the assessment of its relevance to the project scope (product groups covered, sustainability aspects, relevance to the bio-based sector), and whether detailed information on its functioning is readily available. On this last point, further tasks in the work package will need to analysis the schemes procedures (how are certificates awarded), how is the assessment conducted, and finally how is the information communicated to consumers (via graphical representation and other written indication). The data are therefore sorted in five main groups: LCS scope, Bio-based and sustainability aspects, Procedure, Assessment, Communication.

The table 2 presents the long list of information needed for the completion of the task. However, collecting detailed information on all these aspects is not relevant for the sake of a long list. Certain data are set aside, and only analysed for the shortlist of 25 LCS, as explained in the comment column.



Table 2: Information to map

Mapping data	Long list/short list	Comment
LCS scope		
Name	Long list	
Link to website	Long list	
Link to further information	Long list	
Date of creation	Long list	
Geographical availability	Short list	Not needed for long list. Only EU available LCS will be included in the long list.
Language of work/documents	Long list	
Number of certificates awarded	Long list	
Type of operator (public, private, private not for profit, etc.)	Short list	Not needed for long list
Bio-based and sustainability aspects		
Value chains / products covered	Long list	As relevant to the 3-CO value chains
Comply with Bio-based standards such as EN 16935:2017	Long list	As declared
Bio-based or sustainability aspects are covered (yes/no)	Long list	
Aspects covered (e.g., origin of the material, bio-based content, sustainability of extraction and production, end-of-life e.g. compostability and biodegradability, overall environmental sustainability, social aspects, ethical aspects, adherence to standards or legislations)	Short list	For the long list we only check if some or all of these aspects are specifically addressed.

Deliverable 1.2

Selection of at least 25 LCS



Procedure		
Information on procedure is available	Long list	
Certification procedure	Short list	For the long list we only check whether the information is available.
Monitoring and enforcement	Short list	
System review	Short list	
Assessment		
Comply with Ecolabel standards (ISO 14024 T-I or T-III) or ISEAL member	Long list	ISEAL membership was added as an indicator of a LCS quality
Information on assessment is available	Long list	For the long list we only check whether detailed information on the assessment will be available for the analysis in the short list.
Assessment methods (LCA, practice-based, outcome-based)	Short list	
Scope of assessment (performance, improvement)	Short list	
Unit of assessment (landscape/jurisdiction-level, company-level, programme-level, infrastructure-level, product-level, ingredient-level)	Short list	
Communication		
Communication approach: simple label, rating, scoring, mixed	Short list	Not needed for the long list
Communication target: B2B, B2C, both	Long list	



2.2 Filling the matrix

In order to map relevant LCS, a number of sources were consulted. They cover ecolabel and voluntary standards databases, deliverables from related EU funded projects, as well as partners own knowledge and network (e.g., ISEAL contributed to this task). As an order of magnitude, the European Commission, using figures from the Ecolabel Index, indicates that about 230 environmental labels and certification schemes are available to European consumers³. To these, one must consider other labels covering social or ethical issues. But not all these schemes address the product groups selected in 3-CO project.

Sources consulted:

- Ecolabel index, <https://www.ecolabelindex.com>
- Global Ecolabelling Network members, <https://globalecolabelling.net/organisations/>
- Standards map, <https://www.standardsmap.org/en/identify>
- Suscert4Biobased deliverables
- Star4BBS deliverables
- ISEAL Community Members, <https://www.isealliance.org/iseal-community-members>

About 67 schemes were mapped and added to the matrix. Information for all these schemes was collected to assess their relevance for the project. A total of 14 were rejected, for various reasons. The list below summarises the main reasons for exclusion of some labels, indicating that they were unlikely to be fit for purpose for the rest of the project:

- Some schemes had been included twice; duplicates were removed.
- Some labels mentioned are not attached to a certification scheme per se. They were taken out of the list (FairWear).
- Two labels were offered for a company's own products. They were taken out of the list.
- Some organisations propose multiple schemes. In some cases, we decided to only include the most relevant one (this was the case for FSC).
- Some schemes were not covering the product groups or had too limited numbers of certificates for these products (e.g., less than 10).
- One scheme was removed as it is expected to be extensively reformed in 2023 (Textile Exchange).

