Concise Consumer Communication through Robust Labels for Bio-based Systems

Report on best practices in sustainability communication among label and certification schemes

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Publishable executive summary

The goal of the 3-CO project (https://3co-project.eu/) is to develop and demonstrate the viability of a supportive framework for Label and Certification Schemes (LCSs) on Business-to-Consumers (B2C) communication for industrial bio-based products (BBPs) that enables and supports consumers to make more sustainable purchasing choices. 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.

The present report aims to answer the following research question: **How to ensure that voluntary labels and certification schemes properly inform consumers about the sustainability of certified biobased products?**

Voluntary LCSs are these labels and certification schemes that companies can freely choose to have their products certified by. They are to be distinguished from mandatory ones, which companies have to be certified against by law (e.g. EU energy efficiency labelling).

The scope of the research covers the following labelling and certification schemes:
- o Bio-based Content certification scheme
- o DIN-Geprüft Biobased / DIN Certco
- o The RSB Global Advanced Products Certification
- o TUV Austria OK biobased
- o TUV Austria OK biodegradable
- o Better Cotton Initiative
- o ECOLOGO
- o Forest Stewardship Council
- o Good Environmental Choice (The Swedish Society for Nature Conservation)
- o GOTs - global organic textile standard
- o International Organic and Natural Cosmetics Corporation BDIH Standard
- o ISCC Plus (International Sustainability and Carbon Certification)
- o Natrue-Label
- o Naturland
- o Oeko-tex Made in Green
- o Programme for the Endorsement of Forestry Certification (PEFC)

- o the vegan trademark
- o TUV Austria OK Compost Home
- o UEBT Union for Ethical Bio Trade
- o Blue Angel
- o EU Ecolabel
- o Nordic Swan Ecolabel
- o oekocontrol
- o Cradle to Cradle Certified(CM) Products Program
- o Nutriscore

These LCS were selected based on a number of criteria especially:

- o LCS covering sustainability information (environmental and social sustainability)
- o LCS operating in a B2C context
- o The LCS is independent from the company producing the product
- o The Nutriscore was added for comparison purposes
- o The following product groups are covered by at least one scheme:
    - o Baby clothing
    - o T-Shirts
    - o Shampoo
    - o Wooden houses (Cross Laminated Timber or wooden frame houses)
    - o Furniture
    - o Cosmetics (make-up, etc.)
    - o Biodegradable plant pots
    - o Bio-based plastic toys
    - o Bio-based PET/PEF bottles
    - o Mattresses

The report focuses on the identification of good and best practices in communicating sustainability to consumers on products via labels. It aims to identify situations where certain practices will bring most benefits to consumers, and situations where the same practices might be less effective. It also points at risks of misleading consumers, through problematic practices that should be avoided.

The report is based on two-part research: first a literature review was conducted, gathering recommendations from international institutions, national agencies, laws and regulatory proposals, to identify good and best practices. A list of criteria was developed based on this list to be applied to the selected LCSs. The second part resulted in 25 case studies, which were then analysed to develop recommendations.

While the practices identified mostly go beyond legal obligations, the resulting recommendations should be read in a context of legal reform in the EU. Indeed, with the publications of two new proposals for directives to address greenwashing, the European Union is set to implement a stricter framework for B2C communication of sustainability, and new requirements for labelling schemes in particular. While the Empowering Consumer in the Green Transition (European Commission, 2022) and the Green Claims Directive (European Commission, 2023) are still to be adopted and transposed in national law, it is important that LCSs anticipate changes and already follow existing guidelines to properly inform consumers.

The results of this research indicate that there is a form of consensus among public authorities and international organisations as to how to communicate sustainability to consumers. Notably, the five key pillars of accessibility, clarity, reliability, relevance and transparency are reproduced in all guidelines and laws. While the principles are clear, there is more leeway as to how to implement them concretely, especially when narrowing down the topic to what is displayed to consumers (this report did not focus on certification processes behind the label itself, they will be covered in later tasks of the project). A number of good and best practices were identified, and schemes were analysed against these. Overall, most schemes adopt at least some good or best practices, but there is room for improvement, especially for schemes that focus on specific biobased aspects such as biobased content, and that have only recently started proposing consumer-facing labels. Schemes that have so far focused on a business-to-business (B2B) approach need to improve accessibility for consumers. Clarity is often lacking on the main logo, with vague scopes and a lack of details about the criteria covered. While statements are often proposed by schemes, they should ensure that companies use them to improve clarity and transparency. The reporting of the level of ambition of specific labels, or classes within a label often needs improvement, to ensure that consumers can distinguish best-in-class products. This is especially important considering that some schemes address multiple criteria, while others cover only a few which are not representative of the sustainability of a product over its life cycle. Schemes focusing on a highly specialised, technical and limited set of items should reflect on the added value of proposing consumer-facing labels and whether they do not risk increasing confusion for consumers.

1 Introduction

1.1 Objective 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.

The project aims to improve bio-based systems' sustainability performance and competitiveness, focusing on ten bio-based value chains (Table 1). The procedure of choosing these value chains in Table 1 is detailed in 3-CO Deliverable 1.1 Selection of ten bio-based value chains describing the selection criteria, including current and future market size, their contribution to the bioeconomy and their potential environmental and social impacts.

Table 1 Selected bio-based value chains

#	Value chain
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

In order to conduct research on current practices among labelling and certification schemes covering the ten product groups, and develop recommendations, a selection of 25 representative LCS was

established in Deliverable 1.2 Selection of at least 25 Label and Certification Schemes. The present report builds on the work of these two tasks, through case studies covering how the selected labelling and certification schemes communicate sustainability information to consumers. However, the list was amended to cover only schemes that are presently proposing B2C communication: one scheme was removed and replaced with the nutriscore which was used for comparison purposes (Table 2).

Table 2 List of schemes reviewed in this report – adapted from D1.2

#	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	TUV Austria OK biobased	https://www.tuv.at/ok-biobased/
5	TUV 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	TUV 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	oekocontrol	https://oekocontrol.com/
24	Cradle to Cradle Certified(CM) Products Program	https://c2ccertified.org/
25	Nutriscore	Other type label for comparison

1.2   Objectives of WP2

Work Package 2 (WP2) Improving consumer behaviour and developing smart solutions to support sustainable consumption helps the 3-CO project to understand consumers' decision-making processes and motivation towards sustainable consumption. WP2 also tests and evaluates existing LCS communication practices as part of the present task. In other tasks, consumers' needs and requirements for future labelling of BBPs are defined. Smart digital solutions are developed for consumers, supporting the decision-making process and behavioural change.

The WP2 began with Task 2.1, Consumer behaviour towards sustainable products, which supports all the other tasks of the WP2. Specifically, it examined and analysed existing literature regarding consumer behaviour and expectations towards sustainable products.

The present Task 2.2 analyses and benchmarks current LCS practices in consumer- oriented sustainability communication against a set of criteria (including from UNEP- United Nations Environment Programme, and ISEAL - International Social and Environmental Accreditation and Labelling Alliance) and with each other, considering for instance the relative advantages and disadvantages of different ways of presenting sustainability information (wording used, rating, colour coding, level of detail of the information, etc.). The goal of Task 2.2 is to ensure that consumer-oriented product sustainability information is accurate and substantiated, relevant to environmental issues, trustworthy, transparent and clear.

The task enables to define best practice to be evaluated in T2.3, and feed into recommendations and design guidelines.

1.3   Scope of the report

This report gathers the results of task 2.2. It aims to answer the following research question: **How to ensure that voluntary labels and certification schemes properly inform consumers about the sustainability of certified products?**

Voluntary LCSs are these labels and certification schemes that companies can freely choose to have their products certified by. They are to be distinguished from mandatory ones, which companies have to be certified against by law (e.g. EU energy efficiency labelling).

The scope of the research covers LCS as selected in task 1.2, which offer certification for the product groups selected in task 1.1. (see Table 1). These LCS were selected based on a number of criteria (the reader can refer to Deliverable 1.2 for further details), especially:

- o LCS covering sustainability information (environmental and social sustainability).
- o LCS operating in a B2C context.
- o The LCS is independent from the company producing the product.

The report focuses on the identification of good and best practices in communicating sustainability to consumers on products via labels. It aims to identify situations where certain practices will bring most benefits to consumers, and situations where the same practices might be less effective. It also points at risks of misleading consumers, through problematic practices that should be avoided.

The report is based on two-part research: first a literature review was conducted, gathering recommendations from international institutions, national agencies, laws and regulatory proposals, to identify good and best practices. A list of criteria was developed based on this list to be applied to the selected LCSs. The second part resulted in 25 case studies, which were then analysed to develop recommendations.

While the practices identified mostly go beyond legal obligations, the resulting recommendations should be read in the context of legal reform in the EU. Indeed, with publications of two new proposals for directives to address greenwashing, the European Union is set to implement a stricter framework for B2C communication of sustainability, and new requirements for labelling schemes in particular. While the Empowering Consumer in the Green Transition and the Green Claims Directive are still to be adopted and transposed in national law, it is important that LCSs anticipate changes and already follow existing guidelines to properly inform consumers.

The results of this research indicate that there is a form of consensus among public authorities and international organisations as to how to communicate sustainability to consumers. Notably, the five key pillars of accessibility, clarity, reliability, relevance and transparency are reproduced in all guidelines and laws. While the principles are clear, there is more leeway as to how to implement them concretely, especially when narrowing down the topic to what is displayed to consumers (this report did not focus on certification processes behind the label itself, they will be covered in later tasks of the project). A number of good and best practices were identified, and schemes were analysed against these. Overall, most schemes adopt at least some good or best practices, but there is room for improvement, especially for schemes that focus on specific biobased aspects such as biobased content, and that have only recently started proposing consumer-facing labels. Schemes that have so far focused on a business-to-

business (B2B) approach need to improve accessibility for consumers. Clarity is often lacking on the main logo, with vague scopes and lack of details over the criteria covered. While statements are often proposed by schemes, they should ensure that companies actually use them to improve clarity and transparency. The reporting of the level of ambition of specific labels, or classes within a label often needs improvement, to ensure that consumers can distinguish best-in-class products. This is especially important considering that some schemes address multiple criteria, while others only a few which are not representative of the sustainability of a product over its life-cycle. Schemes focusing on a highly specialised, technical and limited set of items should reflect on the added value of proposing consumer-facing labels and whether they do not risk increasing confusion for consumers.

2   Methodology

The methodology used for this report relied on a literature review, desk study research and discussions with experts on LCS.

A scoping phase took place in March 2023 to avoid overlap with other project tasks, and finetune the research question. Experts within the consortium were consulted as part of the scoping phase. The literature review was conducted from April to August and resulted in a list of commonly accepted criteria in sustainability communication, against which existing LCS were to be benchmarked. The case studies were designed and conducted from September to November: they were done through desk research and notably the analysis of guidelines published by the schemes. Finally, a benchmark analysis of the results was conducted in November, to assess to what extent the selected LCSs follow good and best practices that are commonly recommended, as well as how they adapt these practices to their specific situation. On the basis of this benchmark, a list of recommendations to LCS owners, policymakers and the wider biobased industrial ecosystem was drafted in November and December. The recommendations were also partly translated into decision trees for LCS operators and companies seeking certification for B2C communication. Decision trees aim to facilitate decision-making by providing clear paths based on the outcome pursued (e.g.: If you want to reach A, then do B).

In November, the deadline was extended to end of December 2023 to allow more time to analyse the results. The team met five times to discuss the work. Further exchanges were conducted through emails and revisions of documents (templates, matrix, report draft).

List of meetings:
- o   15 March 2023: task kick-off meeting with partners involved, to define the scope of the research and the research question.
- o   11 April 2023: discussion with project partners on the first matrix to map criteria for the literature review, and sources to include.
- o   Early September: the first list of criteria and template for case studies was shared with partners, and written comments received from VTT, ISEAL and UU.
- o   18 September 2023: presentation at the first project meeting in Cologne.
- o   25 September 2023: meeting ECOS-UU to finalise the case study template and criteria matrix.
- o   13 November 2023: meeting ISEAL UU ECOS to discuss the results of the case studies.
- o   5 December: first draft report provided to reviewers.

2.1   Scoping phase

One key element of the scoping phase was to ensure that the 3-CO project addresses all important questions in sustainability communication to consumer, via the distribution of tasks foreseen at inception. Sustainability communication concerns both the what and the how: what information is shared, and how is it created, vs how is it communicated and is it understood.

The relevance and robustness of certification processes and sustainability criteria are analysed in WP1 of the project (results expected in end of 2024). Therefore, Task 2.2 focused solely on *communication aspects*, and the elements that are directly relevant to consumers. This leads to the following research question: **How to ensure that voluntary labels and certification schemes properly inform consumers about the sustainability of certified products?**

Considering that the 3-CO project focuses on the work of certification schemes, the desk research was tailored to such schemes rather than to the companies and products to which LCS award certificates. Therefore, while the literature review would bring results often addressing companies directly rather than certification schemes, the derived list of criteria for good sustainability communication was to be designed to fit the schemes themselves. As the desk research was to be conducted on publicly available information, the criteria were to be assessed based on schemes documentation: the guidelines provided to companies on how to use their labels, and the schemes' own websites. The goal was to review how schemes intend their certification process to be reported on products (via logos and explanatory statements), as well as whether the information that they provide on their own website is accessible to consumers.

