Chapter 6
Communicating Product Life Cycle Performance through Labels and Declarations

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Abstract This chapter gives an overview of the development of different eco-labelling schemes over a timeline of about 50 years. The main focus is, however, the standards for product declarations developed under the ISO 14000-family. Hereunder standards for product categories rules (PCRs), environmental product declarations (EPDs) as well as standards for different eco-footprints as, for example, carbon footprints of products (CFP) and water footprints of products (WFPs). The chapter also gives a brief description on how to develop and implement product labels for various purposes.

6.1 Introduction

Companies are increasingly held accountable for their performance on sustainability. This is an established trend that also extends to the products and services that companies provide. Expectations to report on environmental performance come from many stakeholders, such as professional buyers, individual consumers, consumer advocacy groups, environmental organisations, and the government. Companies can try to meet these expectations through product level reporting, where product level refers to both products and services. This is especially relevant when communicating on issues that are not possible to discern from the product itself. One cannot see the carbon footprint of a product and one cannot tell if the wood in a product is sourced from sustainably harvested wood or not.

Using labels and declarations to communicate product environmental performance has a long history, as shown in Fig. 6.1. Two early examples are the Demeter label and the Blue Angel, both from Germany. The Demeter label was founded in 1928, allowing customer to choose products from biodynamic agriculture (Demeter 2022). The Blue Angel label was founded in 1978 and is considered as the first

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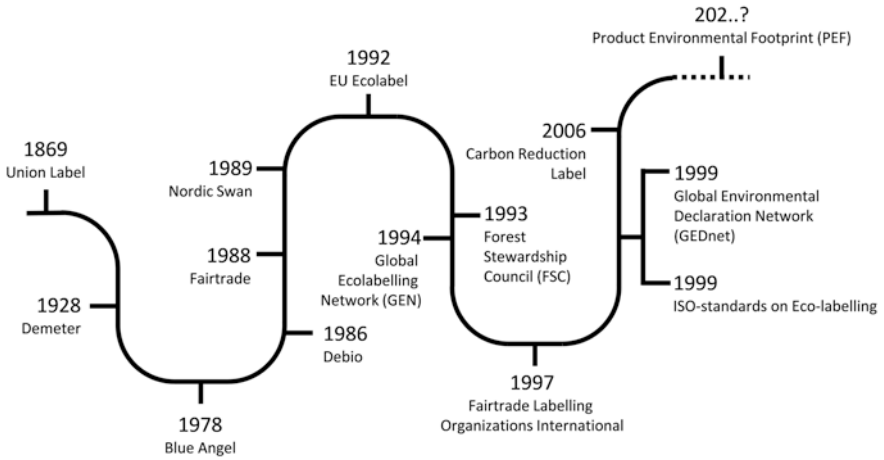

Fig. 6.1 Timeline of environmental communication for products

proper ecolabel (UNOPS 2009), with multiple criteria and a life cycle perspective. In the decades after the introduction of the Blue Angel, there was global growth in environmental labels and declarations. The EU has worked on developing and testing a methodology called Product Environmental Footprint (PEF) since 2011. As of 2022, in its transition phase, it is expected to have significant impact if and when it is introduced into EU law (EC 2022).

With the increase in labels and declarations, there was a need for more cooperation between the organisations. There was also a need for stakeholders to be able to understand the quality of different programmes – which labels and declarations can be trusted? In short, there was a need for standardisation. Through the International Organisation for Standardisation (ISO), the development of a series of ISO standards was started in the late 90s. These are known as the ISO 14020 series of standards and they provide principles for communicating environmental performance through labels and declarations (ISO 14020: 2000, 14025: 2006, 14021: 2016, 14024: 2018a).