³ European Commission (2022) Impact Assessment Report accompanying the document Proposal for a directive of the European Parliament and of the Council amending Directives 2005/29/EC and 2011/83/EU as regards empowering consumers for the green transition through better protection against unfair practices and better information. SWD (2022) 85 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022SC0085>



- Many schemes refer to one another. E.g., Ecolabels might require pre-certification via a specific scheme addressing raw materials. Or EU national ecolabels rely on the EU Ecolabel methodology for the products 3-CO focuses on (e.g., Austrian Ecolabel).
- Some LCS only include detailed information in the local language. However, the vast majority had details available in English.

During the completion of the matrix, it was decided to also adapt the template to reflect information that was deemed relevant. For example, ethical issues such as animal welfare was added next to traditional sustainability aspects.

Regarding standards, the grant agreement of the 3-CO project indicated that the research would account for schemes that follow ecolabelling standards and standards on the bio-based content of products. Ecolabelling standards were to be looked at as a proxy for a scheme's reliability, while standards on bio-based content would indicate that a scheme may have tailored its assessment procedures to BBPs. Two European standards were considered: EN 16751⁴ on sustainability criteria for BBPs, and EN 16935⁵ on requirements for B2C communication and claims.

As the search progressed, some adaptations were needed. In many cases, while the search focused on ISO and EN standards, many schemes indicated national version of bio-based standards, or a standard related only to bio-based content measurement (EN16785-1⁶). Regarding ecolabelling, only a few LCS follow ISO 14024 (Ecolabels Type I), but many do mention certification processes standards such as the ISO 17000 series⁷ (especially the schemes focused primarily on social issues, which are out of the scope of ISO 14024). When this information was clearly indicated on a scheme's website, it was added to the matrix for further reference. We also added a mention when schemes are following ISEAL code of conduct or have joined the ISEAL community at a more entry level (schemes that do not yet fully apply the code but are on a path to do so, i.e., Community Members).

⁴ EN 16751:2016 Bio-based products – Sustainability criteria

https://standards.cencenelec.eu/dyn/www/f?p=CEN:110:0:::FSP_PROJECT,FSP_ORG_ID:39302,874780&cs=18A110EB61188DAF8380578443B1A8466

⁵ EN 16935:2017 Bio-based products – Requirements for Business-to-Consumer communication and claims
https://standards.cencenelec.eu/dyn/www/f?p=CEN:110:0:::FSP_PROJECT,FSP_ORG_ID:61210,874780&cs=1111F680DE7652EF07A91734E51ADC983

⁶ EN 16785-1:2015 Bio-based products - Bio-based content - Part 1: Determination of the bio-based content using the radiocarbon analysis and elemental analysis

https://standards.cencenelec.eu/dyn/www/f?p=CEN:110:0:::FSP_PROJECT,FSP_ORG_ID:40882,874780&cs=1E6DCAB4921539D7426CC955FBED41978

⁷ ISO 17000:2020 Conformity assessment, <https://www.iso.org/standard/73029.html>



2.3 Long list of labelling and certification schemes

The aim of the long list was to provide a landscape of labelling and certification schemes available for BBPs within the value chains selected for the 3-CO project. While not exhaustive, this list reflects a certain diversity of situations. Regarding product groups, some receive much more attention: textiles in particular are overrepresented (T-shirts are covered in 40 LCS). This is related to the kind of aspects of a product that is usually looked at: origin of raw materials is also more represented in consumer oriented LCS. Meanwhile, LCS for novel BBPs are less numerous, few focus on B2C communication, and while they focus on the presence of bio-based content in the product, they often do not include a deep analysis of environmental or social sustainability.

Some product groups are not so well covered (e.g., bio-based PET bottles or biodegradable plant pots). Thankfully, ecolabels tend to cover multiple product groups, and several schemes are sector agnostic (as long as bio-based content is included). This means that the project team can continue the analysis on all the product groups selected in D1.1.

The long list can be found in the Annex A. The most relevant information is included in this report: name of label, value chains covered, whether the LCS is bio-based specific, aspects covered, the targeted audience and whether the LCS abide by recognised standards or codes of conducts (ISO, ISEAL).

Remark: the table's numbering reflects the full list, including those rejected at an early stage. After elimination of duplicates and irrelevant schemes, a total of 53 LCS remained.



3 Selection of 25 labelling and certification schemes

3.1 Methodology for the selection of 25 LCS

A list of criteria was defined to reduce the list to 25 LCS. Considering the goal of the project, the two main criteria are that LCS should cover sustainability aspects and allow for B2C communication.