A literature review was conducted to identify and classify practices applicable to the scope of the research. Sources included recommendations from international organisations (UNEP, ISO), consumer authorities, environmental agencies, established stakeholders such as ISEAL, expert reports for public authorities, and current and upcoming national and European legislations. Sources were collected based on the initial knowledge of the 3-CO experts and further research to complete topics that were not well covered. In total, 146 'rules' for good sustainability information were identified in 14 reports, guidelines and legal texts. This long list formed the basis to develop criteria based on which current practices in sustainability communication by the selected LCS could be evaluated. The rules were first sorted, with duplicates removed, and then reformulated into criteria which could be easily applied on the information available for the case studies within the foreseen timeframe. It was important that the criteria could be applied without the need of evaluating specific product certificate or access background data that was not readily available. The guiding rule was: based on the information publicly available, could an average consumer be properly informed as to what the scheme is certifying?

The resulting criteria are explained in section 3.1. Firstly, all criteria were sorted into seven main themes: accessibility, clarity, relevance, transparency, reliability, sustainable development and display. These were further divided into 15 subthemes (see Annex B). The display theme, related to how information is visually conveyed on the logo as a whole, and was used more as a pointer for the analysis, rather than as criteria to fulfil, as they were often not framed as good or bad practices but neutral descriptions of how a logo may look like. Second, the duplicates were merged, and wording was adapted to the purpose of the task; to address sustainability in general, beyond purely environmental aspects, and certification schemes and labels rather than companies.

2.2   Selection of labelling and certification schemes

As part of Task 1.2, conducted in the Spring 2023, a shortlist of 25 labelling and certification schemes was identified to be further analysed during the 3-CO project. A back-up list was also gathered in case some short-listed scheme was not fit for analysis. The shortlist was therefore the basis for the benchmark analysis. However, as anticipated, some changes were needed:

- o TÜV Rheinland Green Product Mark Textile was not active at the time of conducting the case studies. While it had been used for B2C communication in the past, it was decided to put it aside.
- o There was internal discussion as to whether including schemes that are not widely present on consumer products. It was decided to keep them, as long as they offered the possibility and provided guidelines to do so. This was considered particularly important, as often these were the schemes that targeted specific novel biobased application, originated in a B2B context, and intended to grow on the consumer market. They were likely to be particularly targeted by the recommendations. Some also offered interesting perspectives on how to guide companies in using their logo appropriately, such as ISCC Plus.
- o The Nutriscore was added to the list for comparison purposes: its scope is different from the other labels (it covers nutritional information rather than sustainability) and has received extensive research and commentary on how best to provide aggregated nutritional information to consumers. As such, it offers an external perspective for the LCS covered in the scope of the 3-CO project.

The final list of LCS is therefore composed of:

- o Bio-based Content certification scheme
- o DIN-Geprüft Biobased / DIN Certco
- o The RSB Global Advanced Products Certification
- o TUV Austria OK biobased
- o TUV Austria OK biodegradable

- o   Better Cotton Initiative
- o   ECOLOGO
- o   Forest Stewardship Council
- o   Good Environmental Choice (The Swedish Society for Nature Conservation)
- o   GOTs - global organic textile standard
- o   International Organic and Natural Cosmetics Corporation BDIH Standard
- o   ISCC Plus (International Sustainability and Carbon Certification)
- o   Natrue-Label
- o   Naturland
- o   Oeko-tex Made in Green
- o   Programme for the Endorsement of Forestry Certification (PEFC)
- o   the vegan trademark
- o   TUV Austria OK Compost Home
- o   UEBT Union for Ethical Bio Trade
- o   Blue Angel
- o   EU Ecolabel
- o   Nordic Swan Ecolabel
- o   oekocontrol
- o   Cradle to Cradle Certified(CM) Products Program
- o   Nutriscore

2.3   Benchmark of LCS practices

2.3.1   Ranking system

Starting from the list of criteria, a ranking system was established, turning each criterion into graded statements, so that within each subtheme, there are two to three criteria with assigned values:

- o   **Best practice:** dark green, can serve as an example for other schemes.
- o   **Good practice:** light green, while not excellent, can be a good alternative.
- o   Nothing remarkable: grey, there was no particular practice to report, either as example to follow or to avoid. The absence of an identified good or best practice can also be due to the criteria in the list not being applicable or highly relevant to this particular scheme.
- o   **Problematic:** yellow, includes practices that are likely to mislead consumers. Scheme owners should consider addressing these issues to improve B2C communication.

While the main goal is to identify good practices, it is also important to identify shortcomings and possibilities for improvement.

The ranking system (Annex A – Ranking system) resembles a checklist, similar to a "pass or fail" system. The purpose of the ranking is to perform a systematic benchmark analysis of the practices used by certification schemes to provide information to consumers, also enabling a comparison of results. However, in a number of cases, practices that were identified as not sufficient in specific contexts in the literature, were, in the cases analysed, sometimes justified by the nature of the scheme or the information. Therefore, the ranking is accompanied by the possibility to add contextual and more in-depth comments in the case study template to provide a more comprehensive analysis and inform the recommendation section, and especially the decision trees.

2.3.2 Case studies

The case study template (Annex B – Case study template) was developed to facilitate the analysis of the schemes. With the template, analysts first apply the ranking system, and then provide further comments. The use of a colour code applied to the ranked criteria and some open texts allow for an easy visualisation of how schemes perform in the different themes. The template also included a section to add eventual additional practices, either best, good, to be avoided or bad practices, to supplement recommendations. However, in the end this section was not used, as most details were added in the comments instead.

Altogether 25 case studies (schemes) were analysed. The results of the case studies were integrated in an overview table (see Annex C – Benchmark overview), in order to identify overall tendencies in the respect of the criteria. The comment sections and additional practices identified were used to refine the overall observations and to bring some nuance. All details and results are provided in Section 3 of this report.

2.4 Recommendations

Based on the analysis of the case studies, a list of recommendations was made for scheme owners, policymakers and the wider biobased ecosystem. Particular attention was accorded to LCS that are very specific to the biobased sector, and not widely established as B2C labels at the time of drafting the report. These schemes were indeed identified as those having the most need to adopt more good and best practices to ensure that they have added value todecision-making consumers, and avoid misleading them. As they cover topics that are not often well known to the consumers, there is also a need for a reflection on what is worth communicating. Decision trees were also designed based on the recommendations, to support with decision making regarding certain aspects covered in the case studies. For example, the decision trees should help with deciding how to present certain type of information, what level of information to include, or what type of certification to seek out.

3   Findings

This chapter summarises the results of the literature review and of the case studies. It notably includes a summary of rules on how to make good communication to consumers on sustainability, and how these rules were translated into criteria to be applied to labels and certification schemes. It also includes a description of how the selected LCSs apply these criteria, with examples of good, best and problematic practices for illustration. The results of the case studies are presented under the form of a benchmark, indicating which themes of criteria are well covered by the surveyed LCSs, and which ones require further work and development to ensure that consumers are properly informed. It does not however provide a ranking of best to worse LCSs, as this is not the purpose of this report.

3.1   Literature review and list of criteria

3.1.1   General overview of existing guidance on communicating sustainability of products to consumers

A first screening was done, identifying several types of documents:

- o   Research assessing what works best for providing information.
- o   Voluntary guidance and recommendations for claims in general, mostly aimed at companies.
- o   Voluntary guidance and recommendations for certification schemes, looking at the whole certification process. Claims are mentioned but not always assessed in depth.
- o   Guidance from market authorities: while they are not law, disregarding them exposes companies and schemes to prosecution. They may include best practices but overall provide a picture of what should be done at the bare minimum.
- o   Regulations set minimum rules for claims and certification schemes. They may also include recommendations for best practices but focus on what should and should not be done in the making of claims to consumer.

This first step took a broader approach to the research question and mapped the topics usually included in recommendation to certification schemes. These codes of conduct revolve around core principles that labelling and certification schemes need to abide to, and provides guidance on what an LCS operator should look at when creating the information they want to communicate, and therefore the certification processes that need to be in place. Broadly, they answer the following questions (ISEAL, 2010) (ISEAL, 2015):

- o   What type of information is collected?
- o   How is the information created?
- o   How is the information verified?
- o   How is the information certified?

- o   Is there any process after the certification to ensure that the information remains up to date?
- o   How is the information displayed?
- o   What is the level of details to be displayed?
- o   How to frame the sustainability message?
- o   What are the monitoring and compliance procedures to avoid fraud and misuse of the label?

3.1.2   Key principles in sustainability claims towards consumers

The second step was to narrow down the literature review to the research question, focusing on *how* sustainability information is best communicated to consumers. In this category, most of the literature arises from guidance from public authorities and regulation. As most sources looked at the same themes, there seemed to be an overall consensus as to what constitutes as good information to consumers and what practices must be avoided in principle. The list of criteria was therefore organised around these themes, identified based on the analysis as *accessibility, clarity, relevance, transparency, reliability, sustainable development* and *display*. These themes are further described below.

Accessibility

In the context of this report, accessibility refers to ease of access to a sustainability claim and further information. According to the United Nations Environment Programme (UNEP), claims should be clearly visible and readily accessible on or close to the product (UNEP, 2017). The International Organization for Standardization's standard ISO 14021 on self-declared environmental statements further adds that it should be clear that any accompanying explanation should be read together with the claim, and that the explanation should be reasonably close to the claim (ISO, 2016). This explanatory text aims to further specify how to understand the claim, considering that claims are often drafted in a short and sharp manner for marketing purposes[1]. In this report we use the word 'statement' to refer to 'explanatory text'. Besides the claims themselves, information on the scheme and its rules and criteria should be accessible to the public (France Ministry of the Economy and National Council on Consumption, 2023) (European Commission, 2023).

In the criteria list, accessibility was assessed from three aspects. Firstly, the scheme's website should have a section written for consumers, that is easy to find and explains the purpose and scope of the scheme (what type of sustainability criteria are covered, what product groups, what aspects of the products). To operate, certification schemes will have detailed documents on their procedures, and what is covered by the scheme. But this information is of technical nature and not easily understandable for a nonprofessional audience. In addition, these documents are usually files stored on a repository, and not

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[1] The ISO standard 14021 uses the word 'statement' in the way the word claim is used in this report. However, in most guidelines, the word statement is used to mention explanatory statements, to describe a text accompanying a claim to further specify it. For the purpose of this report, we will use 'statement' in this way, rather than the ISO usage.

easy to navigate. Accessible websites are website that have on their frontpage clear information on the scheme, and eventually a dedicated section to inform consumers of their work and how to use this information when buying and using products. Most websites include a searching tool to find products that are certified, but usually with limited information. Exceptionally, some websites have a certificate repository that includes consumer-oriented information on why the product was awarded a certificate and where to buy it.

Secondly, a best practice is for the scheme to include in its guidance the possibility to add an explanatory statement, to provide more on-package information about what is covered in the certification. This is especially useful if a label has different levels of certification (e.g. bronze, silver, gold) or covers multiple scopes (e.g. to indicate that the certification only applies to part of the product, or that the certificate refers to one programme of the label covering carbon footprint, but not the programme covering e.g. social aspects).

Finally, the guidance should provide clear instruction on the use of statements, and how they should be displayed next to the claim. This is important to ensure that consumers do not miss this important information and only notice the main logo. Some guidance documents propose very simple explanatory statements, to be put right next to the logo. Others offer the possibility for more lengthy text and explain how to add it on packaging (usually at the back) without losing accessibility.

Summary of Accessibility criteria:

1. Website: is there a dedicated section for consumers, or at least is the website offering accessible descriptions for the general public?
2. Statements: is there a possibility to add additional statements to specify the claim?
3. Place of claim: are there guidelines on how to place statements and claims next to the logo?

Clarity

Clarity is a key principle in green marketing, which is insisted upon by all guidelines and regulations reviewed, from UNEP, the European Commission, the Netherlands, the United Kingdom (United Kingdom Competition and Markets Authority, 2021), France, ISO, and ISEAL.

The scope should be clear. A claim should be specific, and any general or vague claim should be avoided. In particular, ambiguities and risks of misunderstanding should be minimised. No claim should pretend to achieve overall sustainability, as this is considered materially impossible (ISO 14021).

A consumer should be able to easily find what the exact sustainability aspects covered by the label are. Directly on the product, it should be clear what the main sustainability aspects are, and whether the label applies to part or entirety of the product. As far as possible, the extent of the claim should be indicated (e.g. if a product has a reduced carbon footprint, by how much it has been directly reduced should be indicated) (ADEME, 2022).

As a best practice, clarity can be improved via the use of graphics, pictograms and other visuals to limit language barriers and improve readability (UNEP, 2017). On the contrary, the use of purely decorative imagery which might confuse the consumer as to the scope of the scheme should be avoided (the Netherlands Authority for Consumers and Markets, 2023).