6.2 Environmental Labels and Declarations

The ISO 10420 series of standards provides three different approaches for communicating on the environmental performance of products and services (ISO 2000, 2006, 2016, 2018a). Each approach has its own standard, and they are labelled type I, II and III by ISO. They must all follow the nine general principles outlined in ISO 14020, where the key message is that environmental claims must be based on science, be verifiable, be accurate and relevant, and not be misleading. Note that it is not uncommon for an organisation to use more than one of these approaches at the same time, for example to meet requirements in different markets or by different stakeholder groups. The three approaches (label type and ISO standard) are:

- Self-declaration (type II, ISO 14021)
- Verifying content (type III, ISO 14025)
- Certifying performance (type I, ISO 14024)

Table 6.1 provides an overview of key differences between the three approaches. *Main audience* indicates if the primary audience is professional or consumers, termed business-to-business (B2B) versus business-to-consumer (B2C). Public procurement will usually be considered B2B, but smaller procurements may also be considered as B2C. *Programme* indicates if there is a requirement for an organisation (programme operator) responsible for running the ecolabel system.

The ISO standards provide three archetypes for ecolabels: Type I, Type II, Type III. The archetypes provide a framework for understanding product level communication. However, we often find labels and declarations that are a mix of these archetypes. These are referred to as hybrid labels. One hybrid label has become so common that it has its own ISO standard, this is ISO 14067 for reporting on the

Table 6.1 The ISO 14020 family and beyond: environmental claims for products and services

				Hybrid approaches		
	Type I	Type II	Type III	Footprint labels (ISO 14026)	Carbon footprint (ISO 14067)	Other hybrid approaches[1]
Standard	ISO 14024	ISO 14021	ISO 14025	ISO 14026	ISO 14067	*Check*
Main audience	B2B and B2C	Depends on claim	Mainly B2B, B2C possible	B2B and B2C	For communication, ISO 14026 applies	*Check*
Programme operator	Yes	No	Yes	(Yes)[2]		*Check*
Life cycle perspective	Yes	(Yes)[3]	Yes, LCA	Yes		*Check*
Environmental performance criteria	Multiple criteria	Self-imposed criteria, often single issue	No performance criteria	No (but rating scales may be used)[4]		*Check*
Verification type	Yes, 3rd party	No, based on disclosure	Independent verification. 3rd party for B2C, programme decides for B2B	Independent verification. Programme decides for B2B and B2C		*Check*

[1] This column provides a checklist for evaluating environmental labels and declarations – if you encounter an unfamiliar label, you can use this as a guide to evaluate it

[2] There is a requirement for programme operator, but a company can be its own programme operator

[3] A life cycle perspective is encouraged, but not required

[4] In general, no performance criteria are used. However, it is possible to use rated scales (e.g. A–E, 1–6, etc.) based on defined performance levels

carbon footprint of products (CFP) (ISO 2018b). The growth of demand for single issue declarations, such as carbon through CFP and for water through water footprint of products (WFP) has led to the development of ISO 14026 for communication of environmental footprints.

6.2.1 Type I: Environmental Labels

Environmental labels of type I are probably the labels that are best known by people in general, as they can be found on products such as groceries, clothing, and furniture. Two examples of such labels are the Blue Angel from Germany and the Nordic Swan, founded in the 70s and 80s. Historically, the main audience of environmental labels were in the business to consumer market. However, over the last few decades they have been commonly used for all types of procurement (B2C, B2C, public procurement).

The purpose of these labels is to certify the environmental performance of the product against a set of defined criteria. These criteria are developed from a life cycle perspective and often also include quality requirements. The intention of labelling is then to make it easier to identify good quality products with a low environmental impact.

The basic principles for a type I label are to provide information that is accurate and verifiable. Furthermore, it must focus on relevant environmental aspects and not be misleading. The criteria are developed through stakeholder consultation and based on scientific methodology. There is also a requirement that the label must be administered by an independent organisation (programme operator): the procedure, methods and criteria must be transparent.

6.2.2 Type II: Environmental Claims by Manufacturers

Environmental claims of type II are self-declared, for example, made by manufacturers and retailers, and can be found, for example, in advertisements, on products, in technical brochures and on websites. The ISO 14021 standard was developed due to a growth of claims related to environmental performance and a need to ensure the reliability of these. These are often used for claims related to one or a few environmental aspects, such as recycled content, recyclability, biodegradability, energy consumption, and so forth.

