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Exploring synergies between environmental labelling and standards, and trade in environmental goods

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Abstract

Over the last decades, policies to promote environmental goods and sustainable supply chains have proliferated. In the environment policy domain, this includes environmental labelling and information schemes (ELIS) and environmental sustainability standards and regulations (ESSR). In the trade policy domain, the focus has been on the liberalisation of trade in environmental goods.

This report focuses on how environmental policy and trade policy approaches to incentivising the uptake of environmental goods and sustainable supply chains compare, intersect, and can be mutually supportive. It does so, first, by comparing environmental policy and trade policy approaches to identifying environmental goods. Second, it identifies key differences between these two approaches, and third, it sets out recommendations to enhance synergies between the two. While ELIS and ESSR may provide opportunities to complement trade policies in promoting environmental goods, further analysis is required for their potential application.

JEL classification: F13, F18, F64, Q56

Keywords: Environmental goods and services, environmental regulations, environmental standards, eco-labelling, green public procurement, trade agreements, mutual recognition, interoperability.

Résumé

Au cours des dernières décennies, les politiques visant à promouvoir les biens environnementaux et les chaînes d'approvisionnement durables se sont multipliées. Dans le domaine de la politique environnementale, cela inclut les systèmes d'étiquetage et d'information environnementaux (SIE) et les normes et réglementations en matière de durabilité environnementale (NDE). Dans le domaine de la politique commerciale, l'accent a été mis sur la libéralisation du commerce des biens et services environnementaux.

Ce rapport examine la manière dont les approches de la politique environnementale et de la politique commerciale visant à encourager l'adoption de biens et services environnementaux et de chaînes d'approvisionnement durables se comparent, se recoupent et peuvent se renforcer mutuellement. Il le fait, premièrement, en comparant les approches de la politique environnementale et de la politique commerciale pour identifier les biens environnementaux. Deuxièmement, il identifie les principales différences entre ces deux approches et, troisièmement, il formule des recommandations pour renforcer les synergies entre elles. Si les SIE et les NDE peuvent offrir des opportunités de complémentarité avec les politiques commerciales pour promouvoir les biens et services environnementaux, une analyse plus approfondie est nécessaire pour évaluer leur application potentielle.

Classification JEL: F13, F18, F64, Q56

Mots clés: Biens et services environnementaux, réglementations environnementales, normes environnementales, éco-étiquetage, marchés publics verts, accords commerciaux, reconnaissance mutuelle, interopérabilité.

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Executive summary

Since the 1990s, policies to promote environmental goods and sustainable supply chains have proliferated. In the environmental policy domain, policy makers that seek to promote environmental goods and environmentally sustainable supply chains have considered tools such as environmental labelling and information schemes (ELIS) and environmental sustainability standards and regulations (ESSR). ELIS and ESSR have multiplied in recent decades, and are often based on certifications or life-cycle assessments (LCAs). In the trade policy domain, one focus has been on liberalising trade in environmental goods through negotiating specific lists of goods determined by the trade partners to be environmentally preferred, and subsequently reducing tariff levels to promote trade in these products. Such approaches have so far been successful only in a handful of regional or plurilateral trade agreements.

This report focuses on how environmental policy and trade policy approaches that wish to incentivise the uptake of environmental goods and sustainable supply chains compare, intersect, and can be mutually supportive. It does so, first, by comparing environmental policy and trade policy approaches to identifying environmental goods. Second, it identifies key differences between these two approaches, and third, it outlines recommendations to enhance synergies between them.

The report finds that there are important differences between environmental policies and trade policy approaches in terms of scope, coverage, standard-setting, monitoring, and review. Typically, ELIS and ESSR are applied to a broader set of goods than environmental goods listed in trade agreements, including agriculture and food products, buildings, electronic goods, energy, forest products, furniture, household appliances, textiles, and transportation. By contrast, the majority of environmental goods set out in trade agreements are generally traded manufactured goods (e.g. renewable energy technologies). Another difference is that goods included in environmental goods lists in trade agreements are often intermediate goods, whereas ELIS and ESSR often apply to final consumer goods. A further difference is the approach adopted to consider a product an “environmental” good. While ELIS and ESSR often focus on products deemed to be environmentally preferable (causing less environmental harm at some stage of their life cycle), trade agreements identify environmental goods predominantly based on their end-use (serving an environmental purpose in their final use, such as photovoltaic panels and wind turbines).