Summary of Clarity criteria:

1. Scope clarity was assessed, and especially to what extent the logo or statement explained whether the claim applied to the whole or part of the product.

2. Precision was assessed in terms of risks of ambiguity: the best practice would be to have on product information clarifying which sustainability aspects are included in the certification. Having this information available only online is considered a minimum guarantee, which could be improved. Finally, pretending to be sustainable overall with no further information on the exact criteria covered was considered a misleading practice.

3. The use of visuals was discussed in the case studies. There are many approaches to the use of visuals depending on the type of schemes. The main element is the scheme's logo: some are purely decorative, while others evoke the kind of aspects they cover (e.g. a leaf or an animal). Some schemes propose different logos depending on the exact certification awarded (product categories, aspect covered). More often, these differentiations are shown in the explanatory statement, which can include pictograms. Schemes that propose graded labels also use colors and pictograms to indicate the category awarded to the product. In general, Ecolabels covering multiple issues tend to use a simple logo, and rely on information campaigns to make sure consumers know what they stand for. Specialised certification schemes covering only a few parameters are more likely to use pictograms to present all the aspects covered.

4. The use of gradation by labels is a key question when it comes to clarity. Most schemes propose a pass or fail system, whereby a product must pass a minimum set of criteria to be awarded the label. This was considered a best practice for its simplicity in the benchmarking exercise (Soler, et al., 2021). However, there can be arguments in favour of a graded voluntary label. Contrary to mandatory scores that include poor grades for poor performers, voluntary labels tend to focus on top performers. But they may want to still add a gradation at the top, to encourage companies to continuously improve and get the top grade. In any case, clarity on the gradation use must be achieved. If a product is awarded a certain class, a consumer should be aware that the scheme has several classes, what the classes are, and in which class the product falls, and finally what is the level of ambition of that class compared to the market average. Not all details need to be on product, but there should not ambiguities.

5. Finally, the claim can propose two types of information: descriptive ('this product has a reduced environmental footprint') and interpretative ('by purchasing this product, you contribute to fair

working conditions'). According to a French scientific council (Soler, et al., 2021), framing claims to be both descriptive and interpretative is a best practice as description raises trust for consumers, but interpretation helps them actually act and choose.

Relevance

Relevance refers to the issues addressed by the certification, and whether the criteria selected are relevant to these issues. For example, if the scheme targets environmental sustainability, are the impacts assessed relevant for the product that is looked at? Is there any hotspot missing? Are claims exaggerating the sustainability gains of the product? If a claim is encouraging behaviour change from consumer, would this change make a major difference, or is it burden shifting from the company to consumers? (UNEP, 2017) (ISO, 2016) (United Kingdom Competition and Markets Authority, 2021) (France Ministry of the Economy and National Council on Consumption, 2023) (European Commission, 2023)

Most aspects do not directly deal with communication to consumers. This criterion was therefore assessed only by checking whether the scheme was covering a single or limited set of issues, or it was aiming at addressing sustainability overall through multiple issues. While wide-ranging labels are considered as having the most added value, there can still be use for more specialised labels. This is further discussed in Section 3.2 (case studies results)

Summary of Relevance criteria

1. Does the claim cover a single / a limited set issues or does it cover multiple issues, allowing to assess sustainability overall?

Transparency

Certification schemes should be transparent about their operations, processes, governance and criteria. Transparency means that the necessary documentation is available publicly and easily available. Regarding biobased products, France adds that consumers should be informed of the nature (exact source) of the biobased content, and this information should be directly available on the product or its packaging. Additionally, if it is claimed that using biobased content reduces environmental impacts, the claim should be specific about the nature and extent of this reduction (France Ministry of the Economy and National Council on Consumption, 2023).

Summary of Transparency criteria:

1. Scheme transparency: a scheme was considered transparent if its operation, processes, governance and criteria were described in publicly and easily accessible documents on its website.

2. Biobased content: when a label had the indication of the exact source, this was noted as a good practice. However, in many instances, the relevance of this criteria was unclear.

Reliability

Like relevance, reliability refers less to communication than to the inner processes of the certification scheme. On one side it, refers to the data and methodology employed to assess the claims, and on the other, on the independence of the evaluators examining the claims. Overall, reliability means that rules and checks are in place to ensure that the claim is truthful. (UNEP, 2017) (ISO, 2016) (ISO, 2018) (ISEAL, 2015) (the Netherlands Authority for Consumers and Markets, 2023) (United Kingdom Competition and Markets Authority, 2021) (France Ministry of the Economy and National Council on Consumption, 2023) (European Commission, 2023)

To the extent that consumer information is concerned, it was considered a best practice to publicise supporting information behind the claim, and to inform consumers that a third-party assessment had been undertaken to obtain the certification. As the details of the documentation provided by companies to schemes and verifiers are partly confidential, and of technical nature, very few schemes provide detailed information on each product certified. However, even if the details are not available to consumers, they should be informed that this information has indeed been collected and could potentially be (at least partially) available on demand. The benchmarking therefore covered whether this was mentioned on the scheme's website.

Regarding third party assessment, most schemes rely on them for awarding certificates. However, consumers might not be aware of these processes. For these reasons, some labels include a specific mention on packaging, to increase consumers' confidence in the scheme. While it is a fairly rare occurrence, this was highlighted in the case studies as a good practice (Elsen, 2019)

Summary of Reliability criteria:
1. Supporting information: is there data specific to the labelled product available to assess the reliability of its claim?
2. Third-party assessment: is there a visible mark that the product and supporting information were verified by a third party before awarding the label?

Sustainable development

When making claims on sustainable development, it is important to consider all dimensions: environmental, social, and economic sustainability. Especially, burden-shifting across the three dimensions should be avoided (UNEP, 2017). For certification schemes, this principle can be applied in several ways: one way is to ensure that the rules that they ask to be followed to be awarded the label do not have a detrimental effect, e.g. nature preservation rules should minimise the risk of adverse social

effects. Another way is to include several dimensions in the certification. This depends on the focus of the label: a label focused on a specific raw material (e.g. wood or cotton) can address both social and environmental issues. However, an ecolabel that addresses all components of a product across many environmental impacts, is likely to have limited criteria on social aspects. Nonetheless, most wide-ranging ecolabels include some minimum rules on social issues, despite this not being their core focus. A best practice would be to both avoid burden-shifting and assess all dimensions of sustainability in the scheme criteria. However, it is not considered a bad practice to focus on a specific dimension. In that case, UNEP recommends companies combine complementary schemes when getting certified. A technique used by schemes that want to cover multiple issues without the additional work is to recognise specialised certifications already awarded to a product.

Finally, it must be noted that in general, environmental and social sustainability are the focus of certification schemes. Economic sustainability relates to ensuring that companies fulfilling the criteria of a scheme are still capable of operating economically and eventually making profits and grow. One way of assessing this is whether companies choose to apply for a scheme. As such, while this is accounted for when designing a scheme criteria, this is not something that is communicated to consumers, as there is no real need for it: as long as a company is capable of putting a product on the market, this criteria can be considered fulfilled. Other elements associated with economic sustainability are the fight against poverty: this is usually included within the social pillar.

As part of sustainable development, existing guidelines and research points that sustainability communication should actively include elements of behavioural change, considering that it is the goal of the communication. The UNEP guidelines encourage companies to make environmental communication that foster consumer action and behaviour change where appropriate (UNEP, 2017). Similarly, research by Muller and Ruffieux show that because the level of information of consumers on sustainability is still very low, it is important that labels educate consumers (Muller & Ruffieux, 2020). Certification schemes should provide educational materials on why the issues they cover are important, and the order of magnitude of the impact that buying certified products might have. This educational aspect can be integrated directly on the product or its packaging, as part of the explanatory statement and design of the logo and other images. It can also be part of consumer-oriented materials online and in promotional campaigns. While this is common practice for well-established ecolabels, this can be particularly relevant for specialised schemes that address less known issues, such as biobased content, and novel biobased applications.

It is important to note that while educating consumers is a core need in environmental information, that this should not translate in making claims that removes companies' accountability from the impact of their products, and puts the burden on the consumer.

Summary of Sustainable development criteria:

1. Sustainable development: schemes covering both social and environmental dimensions were highlighted.
2. Education purpose: schemes with a clear educational purpose were highlighted.

3.1.3 Designing the right display to convey sustainability information

The core criteria described above provide a number of indications that should influence how the overall display of the label and explanatory statements are designed. The 'display' is the final result where all these criteria come together into what consumers will effectively see on a product. Labels and statements need to address all these issues while using limited space and avoiding language barriers. It is therefore a balancing act which will very much depend on the specific information each labelling scheme wants to convey. However, some common rules can be summarised here.

Applying the UNEP criteria to voluntary labels

The literature review found few studies on how consumers react and understand different displays in the context of voluntary certification schemes. One rare example is a report from the One Planet Network Consumer Information Programme on recycling claims for plastic packaging (UNEP & Consumers International, 2020). In this report, the authors apply the UNEP criteria (mentioned in the previous section) to on-product labels, and discuss how certain labels are likely to be interpreted by consumers and how to improve clarity. It covers some of the labels which have been studied as a case study for the present report (DIN-Geprüft Biobased, OK Biobased by TUV Austria, RSB). A relevant take-away from the report is that schemes proposing labels should better reflect on whether there is added value in using packaging space for a label that primarily communicate an environmental aspect that has little added value to overall sustainability (e.g. recycling or bio-degrading a plastic product essentially downgrade or destroy its value, and is at the botton of the circularity pyramid), instead of communicating in overall sustainability or more significant hotspots.

Key learnings from aggregated scoring (nutriscore, LCA-based scores)

One case that has been further studied are labels based on aggregated scores and including classes of performance, such as the mandatory energy labelling, LCA-based environmental scoring, and the nutriscore. Most research was done as part of preparatory studies to determine how best to design these labels.

Balancing transparency and conciseness: reporting aggregation

While consumers should have access to detailed information about the methodology and data used to come up to a score, on-product information must strike a balance between transparency and ease to understanding messages/information (BIO Intelligence Service, IPSOS, Ecologic, 2012). Too much information can be confusing and inhibit decision making, as consumers would have to decide for themselves which indicator is most relevant, and what is their overall assessment of all the analytical results (BIO Intelligence Service, IPSOS, Ecologic, 2012) (Soler, et al., 2021). However too much aggregation can lack transparency and hide important discrepancies between indicators.

What can be easier is to give one aggregated score, providing an overall assessment of sustainability, complemented with up to three individual indicators to provide more detailed information (BIO Intelligence Service, IPSOS, Ecologic, 2012). Adding next to an overall score or label some additional information is usually valued by consumers (Muller, Lacroix, & Ruffieux, 2019). Even when they do not understand everything, or make actual use of that information, it increases their trust in the label (BIO Intelligence Service, IPSOS, Ecologic, 2012).

Clarifying the scope

Finally, there should also be simplicity and clarity when it comes to the scope of what is covered. In the case of nutriscore, one visual display is used to provide information over a multitude of products, but behind this display, in general, the scoring is applied across categories of product. For example, oils are compared to oils, and fruits to fruits, rather than assessing all types of food on the same scale. While this make methodological sense, if the category is not clearly indicated on the label, it can be very confusing for consumers, and therefore likely to mislead them. A recommendation for sustainability scores was to apply a transversal score rather than different categories. Besides clarity, it also encourages real shifts in consumer behaviours, with higher impacts. For example, while it can be interesting to know which beef product has the least impact on the environment, a consumer will have a much higher impact by reducing their beef consumption all together and switch to plant-based options (Soler, et al., 2021).

Normative versus descriptive labels

Using normative language (better/worse) has more impact on consumers than purely descriptive (BIO Intelligence Service, IPSOS, Ecologic, 2012). Studies related to LCA-based scoring underline the lack of consumers knowledge when it comes to sustainability and the need to provide them not only with descriptive information, but also with a sense of direction, magnitude of impact, hierarchy of sustainable issues, advice on sustainable behaviour, etc. to make the most of labelling (Soler, et al., 2021).

Understanding orders of magnitude: scales and color grading

Absolute values are hard to understand to consumers who lack a notion of orders of magnitude on sustainability issues. The use of scales and relative values can help improve understanding (BIO Intelligence Service, IPSOS, Ecologic, 2012). Besides, consumers seem to be most influenced by the highest and lowest scores (deciding in one case to indeed buy the product, or on the contrary to avoid it), while middle scores lead to little change in purchasing intention. (Crosetto et al., 2020, cited (Soler, et al., 2021))

The use of colors is strongly recommended especially to differentiate different gradation, when it comes to scores and classes of performance (Soler, et al., 2021). This can be frowned upon by manufacturers as it complicates packaging design but helps consumers understand at a glance (BIO Intelligence Service, IPSOS, Ecologic, 2012).

In some sectors, the simpler the better (e.g. textile) (BIO Intelligence Service, IPSOS, Ecologic, 2012).This is notably the case for products that are bought at a cheap price, often, and when consumers have little time or attention to dedicate to the decision (e.g. in a supermarket) (Soler, et al., 2021). But then this should be limited to top performers (e.g. ecolabels), contrary to e.g. a graded label that include underperformer (e.g. mandatory energy labelling).