When it comes to sustainability, LCS traditionally focus separately on environmental and social aspects. While elements of both can be included in one same scheme, they tend to predominantly focus on one more than on the other. It is not rare to see one product sport both a fairtrade and an organic label. We therefore tried to create a list that has a balance of both aspects, although environmental criteria are more represented due to the inclusion of ecolabels. Besides environmental and social issues, ethical questions such as animal welfare are also a common feature of consumer-oriented labels and the team decided to include some as well in the list for further analysis, although this aspect remains secondary to classic sustainability issues in the field of BBPs (especially as most of them are not expected to predominantly rely on animal product or testing).

In the sector of novel BBPs, a lot of LCS are oriented towards B2B communication, as they concern the certification of bio-based content. B2C schemes are more often focused on traditional BBPs, such as cotton or wood products. In addition, some LCS mapped could not be quickly identified as either B2B or B2B/B2C. Since the analysis needs to focus on B2C communication, schemes that were clearly limited to inter business communication were removed from the list. We tried nonetheless to keep some clearly bio-based oriented schemes beyond traditional applications to keep the value chain coverage of e.g., bio-based PET bottles. Schemes that focus on assessing bio-based content also tend to be product agnostic, which was interesting for further analysis, to identify difference between schemes that are product specific and those that are not. We also expect schemes that focus solely on bio-based content to have little coverage of sustainability aspects, a shortcoming that the project aims to address. It was therefore important to add them in the short list.

Value chain coverage is of course an important point. While the long list ensured that all products could potentially be assessed, the project team ensured that the short list would also balance the proportions between products, as some of them receive a lot more attention than others. In a list of 25 LCS, we made sure that not half of them would focus on T-shirts only. The overrepresentation of organic or fairtrade cotton among LCS mapped resulted in the exclusion of most of them to leave space for other products and other aspects.

Similarly, there was a variety of schemes in term of product stage: some schemes have a strong focus on raw material extraction (e.g., wood or cotton, such as Better Cotton Initiative or the Forest



Stewardship Council). Others focus more on the production stage (e.g., checking for bio-based content, like DIN-Geprüft Biobased, the Bio-based Content certification scheme or TÜV Austria OK biobased), while a number of schemes, and especially ecolabels (Blue Angel, Nordic Swan), adopt more of a lifecycle approach. The shortlist aims for a balance in these schemes. A decision was also made to prioritise schemes labelling products rather than company to fit the needs of upcoming tasks in the project.

Finally, for the analysis to be successful, access to information on the schemes operation's is paramount. For the longlist, the project team had mapped which schemes followed ISO Type I ecolabelling rules, and which were ISEAL members (either as Code Compliant, following ISEAL's three codes of good practice⁸, or as Community Members being on a path to improvement). We expect that these schemes will be more transparent. We also expect these schemes to be of overall higher quality, which will support the identification of best practices but also of gaps in reporting that should be covered in the future.

Based on these criteria, a scoring system was established. Criteria for scoring is presented in table 3.

Table 3: Scoring for the shortlist

Criteria	Score attributed
Bio-based specific and B2C, all products covered	1
Bio-based specific, B2C, ISEAL or ecolabel	2
B2C, ISEAL or ecolabel	3
B2C, well recognised labels	4
Not strongly B2C, not ISEAL or ecolabel but interesting from a bio-based point of view	5

Besides scoring schemes, a qualitative assessment was performed by the project team to ensure that schemes that are well-known to the public or of particular interest would be integrated in the list. This was done based on knowledge of the experts involved, also taking into account the number of certificates awarded. The final score therefore reflects both the criteria and the qualitative assessment. Some schemes' scores were adjusted to reflect the needs of the project (e.g., some schemes focusing on overrepresented sectors and with lower public recognition or less information available online were downgraded).

⁸ ISEAL Codes of Good Practice <https://www.isealalliance.org/defining-credible-practice/iseal-codes-good-practice>



3.2 Final list

3.2.1 Shortlist and back-up list tables

Based on the scoring, 37 LCS were kept, constituting a first-tier list of 25 LCS with scores from 1 to 3, and a back-up of 12 more schemes with a score of 4 or 5. Table 4 presents the LCS shortlist created including selected 25 LCS. Table in Annex B presents the product coverage in the shortlist, and Annex C a summary table of the shortlist with additional information.