For self-declarations, transparency is a key element. The company may evaluate the environmental performance of a product and communicate this, but they must also provide information to anyone that wishes to verify the claim. For verified content, there are no environmental performance criteria that the product must fulfil, and the customers must themselves evaluate and compare between products.

6.2.3 *Type III: Environmental Declarations*

Environmental Product Declarations (EPD) of type III quantify the environmental performance per functional unit for a product system. The *functional unit* is a key concept and is a quantification of the performance of the product system. For example, a chair's function is to *provide seating*. This may be quantified with a functional unit as *to provide seating for 15 years*. The EPD is based on a life cycle assessment (LCA), which shall follow requirements specified in Product Category Rules (PCR). These requirements are based on the LCA methodology and are developed through stakeholder consultations. There is also a requirement that the EPD system shall be administered by an independent organisation (programme operator) and that the procedures, methods and requirements are transparent.

The purpose of an EPD is to provide verified information but note that there are no environmental performance requirements for the product itself – this must be evaluated by the user. EPDs are typically used in business-to-business (B2B) communication and public procurement, as the volume of information make them less suited for business-to-consumer (B2C) communication. Evaluation and comparison based on EPDs should be based on the functional unit in a life cycle perspective.

6.3 Future Trends: Carbon Footprint of Products (CFP) and Other Hybrid Labels

This is a continually developing field and not all labels and declarations fit neatly into type I, II and III categories from ISO standards. Instead, a label may have elements from more than one type, and we can call these hybrid labels. The carbon footprint is perhaps the best known of these hybrid labels. It has elements of all three types: it is a label on the product, may have performance requirements, it is for a single issue, and it provides quantified information. The EU's work on developing the Product Environmental Footprint (PEF) may result in a hybrid approach – potentially combining a quantified declaration with performance-based labelling (EC 2022).

A common trait for all labels is that they are developed to meet a perceived market need. Some may have a life cycle perspective and cover all relevant environmental aspects, but often they are for single environmental issues. For these it should be noted that there is a danger of problem shifting, reducing the environmental impact in one area at the expense of increased impact elsewhere.

6.4 Application

The large volume of labels and declarations in use makes it difficult for companies to choose a label/declaration that best serves their needs and requirements. Finding the right approach is a balancing act where stakeholder requirements, company

strategy, and resources must be considered. A key challenge is that there is no single approach that will satisfy all stakeholders. Demands may vary across markets, industries, and customer types, and continue to develop over time. The choice of approach should be developed based on the organisation's environmental strategy and environmental ambition level.

6.4.1 Choosing an Approach

Organisations have a range of strategic options from which to choose. Roome (1992) defines a range of *ambition levels*, from leading edge to non-compliance. This range can also be linked to environmental ambitions for the product system (Level 2 in the CapSEM Model):

- Leading edge: the performance of the products is among the best and the organisation contributes to advancing the industry.
- Commercial/ environmental excellence: the performance is among the best; the environment is used to gain competitive advantage.
- Compliance plus: performance is above minimum requirements but not good enough to obtain a type I ecolabel.
- Compliance: performance meets minimum legal requirements, but there are no defined targets to improve beyond this.
- Non-compliance: the organisation knowingly breaks laws and regulations to gain competitive advantage, e.g. through greenwashing.

Ecolabels of type I can be used in the two highest *ambition levels* to help ensure that the product is among the best. Products with these labels are usually among the top 10–20% in the product category (Minkov et al. 2020). A challenge here is that outperforming the criteria does not give immediate advantage. Declarations of type III can be used to ensure that legal requirements are be met. This can be used in all but the non-compliance ambition level. It can be used as documentation of compliance and as documentation of being on the leading edge. It is also possible to use a combined approach, for example using type I labelling to show general excellence on a range of products, with additional type III declarations to show outstanding performance on a selected issue (e.g., carbon footprint) or selected products (e.g., a line of outstanding products). It is also possible to combine environmental and social aspects when reporting, broadening the scope of the declaration (Skaar and Fet 2012).