A note on the use of scoring by voluntary labels

Learnings from the literature review had to be adapted to the kind of certification schemes that were to be covered in the case studies. Notably, score and aggregated scoring such as the nutriscore or energy labelling have usually been designed having in mind that these labels would become mandatory for all products within a certain category. The nutriscore famously failed to be adopted as a legal obligation within the European Union, but was nonetheless designed with this objective in mind. When a label is mandatory, it applies to all products, whether they perform well or bad, in the objective of helping consumers identify good performers, and push bad performers out of the market (notably with a ban on selling products awarded the lowest categories, as is the case with the energy efficiency labelling). When a scheme is voluntary, such scoring make less sense, as only products with a high score will have an incentive in displaying the score and logo. This is why ecolabels following ISO 14024 (ISO, 2018) typically adress 'best in class' products, usually the top 10 to 20% best performers within their category. Some voluntary schemes however, decide to provide different classes, to create a path of improvements for companies: the idea is that while a product should already perform well to be awarded the lowest score (e.g. bronze), companies would be incentivise in getting the highest score (e.g. gold or platinum). This is a way for certification schemes to work with companies and accompanying them toward greater performance. However, when communicated to consumers, this can result in misleading information (e.g. displaying a gold score, without mentioning that a platinum level exist; or awarding a gold score to products that are not particularly better than the market average because the scoring is unambitious).

No specific criteria was defined to assess the display, however experts were asked to comment on:

o   Is the final display a fair balancing of the criteria discussed in the previous sections?

o   Can a consumer, at first glance, understand what the label certifies, and especially whether it is a specific issue or a set of multiple sustainability aspects?

o   If grades or scores are used, are they crystal-clear?

o   If the overall display is a simple logo, is it sufficient?

o   If the overall display is complex (with multiple symbols or text), is it clear?

3.2   Case studies

Based on the criteria, 25 schemes were analysed as case studies:

o   Bio-based Content certification scheme

o   DIN-Geprüft Biobased / DIN Certco

o   The RSB Global Advanced Products Certification

o   TUV Austria OK biobased

o   TUV Austria OK biodegradable

o   Better Cotton Initiative

o   ECOLOGO

o   Forest Stewardship Council

o   Good Environmental Choice (The Swedish Society for Nature Conservation)

o   GOTs - global organic textile standard

o   International Organic and Natural Cosmetics Corporation BDIH Standard

o   ISCC Plus (International Sustainability and Carbon Certification)

o   Natrue-Label

o   Naturland

o   Oeko-tex Made in Green

o   Programme for the Endorsement of Forestry Certification (PEFC)

o   the vegan trademark

o   TUV Austria OK Compost Home

o   UEBT Union for Ethical Bio Trade

o   Blue Angel

o   EU Ecolabel

o   Nordic Swan Ecolabel

o   oekocontrol

o   Cradle to Cradle Certified(CM) Products Program

- o   Nutriscore

Overall, most of the schemes performed well against the different criteria assessed. Only one scheme failed to show any best practice on any criteria, while two schemes totalled ten best practices across the different criteria. All schemes followed at least one good practice. However, 12 LCS had at least one problematic practice and the worst one totalled four yellow cards. Problematic practices are those practices that are likely to be considered highly confusing to consumers. Finally, in the benchmark overview, half of the cells are grey. This means that the schemes did not do anything particularly remarkable by this criterion.

In the following sub-chapters, the results under each criteria category are described, building on the comments provided for the case studies. Resulting recommendations for each category can be found in Chapter 4. The results for the nutri-score are not included in these sub-chapters, only in the very last paragraph on general conclusions on the case study results.

In the below Table 3, an overview of the results per criteria is presented. Cells marked as n.a. mean that it was not possible (by design) to assign the column's score in this sub-theme. Color grading is applied to the whole column (e.g. Place of claim is the sub-theme that received the highest number, 17, of best practices in the entire evaluation). A row with a high level of 'nothing remarkable' indicates that while there might not be many problematic practices, the schemes overall did not showcase much good or best practices, and therefore have room for improvement.

Table 3 - Case study results: summary table per criteria

| Theme	Sub-theme	Best	Good	Problematic	Nothing remarkable
Accessibility	Website	8	9	n.a	7
	Statements	14	n.a	n.a	10
	Place of claim	17	n.a	n.a	7
Clarity	Clear scope	12	n.a	4	8
	Precision	9	n.a	3	12
	Visuals: use of pictures	12	n.a	n.a	12
	Gradation	n.a	21	n.a	3
	Information	4	n.a	n.a	20
Relevance	Comprehensiveness	n.a	14	n.a	10
Transparency	Scheme transparency	13	n.a	3	8
	Biobased content	n.a	4	n.a	20
Reliability	Supporting information	1	n.a	2	21
	Third party assessment	n.a	11	n.a	13
Sustainable Development	Three dimensions of sustainability	13	n.a	4	7
	Educational purpose	4	n.a	n.a	20
Display	Appreciation from reviewer	12	n.a	2	10

3.2.1 Accessibility
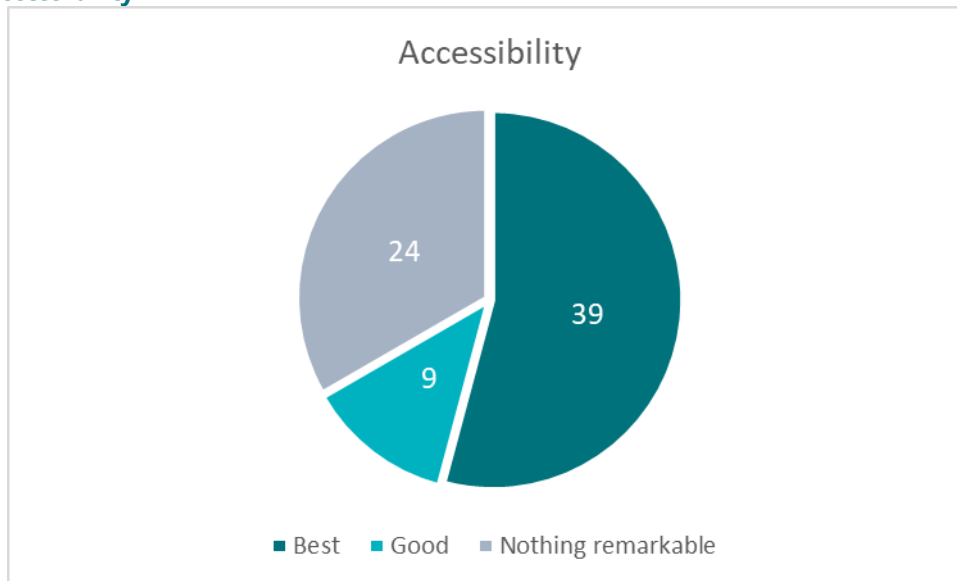
Figure 1 Summary of accessibility results (counts)

Overall, as shown in Figure 1, the accessibility criteria are mastered by most of the schemes. Ecolabels (EU Ecolabel, Blue Angel, Nordic Swan) and PEFC and FSC stand out. Most websites are designed to be accessible to consumers. About a third have a dedicated section for them to find information (best practice), another third is written in accessible language although not targeted at consumers (good practice). The rest of the schemes had websites that were either very technical in nature or hosted very little public information.

When it comes to explanatory statements, more than half (14 out of 24) schemes have extensive and public guidelines on how to include and best use them (best practice), although most are not mandatory. The case studies did not cover if companies usually add this statement. 17 schemes were also clear on where to display claims to ensure that on product information is accessible to consumers (best practice). In Figure 2 and Figure 3, two ecolabels examples are reproduced, with the possibility to add a detailed statement next to the logo. Companies must add statements designed by the ecolabels.
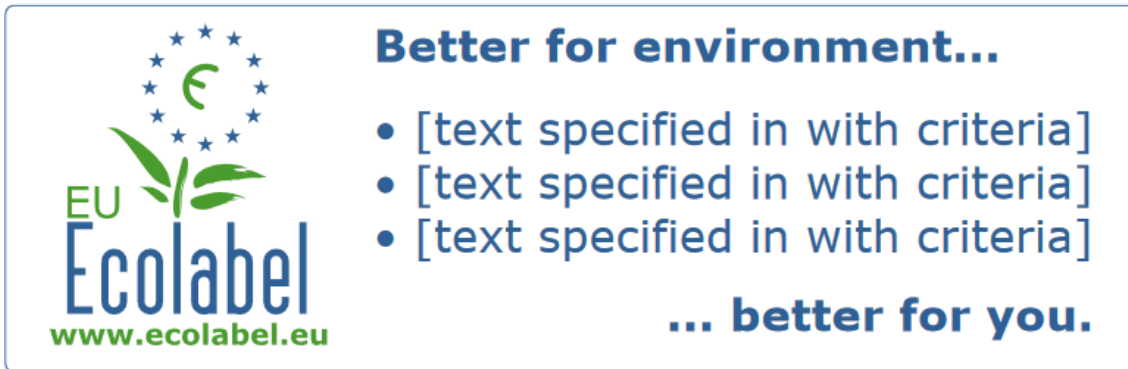
Figure 2 The option logo of the EU Ecolabel with additional statements (EU Ecolabel helpdesk, 2022)

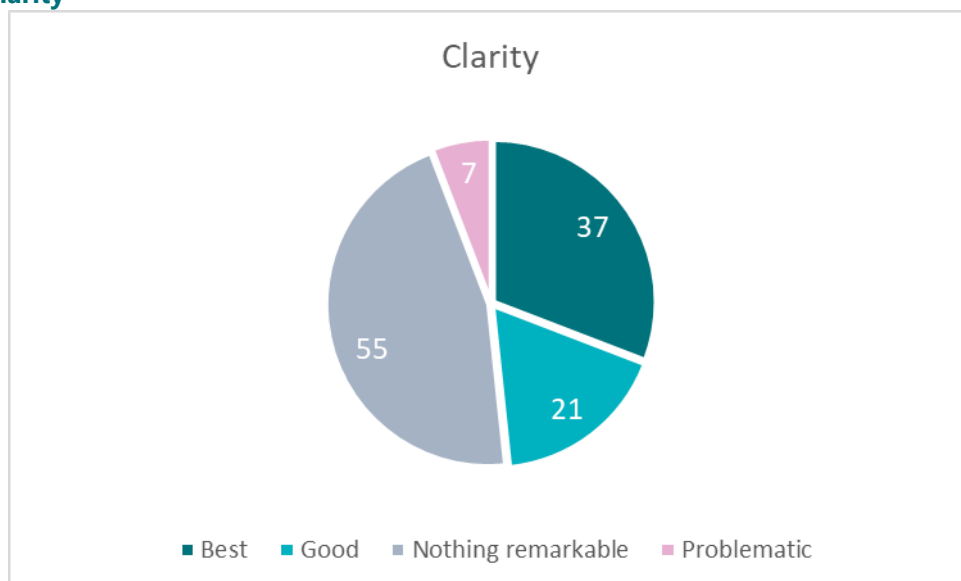Figure 3 Blue Angel logo with statement (Blue Angel, 2021)

3.2.2 Clarity

Figure 4 Summary of clarity results (counts)

Overall, as shown in Figure 4 while many best and good practices were identified, clarity remains a work in progress for most schemes. Best examples are the EU Ecolabel and UEBT. While a lot of details cannot possibly be captured on "on-product logos", many schemes could make more use of the different technics to improve clarity. When details cannot be provided, the need for a well-developed and accessible website becomes paramount to avoid misleading consumers, especially as clarity on scope and criteria is likely to become more prominent in regulation.

Scope

Half of the schemes had a clear scope, especially regarding if claims refer to part or whole product: this information is usually well indicated on the label when the parts are significant (e.g. packaging), as in Figure 5.

Figure 5 Example of Bio-based Content certification scheme logo, for packaging only. (NEN Certification Scheme (NCS), 2016)

Nonetheless, labels are usually not clear on the fact that sometimes the assessment covers only the main parts and not smaller parts (e.g. if a part is less than 10% of the overall volume, it is not accounted for). Four schemes did not offer clear information on the scope, leading to a strong risk that consumers would not understand that the label only refers to part of the product, or to a certain situation (e.g. a biodegradability label did not indicate in which condition the product would biodegrade). In the remaining cases, clarity on scope was not necessarily problematic but could be improved.

Precision

Only 9 schemes had on-product labels that were clear and unambiguous on the aspects covered. More often this information was only available when doing further research on the scheme's website. In particular, labels tend to not communicate on all criteria: they have their primary criteria (e.g. environmental sustainability) that are clearly reported, but also include some secondary, less developed but still mandatory criteria (e.g. a few social criteria) that are not communicated despite the fact that they are part of the assessment. This shows a willingness to have wide ranging assessments but still simplify communication to avoid confusing consumers.

Three schemes could be considered to make general, vague and non-specific claims of sustainability, which is problematic. One of them (Ecologo) made claims of overall sustainability, a practice considered as misleading, even for ecolabels. On the contrary, some labels clearly indicate in their documentation that these generic claims are banned (UEBT).