Table 4: LCS shortlist

Score	LCS name	LCS URL
1	Bio-based Content certification scheme	https://biobasedcontent.eu/
1	DIN-Geprüft Biobased / DIN Certco	https://www.dincertco.de/din-certco/en/
1	The RSB Global Advanced Products Certification	https://rsb.org/rsb-certification-for-products/
1	TÜV Austria OK biobased	https://www.tuv.at/ok-biobased/
1	TÜV Austria OK biodegradable	https://www.tuv-at.be/green-marks/certifications/ok-biodegradable/
2	Better Cotton Initiative	https://bettercotton.org/
2	ECOLOGO	https://www.ul.com/resources/ecologo-certification-program
2	Forest Stewardship Council	Home Forest Stewardship Council (fsc.org)
2	Good Environmental Choice (The Swedish Society for Nature Conservation)	https://www.bramiljoval.se/in-english/
2	GOTs - global organic textile standard	https://global-standard.org/the-standard/gots-key-features/ecological-and-social-criteria
2	International Organic and Natural Cosmetics Corporation BDIH Standard	https://www.ionc.info/
2	ISCC Plus (International Sustainability and Carbon Certification)	https://www.iscc-system.org/certification/iscc-certification-schemes/iscc-plus/
2	Natrue-Label	https://natrue.org/our-standard/
2	Naturland	https://www.naturland.de/en
2	Oeko-tex Made in Green	OEKO-TEX® - Tailor-made solutions for the textile and leather industry
2	Programme for the Endorsement of Forestry Certification (PEFC)	https://pefc.org/
2	the vegan trademark	https://www.vegansociety.com/the-vegan-trademark
2	TÜV Austria OK Compost Home	https://en.tuv.at/ok-compost-home-en/
2	UEBT Union for Ethical Bio Trade	https://uebt.org/
3	Blue Angel	Blue Angel The German Ecolabel (blauer-engel.de)



3	EU Ecolabel	EU Ecolabel Product Groups and Criteria (europa.eu)
3	Nordic Swan Ecolabel	https://www.nordic-ecolabel.org/nordic-swan-ecolabel/
3	TÜV Rheinland Green Product Mark Textile	https://www.tuv.com/world/en/green-product-mark.html
3	oekocontrol	https://oekocontrol.com/
3	Cradle to Cradle Certified (CM) Products Program	https://c2ccertified.org/

The back-up list will be used in case it is not possible to retrieve the necessary information for further information in some of the 25 short-listed schemes. Table 5 presents the back-up list.

Table 5: LCS back-up list

Score	LCS name	LCS URL
4	CanopyStyle Audit (viscose)	https://canopyplanet.org/
4	Fairtrade Textile Standard	https://www.fairtrade.net/standard/textile
4	ICADA Certified Natural Cosmetics	http://certified-natural-cosmetics.org/icada-premium-standard-for-organic-and-natural-cosmetics
4	Naturtextil IVN certified BEST	https://naturtextil.de/en/ivn-quality-seals/about-naturtextil-ivn-zertifiziert-best/
4	Cruelty Free International	https://crueltyfreeinternational.org/
4	EU Organic agriculture	https://agriculture.ec.europa.eu/farming/certification_en
4	Fairtrade cotton	https://www.fairtrade.net/product/cotton
5	Better biomass	https://betterbiomass.nl/
5	Carbon trust / Carbon reduction label	https://www.carbontrust.com/what-we-do
5	CERTIPUR	https://europur.org/certipur/
5	NaturePlus	natureplus e.V. - Climate-protecting, resource-saving and healthy living construction
5	REDCert2 for biobased products	https://www.redcert.org/en/redcert-systems.html

3.2.2 Analysis of the shortlist

Bio-based specific labels

A number of labels, usually attached to a standard, primarily focus on assessing bio-based content. Considering the scope of the project, whenever possible, these schemes were added to the short list. 5 LCS included the word bio-based in their name: Bio-based Content certification scheme, DIN-Geprüft Biobased / DIN Certco, TÜV Austria OK biobased, Roundtable for Sustainable Biomaterials, UEBT Union for Ethical Bio Trade.



Sustainability aspects

The list is strongly oriented towards environmental sustainability. Nonetheless, social and ethical issues are also covered. UEBT Union for Ethical Bio Trade has a strong focus on social issues and fairtrade. The vegan trademark was added to cover animal rights aspects. Other schemes include social next to environmental aspects: for example, Roundtable for Sustainable Biomaterials, PEFC, FSC, Better Cotton, Global Organic Textile Standard. See a full breakdown on this aspect in Annex C.