There are several reasons for the differing approaches employed by environmental policymakers for ELIS and ESSR, as well as by trade negotiators in promoting trade in environmental goods. First, ELIS and ESSR tend to be consumer-oriented information tools developed by various stakeholders, including governments, private sector, and civil society, whereas environmental goods lists in trade agreements are developed by trade negotiators, and focus mainly on industrial products in which countries may have a comparative advantage. Second, ELIS and ESSR are often based on certification and LCAs, and tend to have built-in review processes to reflect technological developments, which is often not the case for environmental goods lists in trade agreements. Third, in contrast to those developing ELIS and ESSR, trade negotiators are constrained by the Harmonized System (HS), in which 6-digit product descriptions are not always sufficiently specific to identify a good based on its environmental characteristics. Specifically, the HS focuses predominantly on the physical characteristics of products, rather than on the methods and techniques used to produce goods, because the latter are difficult to verify and control at the border. Methods and techniques used to produce goods that cannot be physically distinguished from the final product are known as "non-product related processes and production methods (npr-PPMs)". Differentiating products based on npr-PPMs, such as carbon or environmental footprint, creates potential legal and practical challenges for trade. As a result, environmental goods lists currently included in trade agreements have tended to focus on environmental considerations linked to physical product

characteristics, whereas ELIS and ESSR more frequently encompass environmental considerations that go beyond a product's physical characteristics.

This report identifies possible ways to enhance synergies between ELIS and ESSR on the one hand, and environmental goods lists in trade agreements on the other. First, it suggests possibilities for complementing the scope of environmental goods lists by considering additional approaches based on npr-PPMs. While such an approach may not be easy or practical for all traded goods and all trade agreements, it may be explored to reflect detailed product identification for certain commodities of common interest to the Parties of a given agreement. The report identifies how to address the legal and technical challenges associated with doing so, including exploring "ex-outs" in the HS (which allows for further differentiation of goods within subclasses), navigating legal ambiguity, and addressing the challenges related to differentiating products that are physically identical at the border.

Second, it explores the possible use of ELIS and ESSR to supplement environmental goods lists in trade agreements. Such an approach may not be feasible or applicable for all commodities and trade agreements. Nevertheless, there may be opportunities for trade agreements to benefit from the extensive experience in environmental policy domain of ELIS and ESSR, particularly in certifications and LCAs, auditing and verification processes, and standard update procedures. To note, integrating private and voluntary standards into trade listings is not entirely novel, with a precedent of this approach being adopted in the context of the World Trade Organization's plurilateral Information Technology Agreement, as well as by Switzerland, with regards to identifying whether palm oil has been produced sustainably for purposes of the EFTA-Indonesia Comprehensive Economic Partnership Agreement.

Nevertheless, using ELIS and ESSR to complement trade policies for environmental goods may not be straightforward and merits further analysis for their potential application, especially for goods whose environmental benefits depend on npr-PPMs. Policymakers may want to consider promoting trade in environmental goods, while recognising that it is unlikely to be a silver bullet to address all aspects of environmental sustainability. In this context, it is relevant to note the potential mutual supportiveness of trade and environmental policies and policy makers ability to enhance synergies between them, while minimising trade frictions, such as through encouraging the harmonisation of standards, mutual recognition of conformity assessment procedures, and regulatory co-operation.

1 Introduction

1.1 Background

The global uptake of environmental goods and environmentally sustainable supply chains can help policy makers address environmental challenges.[1] For example, energy storage technologies, heat pumps, energy-efficient appliances, and renewable energy technologies can help enable a transition to a carbon-neutral economy (IEA, 2022[1]). The diffusion of climate adaptation technologies such as climate-resilient seeds, water desalination technologies, and early warning systems against extreme weather events can also play a role in responding to the impacts of changing climate (IISD, 2021[2]). The adoption of recycling and waste management technologies, as well as the use of refurbished and remanufactured goods and secondary raw materials, can help close the loop for to promote circular economy approaches at the global level (Yamaguchi, 2021[3]). Furthermore, the diffusion of such environmental goods could also require the provision of environmental and environmentally related services, such as installation, maintenance, and repair (Bellmann and Bulatnikova, 2022[4]).

Environmental policies and trade policies can both promote environmental goods and environmentally sustainable supply chains in different ways. In the environment domain, these products can be promoted through environmental labelling and standards, and environmentally-related public procurement.[2] For example, environmental labelling programmes are often based on life-cycle assessment (LCA) and quantitative indicators of environmental performance to enable objective comparisons between products fulfilling the same function (Prag, Lyon and Russillo, 2016[5]).[3] In the trade policy domain, some efforts have been made to liberalise trade in environmental goods, predominantly by proposing and agreeing on a specific list and subsequently reducing tariff levels.[4] Such approaches have so far been successful only within a handful of regional and plurilateral trade agreements.