Visuals and use of pictures

12 schemes out of 24 used pictograms or icons to overcome potential language barrier, which was identified as a best practice.

Gradation

The vast majority of schemes (21 out of 24) did not use any gradation in their logo, awarding the label to products that fulfilled the scheme's criteria. This is considered a good practice from the point of view of communication towards consumers, as it limits the risk of misunderstandings. However, there is no clear way to distinguish schemes that only award "best in class" products (e.g. ecolabels following the ISO 14024 rules) and schemes that have a fairly accessible list of criteria.

Three LCS awarded different classes within the label, but not all were clear on the class system. For example, the GOTs label offers two classes, 'organic' and 'made with organic material' to distinguish different percentages of organic material used in the product, but this is not explained on the label displayed on the product. While awarding classes is not per se misleading, being unclear on the class system is highly misleading, especially in this case where the classes' name are very close (as opposed to, e.g., gold and platinum which involve clear gradation), or when the consumer cannot know the number of classes, as showcased in Figure 6.

Figure 6 Gold label - not mentioning the existence of a platinum level (Cradle to Cradle Products Innovation Institute, 2021)

Information

Only four schemes propose both descriptive and interpretative ("this is better for the environment") information. Overall, this practice was not considered by the experts to have much-added value to

communication to consumers: purely descriptive logos might not support consumer choice, but they are less likely to overpromise on the sustainability benefits of products.

Interestingly, some schemes provide detailed, mandatory on-label information to be more precise about what the scheme covers. While generally good, especially for lesser-known concepts, there are situations where it is unclear if the detailed mention truly informs consumers, or simply protects the scheme from complaints. For example, some schemes allow for the use of mass balance to report specific content (e.g. organic or fair trade), or allow to mix certified with non-certified materials, and rightfully chose to add this information on their logo. As shown in the Figure 7 below, different strategies were adopted. ISCC Plus opts for a detailed explanation of the mass balance method, but focuses on overall productio instead of the product itself. Better Cotton chooses rather to add a disclaimer, and is the only one to clearly informs that there is a possibility that no certified content ended up in the final product ('this product is source via a system of mass balance and therefore may not contain Better Cotton' – bottom line of the label). FSC opts for the term 'supporting responsible forestry', as opposed to its other two labels that use the terms 'made from': while factually correct, the expression is extremely vague and the consumer would have to go to the FSC website to learn more (the website itself being designed for consumer understanding).

We support new recycling technologies that transform hard-to-recycle materials into new plastic. During the production process, recycled and non-recycled plastic is mixed using the ISCC mass balance approach. This product is made with 50%recycled plastic, which is allocated based on the amount of ISCC certified material used in its production. Licence code: ISCC-PLUS-C0001.

FASHIONLABEL

By choosing our cotton products, you're supporting our investment in Better Cotton's mission

investing in better cotton

BetterCotton.org/MassBalance

This product is sourced via a system of mass balance and therefore may not contain Better Cotton.

FSC
www.fsc.org

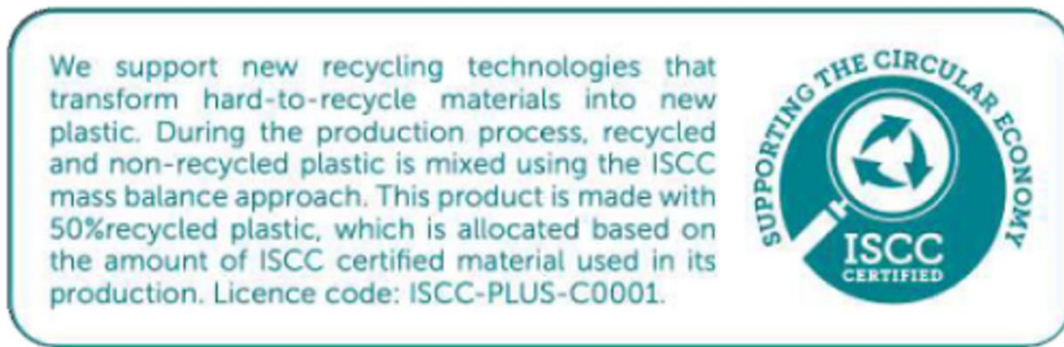MIX

Supporting responsible forestry

FSC® C000000

Figure 7 Explaining mixed content to consumers: examples from ISCC, Better Cotton and FSC (ISCC, 2022) (Better Cotton, 2023) (FSC, 2021)
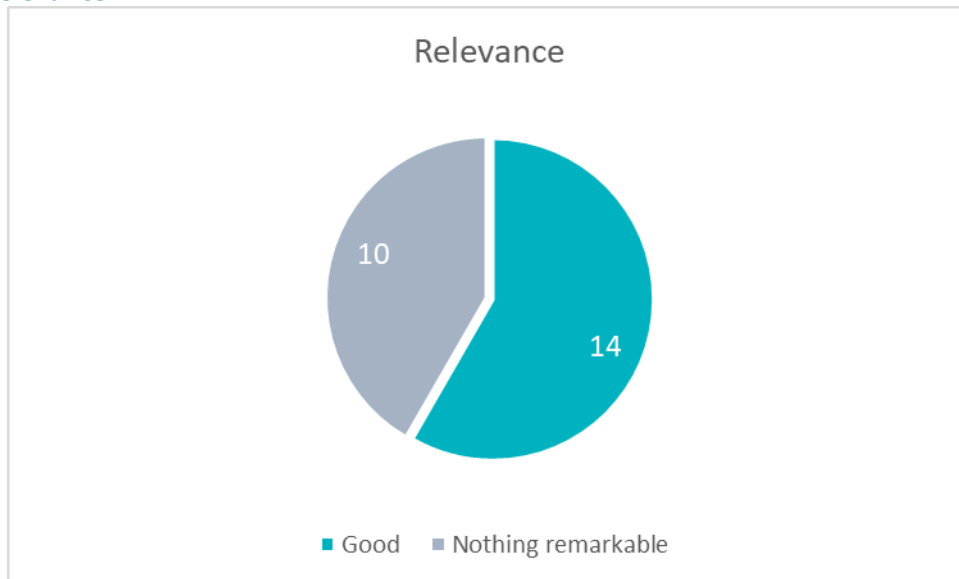
3.2.3 Relevance

Figure 8 Summary of relevance results (counts)

As a reminder, in this report, relevance was assessed only in terms of whether the scheme covers multiple or single sustainability criteria. Further study of the relevance of the detailed criteria over the lifecycle will be assessed in a later report in 2024. Furthermore, no problematic or best practices were identified under this criteria, and could therefore not be assigned in this study. As shown in Figure 8, 14 schemes cover a broad range of sustainability criteria, while 10 are more focused on a particular issue (e.g. raw material extraction or procuring). There is a great variety, from ecolabels looking at the whole lifecycle, to schemes looking at a few aspects directly related to a specific step (e.g. raw material extraction). Some schemes design labels and statements that are relevant to the aspect that they assess, while other might mislead consumers into thinking that they are assessing more than they do. It is interesting to note that in the case of wide-ranging schemes, they sometimes rely on other certifications as proof of fulfilling certain criteria.
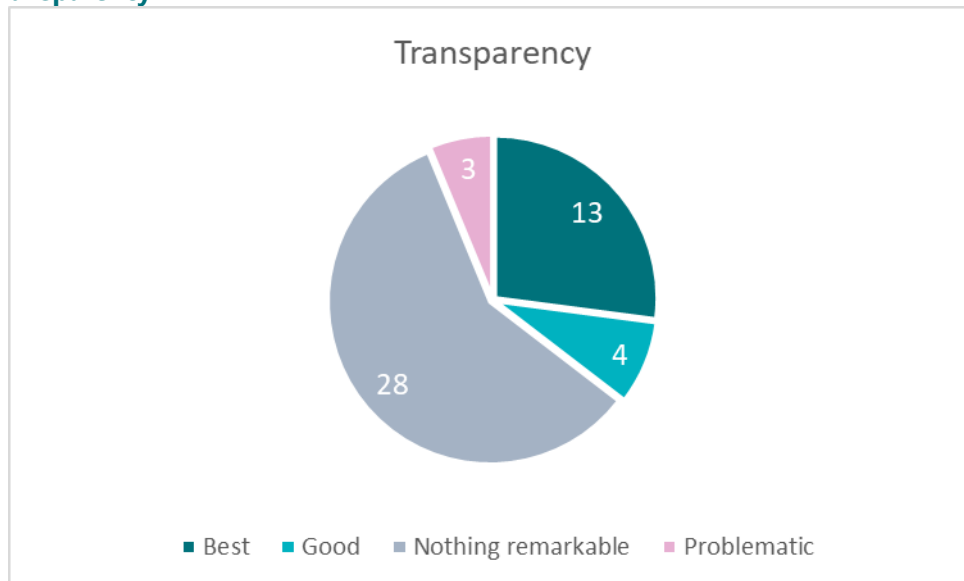
3.2.4   Transparency

Figure 9 Summary of transparency results (counts)

As shown in Figure 9, only 13 schemes had their criteria and objectives publicly and easily accessible, easy to understand and sufficiently detailed. Eight were fairly transparent, but too vague or technical in nature. Three schemes did not provide publicly and easily available information and were considered untransparent. There was one clear case of a certification scheme for which there was too little information available as to the scope, criteria, or existence of actual verification processes (ÖkoControl). In some cases, the schemes are built on standards that are not publicly available, reducing transparency. This is worsened when the website does not provide a clear introduction to the scheme and what it certifies and how. On the opposite site of the spectrum, some schemes have all information available online, with different degrees of accessibility. While ecolabels have websites that are accessible to the ordinary consumer, the numerous product groups and indicators, sometimes referring to other schemes for specific aspects, make exploring the certification process more difficult. Nonetheless, the information is available.

Regarding the criteria on transparency on the nature of biobased content, only four schemes had such an information. However, it was not clear that omitting this information was problematic. In many cases, it was not considered very relevant.
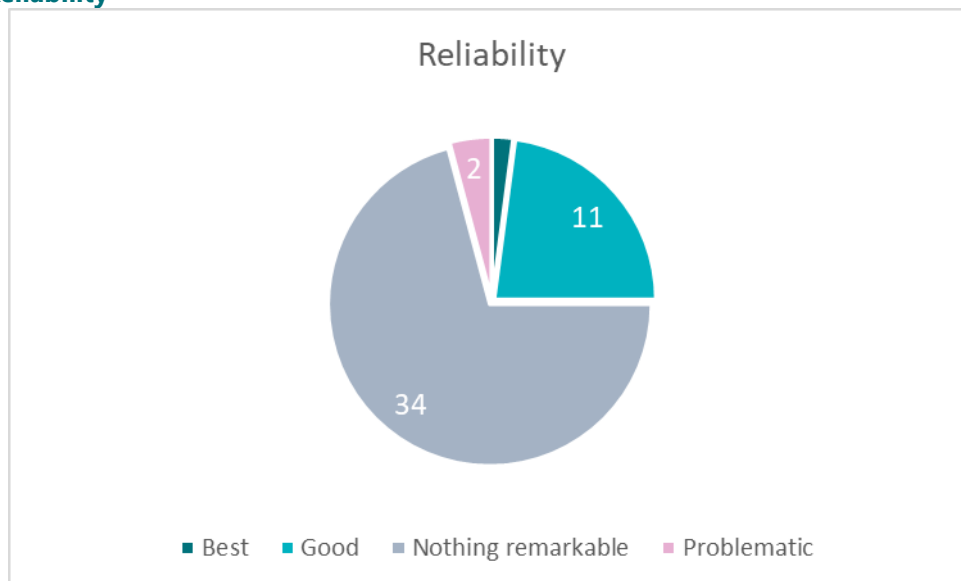
3.2.5 Reliability

Figure 10 Summary of reliability results (counts)

As seen in Figure 10, the reliability criteria offered mixed results. In general, detailed information and supporting documents on how a specific product was awarded the label is not accessible. There was only one case where some details about the certificate was publicly available. Overall, consumers must trust that certification schemes have put in place strong processes to verify claims by the companies against their scheme's criteria.

In general, the presence of the logo of a certification scheme is suggesting (and is interpreted by consumers) as proof that a third-party verification has taken place. In the sample, there was only one case where it was unclear if any verification was taking place beyond the declaration from the company requesting certification for its products. All other schemes have an independent certification process, and most schemes rely on external verifiers. However, this indication is not often added as a visible "trust mark" on the packaging. Most schemes indicate that a company should add their certificate number to the logo, to support traceability, which may be more useful that adding a trust mark. Some publicly available information on the certificate identifies the exact verifier involved. Most schemes offer a register of certified products, but in most cases, there is no further information on the certificate. Best practices identified include indicating the date of the award of certificate, and identification of the verifiers. While offering the possibility to assess background information would go a step further, this is not a current practice in the market.

Some certification schemes covering multiple dimensions require products to first get certification from other schemes that cover specific criteria. This way, they can consider the criteria as fulfilled without having to do the certification themselves on that specific aspect. One certificate therefore relies on previous, ongoing certifications for different aspects. While this is an internal certification process which

is not the topic of the present report, this might lead to the interesting case where a product showcases a logo on a specific aspect (e.g. organic fiber content) and a logo on wider sustainability (e.g. an ecolabel) but both logos are not really additional (the first being implied in the second), something the consumer is not aware of, although not really misleading.