Value chain coverage

As presented in detail in Annex B, attention was given to ensuring that all the selected product groups were covered in the short list. Some products are not well represented in LCS (e.g., biodegradable plant pots only once, bio-based PET/PEF bottles twice). As a complement, LCS that are sector agnostics were given priority in scoring, and six have been included, such as Cradle-to-Cradle Certified and the bio-based -specific schemes. Besides, ISO Type 1 ecolabels usually cover many sectors. The ones we selected cover about 5 of 3-CO product groups, which will allow for comparisons on assessment methods within a same ecolabel, as the assessment depend on each product category.

Textiles are very well represented in consumer facing labelling schemes. As it was not always possible to distinguish T-shirts and baby clothing (labels do not necessarily specify this detail), many textile labels were attributed to both. They are respectively covered in 14 and 12 LCS. The next most represented product is cosmetics with 9 LCS. Wooden houses are also well covered with 7 schemes specifically addressing them.

Scheme availability for consumers

Within the shortlist, there are significant differences among schemes when it comes to their availability for consumers. Several ecolabels are more than 30 years old (Blue Angel, EU Ecolabel, Nordic Swan Ecolabel), cover dozens of thousands of certificates, and are well known to the public, with a strong focus on B2C communication. The Vegan trademark can also be counted as a strongly available B2C label.

Schemes that have a strong bio-based content focus tend to be more recent and have issued less certificates: Bio-based Content certification scheme, DIN-Geprüft Biobased / DIN Certco, The RSB Global Advanced Products Certification, and ISCC Plus (International Sustainability and Carbon Certification) were all founded after 2010. Apart from ISCC Plus, they count less than a few hundred certificates, or even less than a hundred based on information available online (these numbers can be an underestimate).

LCS excellence

Most of the schemes selected follow some form of standardised process when it comes to how they set up their certification processes and assessment methods. At this stage, the two aspects tracked were



whether a scheme was following ISEAL principles (either as a full member abiding by its code of good practice, or as a community member on path to improvement, guaranteeing at least some form of transparency around its proceeding), or ISO 14024 Type I Ecolabel (ecolabels with third party verification). Within the list, 7 LCS follow ISEAL practices, and 6 are Type I Ecolabels. The full list is available in Annex C.

Scope of the assessment

Considering the scope of the project, there was a preference for schemes that award certificates to products themselves rather than brands or companies. Nonetheless, a number of LCSs offer certificates to different levels. In the shortlist, apart from 5 LCS where the information as unclear, all cover the product itself rather than the company. Another aspect is whether the assessment covers the product as a whole or a specific moment in the value chain (e.g., raw material, processing, etc.). There was a preference for products that are covered as a whole, and 17 of the schemes selected do so. A total of 6 LCS selected focus only on the raw material part. Since these materials are bio-based it was deemed relevant to include them in the shortlist. This element was unclear for two schemes: ECOLOGO and Oekocontrol, which will require further investigation. For these aspect on scope, in Annex C also offers the full breakdown per LCS.



4 Conclusion

Task 1.2 produced an inventory of qualifying labelling and certification schemes. A first landscape of existing schemes was established, and it was then reduced to a shortlist of 25 LCS. These schemes reflect the scope of LCS needed for the conduction of future tasks in the 3-CO project: available in the EU, these schemes certify products in the categories selected in Task 1.1, according to their sustainability credential. Some also address specific bio-based issues, such as bio-based content, biodegradability, or organic production. The schemes can then be used specifically for consumer communication.

During the mapping, attention was given to the availability of information that will be needed in later tasks, such as details on the certification process or the assessment of sustainability and bio-based aspects. The list will constitute the basis for the work of Task 1.3 *Assessment of gaps in existing LCS and establishment of new environmental and social indicators/criteria for LCS* and Task 1.4 *Robustness & effectiveness of LCS*.