Environmental policies and trade policies that promote environmental goods and environmentally sustainable supply chains may share similar objectives, but can differ in terms of the products they target and how they distinguish environmental performance.[5] For example, given that the international system used to classify trade in goods (i.e. the Harmonized Commodity Description and Coding System, or

[1] There is currently no universal definition of environmental goods. Such issues are further explored in- Section 3.2.

[2] As the focus of this current report is on environmental policies that directly promote environmentally sustainable products and supply chains, other instruments such as subsidies, taxes and regulations that restrict polluting products or activities are not covered here.

[3] While environmental labelling and information schemes involve private sector initiatives, some are mandatory and tied to government regulations (Gruère, 2013[13]).

[4] While trade agreements with environmental goods lists have traditionally focused on reducing or eliminating tariffs, some recent agreements include provisions to address non-tariff barriers (see Section 3.2).

[5] Environmental policies can sometimes overlap with trade policies and cannot be completely separated. A policy can have both implications; for example, environmental labelling schemes administered by the environmental community may be classified as a non-tariff measure under the trade community.

Harmonized System (HS) in short) generally identifies goods based on their essential characteristics, it can be particularly challenging for trade policies to distinguish traded products on the basis on how the goods were produced, relative performance or disposal methods (UNEP, 2018[6]).[6] By contrast, domestic environmental policies, such as environmental labelling and standards, and environmentally-related public procurement often adopt life-cycle approaches (LCAs) to determine environmental characteristics.[7]

While these two policy approaches share similar objectives in promoting environmental sustainability, there have been limited insights so far on the extent to which these two policy efforts compare, intersect and can be mutually supportive. The detailed design of environmental policies to promote environmental goods and environmentally sustainable supply chains, such as setting the scope of environmental criteria or reflecting life-cycle assessment on environmental performance, may potentially inform policy makers' efforts to further liberalise trade in environmental goods. For example, while certification schemes of clean hydrogen produced from renewable electricity are increasingly being considered and developed by various bodies,[8] such schemes can potentially inform trading partners that may consider including clean hydrogen as part of their environmental goods lists.[9]

Trade policies that effectively support the diffusion of environmental goods can help achieve policy makers' domestic environmental policy goals, such as reaching renewable energy targets and accelerating the shift toward vehicle electrification. Furthermore, domestic environmental policies to promote environmental goods and environmentally sustainable supply chains should be consistent with international obligations, non-discriminatory, and as least trade restrictive as possible to achieve the stated objective. There may be scope to align these two policy areas further.

1.2 Objective and methodology

This report explores potential synergies between environmental policies and trade policies to promote environmental goods and environmentally sustainable supply chains. It first provides an overview of environmental policies and initiatives to promote environmental goods and environmentally sustainable supply chains, with a focus on environmental labelling and information schemes, environmental standards and environmentally-related public procurement. Second, it focuses on policy makers' options for promoting trade in environmental goods, with an emphasis on Regional Trade Agreements (RTAs). [10] Third, it presents a comparison between these two approaches, highlighting both the differences and

[6] The Harmonised Commodity Description and Coding System "Harmonized System" is an international nomenclature of trade flows of goods developed by the World Customs Organization (WCO). It covers over 5,600 commodity groups, each identified by a six-digit code, and is used by almost all of the world's economies.

[7] In the trade domain, the way a product is produced is commonly referred to as a processes and production method (PPM).