3.2.6   Sustainable development
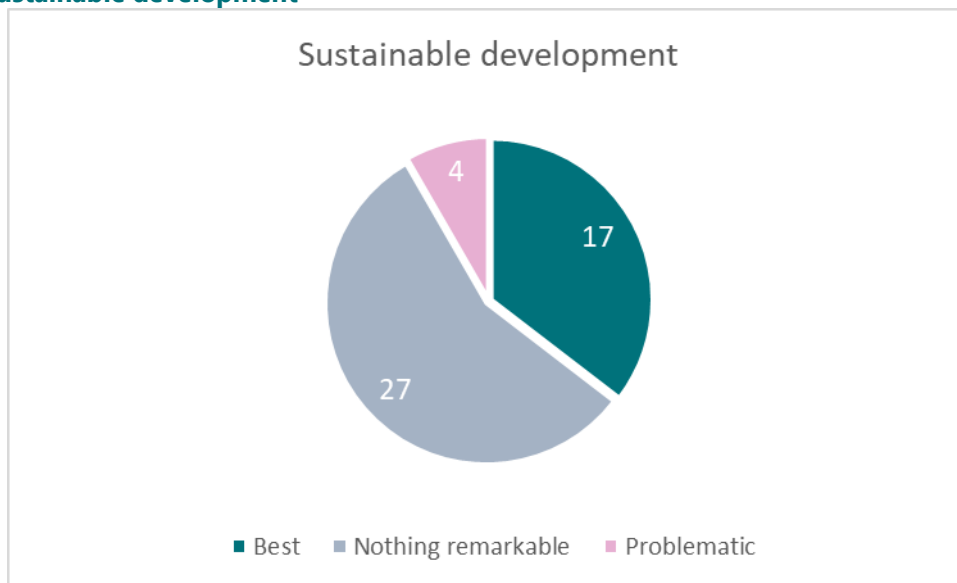
Figure 11 Summary of sustainable development results (counts)

13 schemes covered more than one sustainability dimension, usually addressing both environmental and social sustainability (although they usually focus and communicate on one dimension primarily). As seen in Figure 11 In four cases, sustainability was not assessed. They focus on biobased content, or biodegradability. In these cases, the schemes are not necessarily making a claim of being more sustainable, but it could be implied, which is problematic considering that they do not actually assess this. 11 schemes included an educational perspective in their on-product or communication material. On this category overall, Naturland and the Blue Angels can be looked at as best examples.

3.2.7   Display analysis
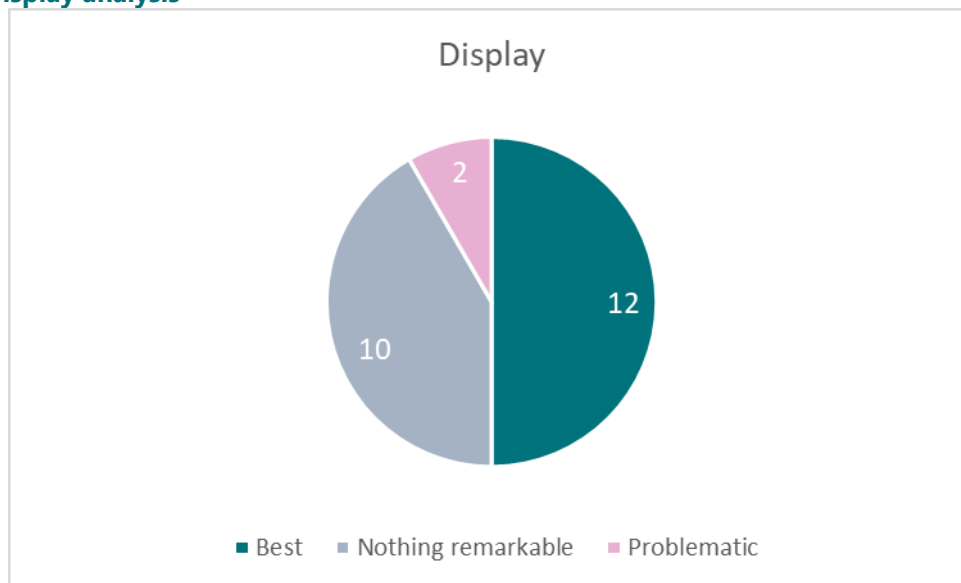
Figure 12 Summary of display results (counts)

As seen in Figure 12, only about half of the schemes were considered by the case studies authors to follow best practices when it came to their visual representation (e.g. logos). While this appreciation is partly subjective, a number of remarks can be made.

Most logos are decorative in nature, and several do not include the full name of label. Without further information, it can be impossible to know what the scheme is about (e.g. RSB and DIN-geprüft Biobased, see Figure 13: while the accronym is included, it would be unclear to someone unfamiliar with the label).

Figure 13 RSB holding shape with URL certified logo (RSB, 2020)

Regarding the use of graded labels and scores, most logos are not clear as to what they refer to, with no further information provided to the consumer. In one case, stars were referring to the amount of biobased content, rather than a percentage (see Figure 14). Considering that the scheme was only assessing content, but not its quality (e.g. sustainability credential), a percentage might have been more appropriate than a star system implying a 'better' performance.

≥ 20% & < 40%

≥ 40% & < 60%

≥ 60% & < 80%

≥ 80%
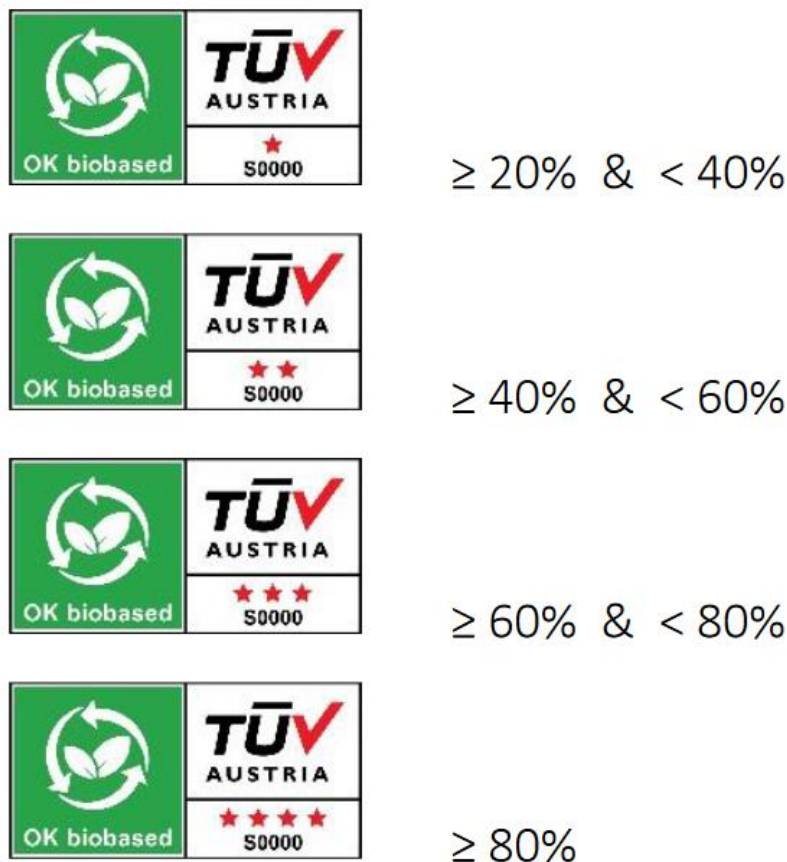
Figure 14 Using stars for amounts rather than quality (percentage indications are not part of the logo) (TUV Austria, 2023)

Certain schemes cover different product categories or product parts. The best practices identified are those logos where this is clearly mentioned, in a very visible way (written on the logo, in bold, eventually with an icon).

Logos range from very specific to what the scheme certifies, to merely decorative. In case where schemes cover specific, not very well known or understood issues, the more detailed the label information, including logo, statement and use of icons, the better to immediately inform consumers at the point of sale. This is especially important if the scheme is recent and has not been awarded many certificates. Wide ranging ecolabels tend to rely on a reputation built on years of existence and media campaigns, making this issue less relevant.

Some labels include links or QR codes to their website to provide further information on the scheme credentials. In some countries, this link is a legal obligation. Where it is not, this is a good practice to overcome the inherent limitation of logo and packaging space.

3.2.8   General conclusions of the case study analysis

One of the goals of the case study analysis was to identify potential segmentation between the different types of labelling schemes. While they all cover sustainability aspects of biobased products (or at least biobased specific aspects)and address consumers, some clusters can be identified:

- o   Ecolabels adhering to ISO 14024 rules (whole life-cycle approach to environmental impact, usually a wide range of product categories)
- o   LCS focusing primarily on social aspects
- o   LCS focusing on specific steps in the value chain (e.g. raw material production or procurement)
- o   LCS focusing on assessing biobased content
- o   LCS focusing on assessing biodegradability or compostability
- o   LCS focused on ethical aspects (here, the vegan trademark)

In addition, few key learnings were identified based on the case study analysis. These are described below.

All types of schemes can and should communicate effectively to consumers
Most clusters of LCSs had at least one of its members showcasing a very high number of best practices (7+), a high number of good practices (+/- 3), and no problematic practice at once: ecolabels (EU Ecolabel, Nordic Swan Ecolabel), social-focused (UEBT), value chain (PEFC, Naturland, FSC). First of all, this means that the criteria identified for good communication practices to consumers are neutral enough to accommodate very different types of sustainability schemes. This does not mean that the different clusters respected these criteria in the same ways, and as shown in the previous sections, different solutions were sought out to adapt to their particularities. Secondly, when it comes to communicating to consumers, there is not one cluster of labels that consistently outperforms others. The results vary within the clusters.

Biobased- and biodegradability-focused schemes need to improve their communication to consumers
Some clusters of labels did not achieve very high results: the ethical and the biobased/biodegradability clusters. The ethical cluster being composed of only one scheme, it is hard to make wide-ranging conclusions, and is therefore not further discussed. Regarding however biobased and biodegradability/compostability LCS, it is striking that all of them present at least one problematic practice and that they overall tend not to showcase many best or good practices.
It is interesting to note in which criteria these schemes tend to underperform:

- o Providing an accessible website to consumers: while some had fairly layman language, half were highly technical in nature. None had a dedicated section for consumers, despite offering a B2C option to certified companies.
- o Few provided clear and unambiguous claims via the logo or explanatory statements. The logo itself was sometimes uninformative as to the purpose of the scheme.
- o The use of grading scale or imagery might sometimes be associated with environmental sustainability, despite the absence of sustainability criteria or clear reference to how biobased content or biodegradability could contribute to environmental sustainability.

Nonetheless, these schemes also showcased best and good practices. Especially, they tended to provide a high level of details on their processes, making the schemes fairly transparent. They also tend to provide well detailed guidelines to companies on how to use their logos and display claims. One (ISCC Plus) has a procedure for using the logo in a B2C context, whereby companies need to provide mock-ups on how they intent to display the logo and statement. This is an interesting practice to ensure that companies are adequately guided, but also for the scheme to learn how their logo can be used in a B2C context, which is a fairly recent activity for the scheme.

Broadly speaking, while these schemes offer the possibility for consumer communication to certified companies, it does not appear to be very developed at the moment. The information provided remains highly technical in its form and has usually not been developed for consumers. While not necessarily intentional, the risk for consumers to associate some of these labels with sustainability, despite not assessing sustainability aspects, is not well accounted for, which might create problems for the scheme owners. It is important that biobased and biodegradability-specific schemes improve their B2C communication, and either clarify the goal of the scheme or integrate sustainability criteria. Companies displaying the logo on their products should make use of all supporting guidelines provided by the scheme when available and invest in additional efforts to inform consumers.

Alternatively, schemes could consider stop offering consumer-facing labels, and feed into the certification processes of wider-ranging schemes such as ecolabels. Considering how specific their scope is, there should be a reflection on the added value for consumers of becoming familiar with this type of label.

Conclusions on the comparison with the Nutriscore

Finally, a 25th case study covered the Nutriscore, to add an element of comparison with schemes that have a different scope than the 3-CO project, and for which extensive research has been conducted. The Nutriscore is very different in its nature to the other LCS analysed. It also has a particular setting, as each participating country is responsible for publishing information. However, the results were fairly poor. Online information is limited and mostly addressed to companies wishing to participate. While public campaigns were conducted, there is not one central website to inform consumers, making the scheme

fairly opaque. The highly standardised logo, while providing quick and easy grading on product, does not provide any meaningful detail. However, this is explained by the fact that detailed nutritional information is a mandatory labelling component for food products in the European Union. While the Nutriscore has been sometimes proposed as a possible example to replicate for mandatory sustainability information, it does not provide much learning to voluntary sustainability LCS for biobased products, which will need to provide more detailed and tailored information to consumers, to both educate them about sustainability and to inform them on the specific scheme itself.