5 List of abbreviations

Abbreviation	Description
B2B	Business to Business
B2C	Business to Consumer
BBPs	Bio-Based Products
ISEAL	International Social and Environmental Accreditation and Labelling alliance
ISO	International Organisation for Standardisation
LCA	Life-cycle assessment
LCS	Labelling and Certification scheme



6 References

Websites used for the mapping

- Ecolabel index, <https://www.ecolabelindex.com>
- Global Ecolabelling Network members, <https://globalecolabelling.net/organisations/>
- Standards map, <https://www.standardsmap.org/en/identify>
- ISEAL Community Members, <https://www.isealalliance.org/iseal-community-members>

Standards cited

- ISO 14024:2018 - Ecolabels Type 1, <https://www.iso.org/standard/72458.html>
- ISO 17000:2020 - Conformity assessment, <https://www.iso.org/standard/73029.html>
- EN 16751:2016 - Bio-based products – Sustainability criteria
https://standards.cencenelec.eu/dyn/www/f?p=CEN:110:0:::FSP_PROJECT,FSP_ORG_ID:39302,874780&cs=18A110EB61188DAF8380578443B1A8466
- EN 16935:2017 Bio-based products – Requirements for Business-to-Consumer communication and claims
https://standards.cencenelec.eu/dyn/www/f?p=CEN:110:0:::FSP_PROJECT,FSP_ORG_ID:61210,874780&cs=1111F680DE7652EF07A91734E51ADC983
- EN 16785-1:2015 Bio-based products - Bio-based content - Part 1: Determination of the bio-based content using the radiocarbon analysis and elemental analysis
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- ISEAL, 2014: ISEAL Codes of Good Practice <https://www.isealalliance.org/defining-credible-practice/iseal-codes-good-practice>

Other studies

European Commission, 2022: Impact Assessment Report accompanying the document Proposal for a directive of the European Parliament and of the Council amending Directives 2005/29/EC and 2011/83/EU as regards empowering consumers for the green transition through better protection against unfair practices and better information. SWD (2022) 85 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022SC0085>

Vural Gursel, I. ; Axmann, H.; Garcia Chavez, L.; Rodríguez-Illera, M. (WR - WFBR). April 2023: Review of sustainability certifications schemes and ecolabels for biobased Systems. Suscert4biobased Deliverable

UNITELMA et al., Expected publication August 2023: Report on existing international and EU SCS and B2B labels for feedstock and bio-based materials & products. STAR4BBS Deliverable.



Annex A - Long list of LCS

#	Name	Value chains / products covered	Strongly tailored to bio-based feedstock / products (yes - no)	Bio-based and sustainability aspects are covered (yes/no)	Comply with Ecolabel standards (ISO 14024 T-I or T-III) or ISEAL	B2B, B2C, both
1	AIAB (Italian Association for Organic Agriculture)	Cosmetics, Textile, Gardening				Both
2	amfori BSCI	Not specific	no	social	no	Both
3	ANAB - Architettura Naturale	Construction				
6	Better biomass	Biomass, probably in whatever kind of products	yes	yes	EN/ISO relevant standards	B2B
7	Better Cotton Initiative	Textile	Yes	yes	ISEAL, and ISO and IEC recommended practices for standardization by national bodies	Both
8	Bio-based Content certification scheme	All products containing carbon	yes	apparently only	ISO/IEC 17025 or similar ISO requirements	Unclear
9	Blue Angel	Textile, Furniture, Construction, Mattress, Toys	na	yes	Type 1	B2C
10	Bluesign PRODUCT (chemicals)	Textile	no	no	na	B2C
11	CanopyStyle Audit (viscose)	Textile	yes	yes	no	Unclear
12	Carbon trust / Carbon reduction label	All	No	na except for CO2 aspects	SBTI	Both
13	CERTIPUR	Furniture and textiles and/or mattresses	no	Sustainability yes, bio-based probably no	na	Both
16	Cotton Made in Africa (CmiA)	Textile	yes	yes	ISEAL	B2C



Deliverable 1.2

Selection of at least 25 LCS

18	Cradle to Cradle Certified (CM) Products Program	Textile, Cosmetics, Construction, etc.	no, but extensive sustainability criteria for all materials/ products, plus some additional ones for bio-based ones, plus some additional ones for animal products/ materials specifically	yes	ethical	na	Both
19	Cruelty Free International	Cosmetics, Shampoo	yes	ethical	no	B2C	
20	DIN-Geprüft Biobased / DIN Certco	All categories if bio-based content	Yes	yes	na	Both	
21	Eco-Certified Composite	Construction, Furniture	yes	yes	ISO/IEC 17065, ISO/IEC 17020, ISO/IEC 17025	B2B	
22	ECOLOGO	Construction, toys	na, but lifecycle oriented	sustainability yes, bio-based unclear	Type 1, ISO 17011 Accreditation, ISO 17021 Management system certification, ISO 17025 Testing and Calibration Laboratories, ISO 19011 QMS and EMS auditing (and auditor qualifications), ISO / IEC Guide 65 Product Certification, and assessed by the Global Ecolabeling Network	Both	
23	EU Ecolabel	Textile, Baby textile, Furniture, Shampoo, Cosmetics, Mattress	na	yes	Type1	B2C	
24	EU Organic agriculture	Textile	yes	yes	na	B2C	