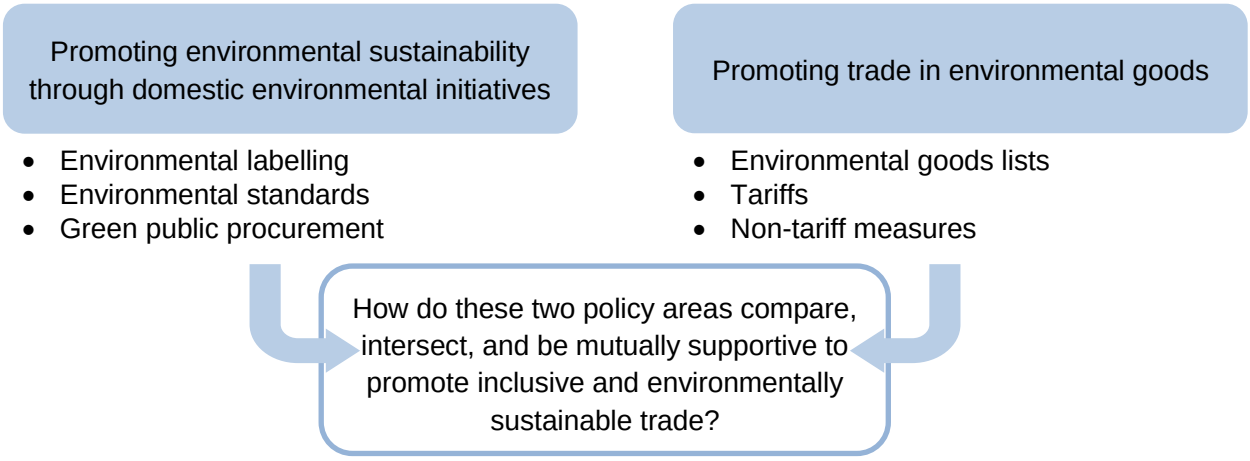
[8] For example, standards on clean hydrogen have been developed by the International Organization of Standardization (ISO) hydrogen technologies (ISO/TS 19870:2023) (ISO, 2023[115]), based on earlier work by the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE) (IPHE, 2023[116]). The development of certification schemes for clean hydrogen are also being considered, such as the Guarantee of Origin (GO) scheme (Australian Government, 2024[114]).

[9] For example, clean hydrogen is listed as a part of environmental goods in the Singapore – Australia Green Economy Agreement. See Annex B 1 Environmental Goods List (Australian Government, 2022[49]).

[10] This report focuses only on liberalising environmental goods through trade. It does not focus on other ways in which trade policy and trade agreements are seeking to strengthen the link between trade and the environment, such as through provisions that seek to enhance cooperation, or establish the right to regulate.

similarities. Fourth, it examines how these two policy areas can be mutually supportive in promoting environmentally sustainable trade. This is illustrated in Figure 1.

Figure 1. Schematic on the interface between trade and environment policies



Note: Environmental policies can overlap with trade policies and may not be easily separated from one another. For example, a policy can have both implications where an environmental labelling programme administered by the environment policy community may be classified as a non-tariff measure by the trade community. This report examines, *inter-alia*, how these two policy areas can be mutually supportive.
Source: Author.

The report draws on existing and ongoing work on environmental goods and sustainable supply chains within the OECD and beyond. For example, the OECD has been working on trade in environmental goods for over two decades, with the majority of this work undertaken by the Trade Committee. Important recent initiatives include the development of the OECD Combined List of Environmental Goods (CLEG) and the revealing evidence on the relationship between these exports and environmental policy stringency (Sauvage, 2014[7]), compilation of trade and environment indicators *inter-alia* on environmental goods (Garsous, 2019[8]), and establishing the evidence base on the diffusion of environmental technologies through trade with a focus on wind turbines (Garsous and Worack, 2021[9]).[11] The work on environmental goods has been continued with a focus on non-tariff measures and an updated version of the CLEG (Moïsé and Tresa, 2025[10]). The OECD Environment Policy Committee has complemented these efforts by extending work on regional trade agreements to examine for example, how non-tariff measures have been addressed in this area (Bellmann and van der Ven, 2020[11]; Bellmann and Bulatnikova, 2022[4]). This report builds on these workstreams, which identify important benefits and challenges in liberalising trade in environmental goods.

This report also builds on multiple strands of work on domestic environmental policies to promote environmental goods and environmentally sustainable supply chains. Several pillars of OECD work are exploited, including those on environmental labelling and information schemes (Prag, Lyon and Russillo, 2016[5]; Klintman, 2016[12]; Gruère, 2013[13]) and environmentally-related public procurement (OECD, 2015[14]). The work also builds on previous work on “environmental claims," examining how environmentally beneficial characteristics of goods are verified (OECD, 2011[15]).

[11] Earlier OECD work on environmental goods and services dates back to the OECD-Eurostat (1999[52]) publication on the environmental goods and services industry, which formed the basis for international discussions at the time. This work was followed by several conceptual and sectoral reports, mainly to inform discussions at the WTO Doha Round (OECD, 2006[98]; 2005[99]; 2001[102]; Steenblik and Geloso Grosso, 2011[100]; Steenblik and Kim, 2009[101]).