4   Recommendations and decision trees

In this final chapter, the lessons learnt of the literature review and case studies are translated into recommendations for the 3-CO project's target audiences: scheme owners (and to some extent, certified companies), policy makers, and the wider ecosystem (biobased sector, standard setters).

Recommendations for scheme owners are then summarised into decision trees, to help them decide how to display different types of information that they wish to communicate to consumers.

4.1   Recommendations

4.1.1   Scheme owners

Accessibility

- o   Add a website section specifically for consumers, especially for schemes that are new to offering a B2C label, and cover topics that are not well known to the public.
- o   Ensure companies make use of explanatory statements.

Clarity

- o   On-product labels should always be clear on the scope of the claim: is it a part of the product, its packaging, the whole product, a specific material?
- o   Icons can be an easy way to provide more clarity on the scope, especially on the criteria covered. When the information needs to be more extensive, a link or QR code to an accessible website should be included.
- o   When schemes decide to use graded labels, the scale should be clarified on the product.
- o   Schemes that only award best-in-class products (ISO 14024 ecolabels) would benefit from distinguishing themselves from schemes that are easily accessible to average performers, that is schemes that award a certificate for fullfilling a limited number of criteria, and not for showcasing a high level of sustainability across the whole lifecycle.
- o   If some of the certification practices are likely to be misleading as to the scope of the scheme, this should be clarified on the product (e.g. use of mass balance). When providing information on accounting practices, detailed explanations are more likely to be understood and noticed by consumers than a single word.

Relevance

- o Schemes should carefully consider the scope of their own certification with regard to the largest known impacts of products being put forward for their certification in order to avoid supporting greenwashing.

- o Schemes should be very clear as to the extent of certification, and its limits when they only cover a limited set of aspects. The extent of the claim should be relevant to what is actually certified.

- o When a scheme covers a limited set of aspects that have limited salience to consumers, schemes should explore collaboration with wide-ranging, well-established ecolabels, to help them assess some of their criteria, rather than directly communicating to consumers. This would avoid having a proliferation of logos on products, adressing issues that consumers are unlikely to understand or make use of.

Transparency

- o Schemes should make more effort on transparency. This also relates to the accessibility criteria: if the information is available but hard to access or understand, transparency is reduced.

- o Complex schemes such as ecolabels need to strike a balance between communicating on the whole scheme in a general way and making detailed information on each product group accessible.

- o When referring to other existing certification, additional attention should be given to clarifying what these certifications are.

Reliability

- o Schemes could explore sharing more information on specific certificates.

- o As consumers expect that a certification logo is proof that a product has been verified by a third party, it is paramount that this expectation is matched by certification schemes:
  - o Ensure that quality control procedures are in place to check that certification processes are implemented in line with internal procedures and known best practice.
  - o Checks against certification fraud should be regularly done.
  - o There should be a continuous improvement process to ensure trustworthy and high quality certification.

Sustainable Development

- o For schemes assessing biobased content or biodegradability, but not sustainability:
  - o Make sure the label cannot be misunderstood to also cover sustainability
  - o Consider including sustainability criteria
- o For schemes that cover one primary dimension, but also have criteria covering other dimensions:
  - o Make sure the secondary dimension is not inflated

- Clarify the criteria applied across each pillar of sustainability.
  - If possible, facilitate access to information concerning the performance of the product along each pillar rather than cover every aspect under a single logo.
    - Consider showcasing all dimensions in communication materials.
  - Beyond informing consumers on the performance of a specific product, schemes could do more to educate consumers on why this performance matters for sustainability, and how they can reduce their impact when buying certified products.

Display

- A logo should support understanding what the scheme is about. This might be less relevant to well-established and well-known schemes, but for new, and specialised ones, it is important.
- Displaying the name of the scheme with no acronyms improves transparency.
- In cases where schemes cover specific, not very well-known or understood issues, the more detailed the label information, including logo, statement and use of icons, the better to immediately inform consumers at the point of sale. This is especially important if the scheme is recent and has not awarded many certificates yet.
- Schemes that do not assess sustainability should avoid nature imagery, including those assessing biobased content, unless they clearly indicate the scope of the scheme on the product itself. Indeed, consumers are very likely to associate environmental imagery to environmental sustainability.
- Graded labels should use icons relevant to their grading scale (content should be a number or percentage, quality can be stars or gold/silver/bronze), and should be clear about the scale's definition.
- There should be a link or QR code directly next to the logo, and ideally it should direct to a page that clearly lists what the scheme is about, or to an explanation of why this specific product was awarded with a certificate, rather than the homepage of the website, if this homepage is not immediately informative.

4.1.2 Policymakers

- Adopt and implement without delay the new provisions on sustainability schemes in the Empowering Consumers Directive. The ban on sustainability labels that are not matched with a certification scheme will ensure that sustainability certification schemes get the recognition they deserve.

- o Adopt and implement without delay the Green Claims Directive. Especially, the implementing act covering environmental labelling schemes requirements should ensure that basic criteria for good consumer communication are followed by all environmental schemes on the market.

- o Consider broadening the Green Claims Directive's requirements to all sustainability schemes where appropriate, to ensure legal certainty to these schemes that address both social and environmental aspects, and to ensure that consumers are well informed on both social and environmental sustainability dimensions.

- o In the biobased sector, encourage and take part in discussions on the (lack of) added value on communicating directly to consumers on biobased content or biodegradability. This reflection should especially contribute to the criteria of added value for new labelling schemes included in the Green Claims Directive.

4.1.3 Wider ecosystem in the biobased sector

- o Encourage a reflection among labelling schemes and companies on the best way to provide certified information on biobased products to consumers.

- o There is currently no standardised way to talk about impact in the biobased value chain. The sector should work on establishing common guidelines to address this gap.

- o The biobased sector should reflect on the possibility for highly specialised schemes to feed into more established B2C LCS, rather than directly communicating on products with consumers, in a context where consumers are faced with a growing number of labels and markings in shops and online marketplaces.

- o Many specialised biobased schemes originated from a B2B context. Adopting a B2C type of communication could be a way to reaching out to new procurers and especially SMEs that might not have the technical background or resources to make use of more B2B type of information. Mixed schemes, which cover both B2B and B2C situations can also improve their transparency by adopting best practices from the consumer sector.

- o When deciding to communicate with consumers, LCS should follow guidelines such as those proposed by UNEP (UNEP, 2017), and learn from best practices showcased by more established LCS. They should especially improve communication materials on websites.

- o Labelling schemes should properly address the risk of consumers associating biobased content and biodegradability labels with sustainability when the scheme does not properly assess sustainability aspects or communicate on these parameters. Provide clear information accessible to the general public on the goals of certifying biobased content or biodegradability. If the added value for consumers cannot be demonstrated in terms of enabling them to choose more sustainable products and change behaviours, reconsider proposing consumer-facing labels.

    o   Companies deciding to communicate on biobased content should make use of all supporting guidelines provided by the scheme that certified them when available. They should also invest in additional efforts to inform consumers.

4.2   Decision trees

Decisions trees are graphic representations that aim to facilitate decision-making by providing clear paths based on the outcome pursued (e.g.: If you want to reach A, then do B). In the context of this report, a number of observations were context specific. The idea is therefore to help identify a context, and based on this context, to take the decision that seems the most appropriate based on the learnings of the desk research. The decision trees cover:

    o   What kind of LCSs that are the best choice for a company willing to provide sustainability information to consumers at the moment

    o   How to design a logo for a labelling scheme, based on the type of information provided

4.2.1   As a company producing biobased products

Figure 15 reflects the learning of the literature review: when communicating sustainability to consumers, it is less misleading to communicate environmental impacts that are representative from a lifecycle perspective. In this case, an ecolabel is the best option. Ecolabels also usually include some social criteria, but it could be beneficial to seek certification from a social oriented label to properly cover social aspects. In this case, or in the case of seeking certification over a limited set of criteria, companies should aim for the highest ambition, and look for schemes that will support them and truly enable them to stand out. The right side reflects one of our core recommendations: for biobased products, there is a tendency to associate biobased content with sustainability. However, the most specialized schemes only assess content and not sustainability. While a company might seek certification, it is not recommended to display the logo on the product itself, but rather as additional information on a website, to avoid misleading consumers by accident.
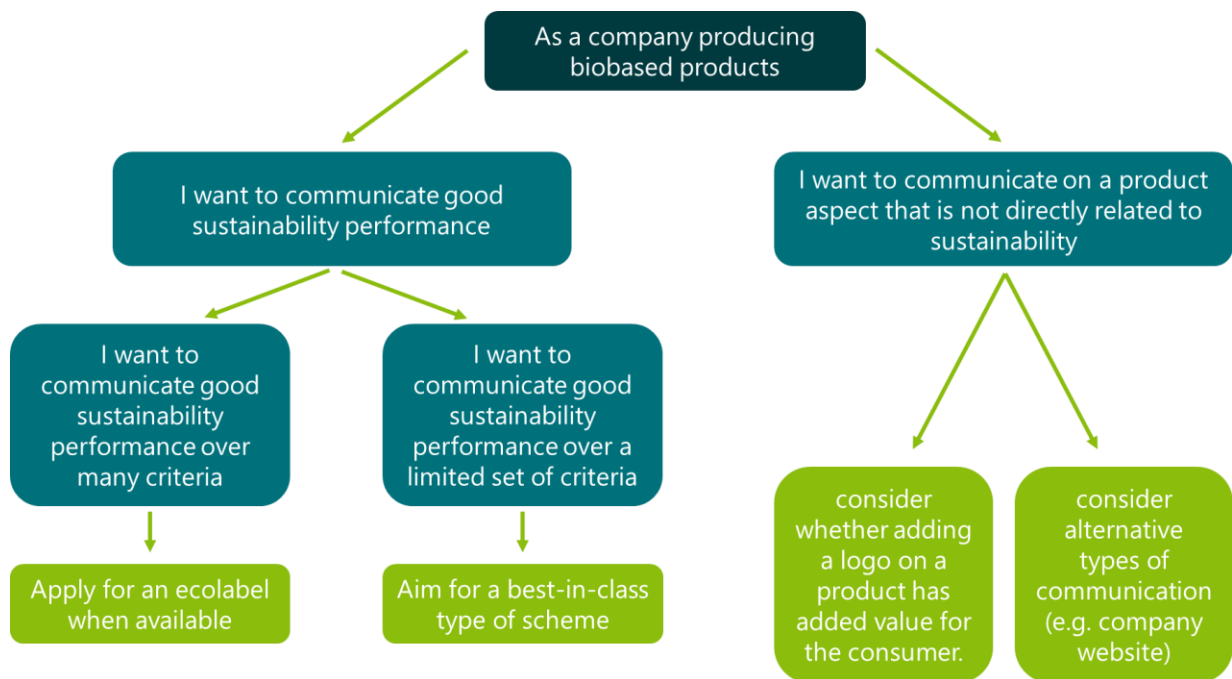
Figure 15 Decision tree 1: for companies

4.2.2 When designing a labelling scheme logo

Figure 16 reflects certification schemes struggles in ensuring that consumers understand the scope of the certification: what part of the product is covered (if not all), what sustainability aspects have been assessed? How to communicate complex issues? While we encourage certification schemes to look for examples, as different scopes lead to different solutions, we identified a few rules that are reproduced in this decision tree.
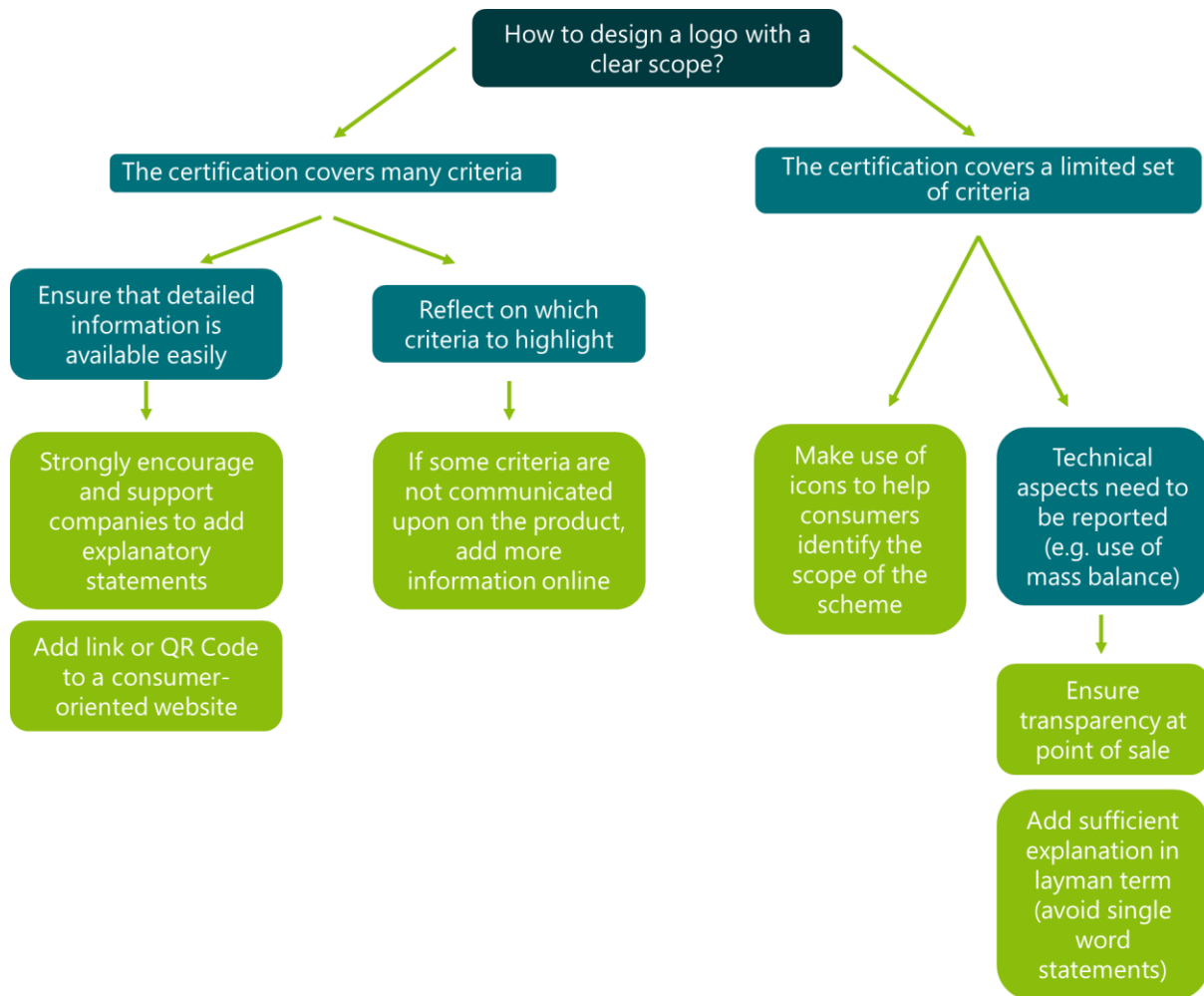
Figure 16 Decision tree 2: for schemes (logo)