For the highest ambition levels, we need to determine what good environmental performance constitutes. Type I ecolabels and type III environmental declarations can provide insight into which environmental aspects are relevant from a life cycle perspective: labels add performance levels for specific aspects.

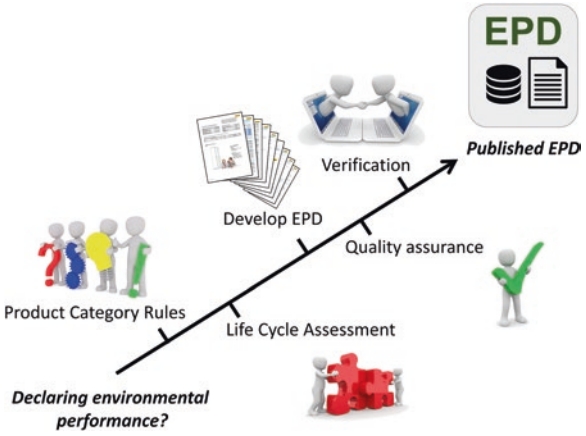

Fig. 6.2 Steps: from deciding to use EPDs to a published declaration

6.5 Creating an EPD

Figure 6.2 provides an overview of the key steps required to develop and publish an EPD for a product or a service. The first step is to decide that the EPD is the preferred type of environmental label or declaration, as discussed in the previous chapter. The next step is to either identify or develop a set of Product Category Rules (PCR) for this type of product. The PCR is typically developed by EPD programme operators and detail the rules and requirements for the Life Cycle Assessment supporting the EPD. The purpose of the PCR is to ensure that EPDs are harmonised and comparable. The next step is performing the LCA. A company can choose to either use in-house expertise or engage a consultant. When the EPD has been developed and gone through an internal quality assurance check, it is ready for independent verification. Verification must be carried out by a verifier approved by the EPD programme; it is also often a requirement to have third party verification. Having gone through the verification, the EPD is ready for publication. It is the EPD programme operator who publishes EPDs, and these are typically published as a document or a dataset, or both. For companies with a large product portfolio, it is becoming increasingly common to streamline this process through EPD tools, which reduce the workload per EPD published (Fet et al. 2009).

6.6 Conclusion

This chapter has provided an overview of environmental labels and declarations. The main Level in the CapSEM Model for labels and declarations is Level 2, the product system. However, communicating product performance is not enough on its own to contribute to sustainable development. The labels and declarations are end results. To improve the environmental performance of products and services it must be integrated into a system of continual improvement at multiple levels:

- Level 1. Processes: Labels and declarations can contribute to identifying the most significant processes in an environmental perspective, both within the organisation and in the value chain.
- Level 2. Product system: Labels and declarations can contribute to product design and supply chain management.
- Level 3. Organisation: Labels and declarations can contribute to obtaining and maintaining a license to operate, and to gain competitive advantage
- Level 4. Larger systems, such as the society: Labels and declarations can contribute to changes in consumers' behaviour by informing selections on climate footprint of their consumptions.

Elements that may contribute to competitive advantage may be direct (e.g., customers' willingness to pay a premium, gaining market access, winning tenders) or indirect (e.g., positive effect on reputation, increased capacity and knowledge base, better stakeholder communication). However, there are also risks associated with environmental labels and declarations, for example, that costs are higher than gains, the chosen label lacks customer trust, or the risk of focusing on the wrong environmental aspects.

Environmental labels and declarations are an effective tool for communicating environmental performance for products and services, but their potential goes beyond this, such as a mechanism for communicating corporate responsibility regarding products (Skaar and Fet 2012). Integrating the use of labels or declarations in an organisation's environmental management system can ensure continual environmental improvement, contribute to reduce risks, and help to identify win-win opportunities.

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