Deliverable 1.2

Selection of at least 25 LCS

25	Fair for Life	Textile, Cosmetics	partly	yes	based on key baseline reference standards (International definitions of Fair Trade, ISO 26000, ILO conventions, social criteria of IFOAM, etc.)	Both
26	Fair Labor	Manufacturing no specific	no	social	no	B2C
28	Fairtrade cotton	Textile	yes	social	ISEAL	B2C
29	Fairtrade International Trader	Textile, likely others too	no	yes, but few bio-based aspects	na or no	Both
30	Fairtrade Textile Standard	Textile	yes	social	ISEAL	B2C
31	Forest Stewardship Council	Construction, Furniture, Textile	yes	yes	ISEAL	Both
33	Good Environmental Choice (The Swedish Society for Nature Conservation)	Textile, Cosmetics	no, but emphasis on switching to renewable raw material	yes	Type 1	B2C
34	GOTs - global organic textile standard	Textile	yes	na	ISEAL	Both
35	GreenGuard Certification	Construction, Furniture	no	VOC/environmental	no	Both
37	ICADA Certified Natural Cosmetics	Cosmetics	Mostly	yes	na	Both
38	ICTI Ethical Toy Program Certification	Toys	no	yes		
40	International Organic and Natural Cosmetics Corporation BDIH Standard	Cosmetics	yes	yes	different ISO 14000, ISO 17065	B2C
41	ISCC Plus (International Sustainability and Carbon Certification)	Packaging, Toys, Construction, Textiles	yes	yes	ISEAL	Both
42	Living Building Challenge	Construction, Furniture	no	yes		B2B
45	Natrue-Label	Cosmetics	likely yes	yes	na	Both
46	NaturePlus	Construction		yes	na	Both



Deliverable 1.2

Selection of at least 25 LCS

47	Naturland	Wood, Textile, Cosmetics. likely Shampoo too	yes	yes	ISO/IEC 17065	B2C
48	Naturtextil IVN certified BEST	Textile	yes	yes		B2C
49	Nordic Swan Ecolabel	Textile, Construction, Furniture, Cosmetics, Toys,	na	yes	Type 1	B2C
50	oekocontrol	Mattresses, furniture, textiles	yes	yes	very likely no	Both
51	Oeko-tex Made in Green	Textile, Baby textile	yes	yes	new ISEAL	Both
52	Programme for the Endorsement of Forestry Certification (PEFC)	Construction, Furniture	yes	yes	ISEAL	Both
54	REDCert2 for biobased products	Biomass and biomass for use in materials	yes	yes	na	B2B
56	SA8000 Standard	All	no	social	no	B2B
58	The RSB Global Advanced Products Certification	All (Cosmetics, plastics/packaging, textiles)	yes	yes	ISEAL	Both
59	the vegan trademark	Cosmetics, Shampoo, Textile	yes	ethical	no	B2C
60	TUV Austria OK biobased	All if bio-based content	yes	bio-based only	no	Both
61	TUV Austria OK biodegradable	All	no	biodegradability	no	Both
62	TUV Austria OK Compost Home	Mostly packaging, theoretically everything which is made of thin plastics and/ or non-recyclable, gardening	yes	yes, but few environmental aspects. No social requirements	na	Both
63	TÜV Rheinland Green Product Mark Textile	Textile, Furniture,	no	yes	Type 1	unclear
64	UEBT Union for Ethical Bio Trade	Natural ingredients (Cosmetics)	yes	yes	ISEAL	B2C
65	US cotton trust protocol	Textile	yes	yes	ISEAL	B2C
66	USDA Certified Biobased Product	Baby clothes, Toys, Bottles, Shampoo, Textile, Construction, Cosmetics, Gardening, Mattress	yes	bio-based only	na	B2C