The analysis is based on a review and assessment of (i) studies related to trade in environmental goods;[12] (ii) data and studies related to environmental policies to promote environmentally sustainable products and supply chains,[13] and (iii) relevant work on key issues (e.g. environmental credibility, life-cycle assessment, processes and production methods).[14] In particular, the report is complementary to the parallel OECD (2025[10]) report on "Beyond the Tariff: Non-Tariff Measures Affecting Environmental Goods Trade".

The analysis ensures consistency and complementarity with the current OECD work on trade in environmental goods and sustainable supply chains by the Trade Committee. This includes parallel workstreams on non-tariff measures affecting environmental goods trade, [15] and environmentally sustainable supply chains.[16]

1.3 Outline of the report

The remainder of this report is structured as follows. Section 2 examines domestic environmental policies aimed at promoting environmental sustainability, including environmental labelling and information schemes (ELIS), environmental sustainability standards and regulations (ESSR), and environmentally-related public procurement (ERPP), among OECD member countries and beyond. Section 3 examines trade policies to promote trade in environmental goods, with a focus on environmental goods lists in trade agreements. Section 4 provides a comparative overview of domestic policies related to environmental labelling and standards, as well as trade policies aimed at promoting environmental goods. Section 5 explores synergies in addressing common challenges and bottlenecks between domestic environmental policies to promote environmental sustainability and trade policies to promote environmental goods. In particular, these common challenges and bottlenecks mainly concern how to set forth environmental criteria and scope of these goods. Section 6 offers concluding remarks.

[12] See: (Garsous and Worack, 2021[9]; Garsous, 2019[8]; Sauvage and Timiliotis, 2017[113]; Sauvage, 2014[7]).

[13] See: (OECD, 2023[103]; 2015[14]; 2011[15]; 2011[104]; OECD, 2008[105]).

[14] See: (UNEP, 2018[6]; Moïsé and Steenblik, 2011[60])

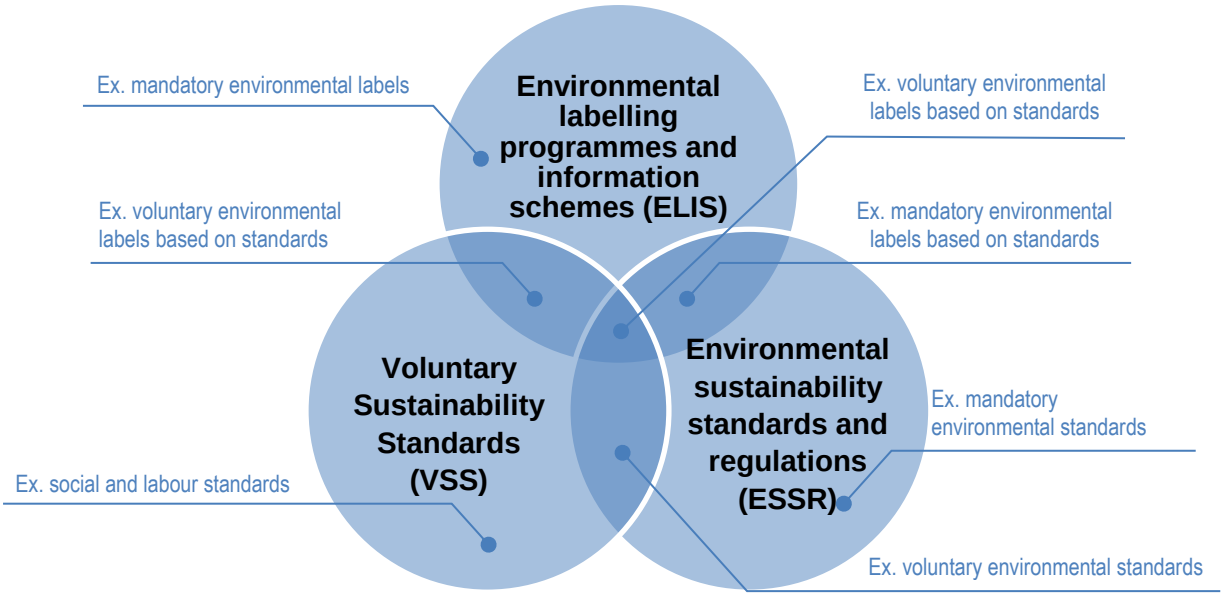
[15] See: (Moïsé and Tresa, 2025[10])

[16] See: (OECD, forthcoming[106]; forthcoming[55]) and (OECD/ITC, 2024[16]).