4.2.3   When reporting different levels of ambition

Figure 17 addresses the issue of labelling schemes that offer different levels of ambition in their certification, and how to display this on a product. The case studies showed that in many instances, this is not well communicated to the consumer. Regarding schemes that offer a single level through a pass or fail system, we recommend that they ensure that the pass mark is high enough so that only the best performers in the market can be awarded the label. Typically, ecolabels aim for a pass mark that would capture only the top 10 to 20% of companies on a given market. This ensures that consumers are effectively guided towards the best possible options. Awarding sustainability certification to products that are barely above average has little added value, as it does not help consumers pick top performers, or guide the market towards improvement.

Figure 17 Decision tree 3: for schemes (levels)

5 Conclusion

The expert team conducted a literature review and 25 case studies of different labelling and certification schemes in selected biobased consumer product sectors, to identify good and best practices to ensure that that voluntary labels and certification schemes properly inform consumers about the sustainability of certified biobased products.

The research resulted in recommendations for scheme owners, policy-makers and the wider biobased sector ecosystem, to improve how information is communicated via labels to consumers, but also to engage a discussion on what needs to be communicated to trigger behavioural change towards more sustainable consumption.

Three decision trees were also designed to:

- o   Help companies decide what kind of certification they should seek.
- o   Help scheme owners design labels with clear scope.
- o   Help scheme owners report clearly on different level of ambition.

This report will feed into the next tasks of the project, notably research on consumer behaviour, and designs of label guidelines.

6   List of abbreviations

Abbreviation	Description
ADEME	French Agency for Ecological Transition
B2B	Business-to-Business
B2C	Business-to-Consumers
BBP	Bio-based products
ECOS	Environmental Coalition on Standards
EU	European Union
GOTs	Global organic textile standard
ISCC	International Sustainability and Carbon Certification
ISEAL	International Social and Environmental Accreditation and Labelling Alliance
ISO	International Organization for Standardisation
LCS	Label and Certification Schemes
QR code	Quick-response code
RSB	Roundtable on Sustainable Biomaterials Association
TUV	Technischer Überwachungsverein
UEBT	Union for Ethical Bio Trade
UNEP	United Nations Environment Programme
UU	University of Utrecht
VTT	VTT Technical Research Centre of Finland

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8   Annex A – Ranking system

Theme	Sub-theme	Criteria	Assessment	Source
Accessibility	Website	Certification scheme website has a dedicated section for consumers	Best	own
		Certification scheme website does not have a dedicated section for consumers but it is explained in plain language and relatively easy to understand by consumers	Good	own
		Certification scheme website does not have a dedicated section for consumers		own
	Statements	A statement is included next to the logo on product	Best	own
		No statement is included on the product		own
	Place of claim	Claim is presented in a manner that clearly indicates that the environmental claim and explanatory statement should be read together if there is one (the explanatory statement shall be of reasonable size and in reasonable proximity to the environmental claim it accompanies)	Best	ISO 14021
		There are no guidelines regarding where to place the statement to ensure that it is close to the claim, or visible		ISO 14021
Clarity	Clear scope	Limits of claim clearly stated: the claim specifies if it relates to the whole product, part of a product or certain aspects of it.	Best	UNEP & European Commission
		Guidelines are not clear on how the logo/mark should be included in cases where there are different components with different biobased content (e.g. packaging and product included).		own
		The claim is only on the packaging of the product, leading to the idea that the product itself is better for the environment.	Problematic	France
	Precision	The label on packaging makes a claim that is clear and unambiguous in the environmental aspect represented, unlikely to be misinterpreted or misunderstood. This information is directly available on the product	Best	Combined

		The label itself is clear and unambiguous on the environmental aspect represented, unlikely to be misinterpreted or misunderstood, but the consumer can only know this when looking for further information (not on packaging, but e.g. on a website)		Combined
		Claim is general, vague or non-specific, implying that the product is beneficial or benign for sustainability overall. (Read carefully: Having a reduced impact may be claimed)	Problematic	Combined
	Visuals: use of pictures	The use of (info-) graphics, pictograms, or other forms of visualising information is used to overcome potential clarity or language barriers	Best	UNEP
		The use of (info-) graphics, pictograms, or other forms of visualising are not used to support clarity or understanding by consumers. They are purely decorative		Own
	Gradation	The product is awarded a label by filling the scheme's criteria (no gradation), which are the same for all products awarded by the scheme	Good	Conseil Scientifique FR 2021
		The product is awarded a specific class in the label (gold/bronze/silver etc.) (comment on whether these classes are explained directly on the product)		Own
	Information	The display provides either descriptive or interpretative information on the product		Conseil Scientifique FR 2021
		The display provides both descriptive and interpretative information on the product	Best	Conseil Scientifique FR 2021
Relevance	Comprehensiveness	The claim covers multiple issues, allowing to assess sustainability overall	Good	UNEP
		The claims cover a single issue (or a very limited set of issues)		UNEP
Transparency	Scheme transparency	The scheme's criteria and objectives are publicly and easily accessible. They are easy to understand and sufficiently detailed.	Best	UNEP
		The scheme's criteria and objectives are publicly and easily accessible, but they are vague or very technical in nature		UNEP
		The scheme's criteria and objectives are not publicly or easily accessible.	Problematic	UNEP
	Biobased content	Claims on biobased content indicate what is the exact biobased source or raw material used	Good	France

		Claims on biobased content do not indicate what is the exact biobased source or raw material used		France
Reliability	Supporting information	Claims are substantiated with robust and consistent data and supporting documents. Assumptions are disclosed.	Best	Combined
		There is robust and consistent data supporting documents but is not accessible to consumers		own
		There is no data available to the consumers that support the claim	Problematic	own
	Third party assessment	There is a visible trustmark certifying that the label was awarded by a third party	Good	Elsen et al. (2019) Consumer testing of alternatives for communicating the Environmental Footprint profile of products
		There is no visible trustmark certifying that the label was awarded by a third party		Elsen et al. (2019) Consumer testing of alternatives for communicating the Environmental Footprint profile of products
Sustainable Development	Three dimensions of sustainability	Environmental, social, and economic dimension considered	Best	UNEP
		Only one sustainability dimension considered		own
		No sustainability dimension considered	Problematic	own
	Educational purpose	There is no clear educational purpose in the claim		own
		Besides information on the product, the claim aims at educating consumers on sustainable behaviour	Best	own
Display		No criteria is included beyond visual configuration, but you can refer to the original display criteria to draft a comment		

9   Annex B – Case study template

Scheme name	
URL	
3-CO reviewer	

Accessibility		
Website		copy assessment
Statements		copy assessment
Place of claim		copy assessment
Comment		

Clarity		
Clear scope		copy assessment
Precision		copy assessment
Visuals		copy assessment
Gradation		copy assessment
Information		copy assessment
Comment		

Relevance		
Comprehensiveness		copy assessment
Comment		

Transparency		
Scheme transparency		copy assessment
Biobased content		copy assessment
Comment		

Reliability		
Supporting information		copy assessment
Third party assessment		copy assessment
Comment		

Sustainable Development		
Three dimensions		copy assessment
Educational purpose		copy assessment
Comment		

Display analysis		
Comment on the display		Add your own assessment based on comment

Picture		add caption

New practices identified and worth mentioning		
Theme or sub theme	Description	Best/Good/To be avoided/Bad
Theme or sub theme	Description	Best/Good/To be avoided/Bad
Theme or sub theme	Description	Best/Good/To be avoided/Bad

Final comment

Sources

10 Annex C – Benchmark overview

Theme	Sub-theme	Bio-based Content certification scheme	DIN-Geprüft Biobased / DIN Certco	The RSB Global Advanced Products Certification	TÜV Austria OK biobased	TÜV Austria OK biodegradable	Better Cotton Initiative	ECOLOGO	Forest Stewardship Council	Good Environmental Choice
Accessibility	Website			Good	Good	Good	Good		Best	Good
	Statements	Best		Best				Best	Best	
	Place of claim	Best	Best		Best	Best			Best	
Clarity	Clear scope	Best		Best	Best	Best	Problematic			
	Precision	Best					Problematic	Problematic		
	Visuals: use of pictures	Best							Best	
	Gradation	Good	Good	Good			Good	Good	Good	Good
	Information									
Relevance	Comprehensiveness			Good			Good	Good	Good	
Transparency	Scheme transparency			Best	Best	Best	Best		Best	
	Biobased content						Good			
Reliability	Supporting information									
	Third party assessment		Good	Good	Good	Good			Good	
Sustainable Development	Three dimensions of sustainability	Problematic	Problematic	Best	Problematic	Problematic	Best	Best	Best	
	Educational purpose									
Display	Appreciation from reviewer		Problematic	Problematic				Best	Best	

Theme	Sub-theme	GOTs - global organic textile standard	International Organic and Natural Cosmetics	ISCC Plus (International Sustainability and Carbon Certification)	Natrue-Label	Naturland	Oeko-tex Made in Green	Programme for the Endorsement of Forestry Certification	the vegan trademark	TÜV Austria OK Compost Home
Accessibility	Website	Good			Good	Best	Good	Best	Best	
	Statements	Best	Best	Best	Best			Best		Best
	Place of claim	Best	Best	Best	Best		Best	Best		Best
Clarity	Clear scope			Problematic		Best	Problematic	Best	Best	Best
	Precision			Best				Best	Best	Best
	Visuals: use of pictures	Best		Best		Best		Best	Best	Best
	Gradation	Good	Good	Good	Good	Good	Good	Good	Good	Good
	Information						Best			
Relevance	Comprehensiveness	Good	Good			Good	Good			
Transparency	Scheme transparency	Best		Best		Best		Best	Problematic	Problematic
	Biobased content			Good		Good				
Reliability	Supporting information								Problematic	
	Third party assessment	Good	Good			Good				Good
Sustainable Development	Three dimensions of sustainability	Best		Best		Best	Best	Best		
	Educational purpose					Best			Best	
Display	Appreciation from reviewer	Best		Best	Best	Best		Best	Best	Best

Theme	Sub-theme	UEBT Union for Ethical Bio Trade	Blue Angel	EU Ecolabel	Nordic Swan Ecolabel	TÜV Rheinland Green Product Mark Textile	oekocontrol	Cradle to Cradle Certified (CM) Products	Nutriscore
Accessibility	Website	Good	Best	Best	Best		Best		
	Statements	Best	Best	Best	Best				
	Place of claim	Best	Best	Best	Best			Best	
Clarity	Clear scope	Best		Best	Best	not active	Problematic	Best	Best
	Precision	Best	Best	Best	Best		Problematic		
	Visuals: use of pictures	Best		Best	Best		Best		Best
	Gradation	Good	Good	Good	Good		Good		
	Information	Best		Best			Best		
Relevance	Comprehensiveness	Good	Good	Good	Good		Good	Good	
Transparency	Scheme transparency	Best		Best	Best		Problematic	Best	
	Biobased content	Good							
Reliability	Supporting information	Best					Problematic		Problematic
	Third party assessment			Good	Good				
Sustainable Development	Three dimensions of sustainability	Best	Best		Best			Best	
	Educational purpose		Best	Best					
Display	Appreciation from reviewer	Best		Best	Best				