Deliverable 1.2

Selection of at least 25 LCS

67	WFTO Fair Trade Standard	Cosmetics, textile, baby textile, furniture, garden, toys, shampoo	probably no	yes (but focussing more on continuous improvement than on clear criteria/ no clear indicators that have to be met)	probably no	Both
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Deliverable 1.2

Selection of at least 25 LCS



Annex B - Product coverage in the shortlist

Name	All sectors	Baby clothing	T-Shirts	Wooden houses (CLT or wooden frame houses)	Furniture	Shampoo	Cosmetics (make-up, etc.)	Biodegradable plant pots	Bio-based plastic toys	Bio-based PET/PEF bottles	Matress
Bio-based Content certification scheme	x										
DIN-Geprüft Biobased / DIN Certco	x										
The RSB Global Advanced Products Certification	x										
TÜV Austria OK biobased	x										
TÜV Austria OK biodegradable	x										
Better Cotton Initiative		x	x								
ECOLOGO				x					x		
Forest Stewardship Council		x	x	x	x						
Good Environmental Choice (The Swedish Society for Nature Conservation)			x				x				
GOTs - global organic textile standard		x	x								
International Organic and Natural Cosmetics Corporation BDIH Standard							x				
ISCC Plus (International Sustainability and Carbon Certification)		x	x	x					x	x	
Natrue-Label							X				
Naturland		x	x	x		x	x				
Oeko-tex Made in Green		x	x								
Programme for the Endorsement of Forestry Certification (PEFC)				x	x						
the vegan trademark		x	x			x	x				
TÜV Austria OK Compost Home								x		x	
UEBT Union for Ethical Bio Trade						x	x				



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Selection of at least 25 LCS

Blue Angel		x	x	x					x		x
EU Ecolabel		x	x		x	x	x				x
Nordic Swan Ecolabel			x	x	x		x		x		
TÜV Rheinland Green Product Mark Textile		x	x		x						
oekocontrol		x	x		x						x
Cradle to Cradle Certified (CM) Products Program	x										
Totals	6	12	14	7	6	4	9	1	5	2	3

Deliverable 1.2

Selection of at least 25 LCS



Annex C - Shortlist summary table

Name	Fairtrade / social	Vegan	Founded	Certificate	Excellence	whole / part of product	product / company
Bio-based Content certification scheme			2015	62	Other	whole	product
DIN-Geprüft Biobased / DIN Certco			2010	154	na	whole	product
The RSB Global Advanced Products Certification	some		2012	70	ISEAL	whole	product
TÜV Austria OK biobased			na	542	no	whole	product
TÜV Austria OK biodegradable			na	250	no	whole	product
Better Cotton Initiative	some		2009	2.2 million farmers	ISEAL, other	part	product
ECOLOGO			1988	6183	Type 1, other	?	?
Forest Stewardship Council	some		1994	55000+	ISEAL	part	product
Good Environmental Choice (The Swedish Society for Nature Conservation)			1990	na	Type 1	whole	?
GOTs - global organic textile standard	some		2005	12300	ISEAL	part	product
International Organic and Natural Cosmetics Corporation BDIH Standard			unclear	33000+ finished products and 22000+ raw materials	Other	whole	product
ISCC Plus (International Sustainability and Carbon Certification)			2012	2768	ISEAL	whole	product
Natrue-Label			2007 or later	+280 brands, +6700 certified products, +2300 certified raw materials	na	whole	?
Naturland			1982	125k farmers, unclear for products	Other	whole	?
Oeko-tex Made in Green			1992	4550	ISEAL	part	product
Programme for the Endorsement of Forestry Certification (PEFC)	some		1999	20000	ISEAL	part	product



Deliverable 1.2

Selection of at least 25 LCS

The Vegan Trademark		yes	1990	65000	no	whole	product
TÜV Austria OK Compost Home			na	na	na	whole	product
UEBT Union for Ethical Bio Trade	yes		na	147	ISEAL	part	?
Blue Angel			1978	20000	Type 1	whole	product
Cradle to Cradle Certified (CM) Products Program			2005	981	na	whole	product
EU Ecolabel			1992	88000	Type1	whole	product
Nordic Swan Ecolabel			1989	25000	Type 1	whole	product
oekocontrol			1990	na	na	?	product
TÜV Rheinland Green Product Mark Textile			na	200	Type I	whole	product