2 Promoting environmental sustainability through labelling and standards

There are many domestic policies and initiatives in place today that promote environmental sustainability, including environmental sustainability standards and regulations (ESSR), which establish standards or regulations focused on one or more environmental sustainability issue, and environmental labelling programmes and information schemes (ELIS), defined as sustainability initiatives that aim to provide information about one or more aspects of the environmental performance of a product or service to external users (Gruère, 2013[13]). In addition, the term Voluntary Sustainability Standards (VSS) is a related concept that specifies voluntary measures related to a wide range of sustainability metrics that various stakeholders choose to comply with (OECD/ITC, 2024[16]). As illustrated in OECD/ITC (2024[16]), these categories interact and overlap with one another. Indeed, a number of environmental sustainability standards and regulations are also ELIS, and some environmentally focused VSS are also ELIS and environmental sustainability standards (see Figure 2 below). In contrast, mandatory ESSRs would not overlap with VSS, which are voluntary. Likewise, VSS that focus solely on social sustainability (e.g. labour standards, human rights) would not overlap with ELIS or ESSR.

Figure 2. Overview of interaction between labelling schemes and standards



Note: Illustrative examples are shown in the blue text and lines.
Source: Authors

This section provides an overview of environmental sustainability initiatives, with a focus on ELIS, ESSR, and environmentally-related public procurement (ERPP) as tools to accelerate the uptake of environmental sustainability standards and regulations. In doing so, it aims to better understand approaches adopted to differentiate between environmentally sustainable products and supply chains, and those products and supply chains that are not considered environmentally sustainable. This section begins by examining the primary characteristics and trends of ELIS, followed by an overview of sustainability standards and environmentally-related government procurement approaches.

2.1 Environmental labelling and information schemes (ELIS)

2.1.1 Overview

ELIS have become ubiquitous. A simple trip to the supermarket will require the consumer to navigate many different environmental claims about the different products. ELIS are used to transmit information about one or more aspects of the environmental performance of a product or service to an external user (Gruère, 2013[13]). They can adopt various forms of communication, such as ecolabels, environmental claims, and environmental declarations. As further elaborated upon in Box 1 below, each of these three categories communicates and measures environmental sustainability in different ways and corresponds to standards set out in the ISO 14020 series.[17]

Box 1. Overview of main characteristics and examples of different ISO 14020 standards

The ISO 14020 standard comprises three different standards: Type I – Ecolabels (ISO 14024); Type II – Self-declared Environmental Claims (ISO 14021); and Type III – Environmental declarations (ISO 14025).

- *Type I Ecolabels* communicates to the consumer that the labelled products are environmentally preferable to other products in the same product category. These schemes tend to be voluntary but can exert a significant impact on the market if consumer awareness is high. Most ecolabels were introduced with the help of government agencies, starting around the 1970s.
- *Type II Self-Declared Environmental Claims* comprise of private claims made by a company about the environmental characteristics of a product. These claims must be verifiable, accurate and non-misleading. The ISO 14021 standard provides guidance as to the proper use of terms such as "recyclable".
- *Type III* Environmental Declarations cover programs or labels that use environmental declarations, providing quantitative indicators of environmental performance based on life-cycle assessment. They are often used in business-to-business communication but can also be used by consumers if they are third-party audited.

Illustrative examples are provided in Table 1 below.

[17] The ISO 14020 series is not comprehensive of all ELIS. For instance, organic certified products and the Energy Star label are neither third-party audited nor life cycle or multi-criteria based. Moreover, some third-party quantitative reporting schemes that are not life-cycle-based are excluded, such as energy performance or fuel efficiency ELIS (Gruère, 2013[13]).

Table 1. ISO 14020 standards and illustrative examples

ISO Standard	Definition	Examples
Type I – Ecolabels (ISO 14024)	• Seal or logo based on single or multi-attribute criteria • Information is often based on third-party certification • Voluntary schemes focused on non-food products • Mostly targeting consumers	• Nordic Swan • Japanese Eco Mark • Canadian Environmental Choice • Rainforest Alliance • Blue Angel (Germany)
Type II – Self-declared environmental claims (ISO 14021)	• Claims made based on product characteristics or general guidelines • Not third-party certified, but expected to be verifiable and to use accurate information that is not misleading.	• Recyclable content • Biodegradable
Type III – Environmental Declarations (ISO 14025)	• Quantitative Indicators of environmental performance based on LCA to enable comparison between different products • Data must be independently verified • Mostly B2B, or used in public procurement	• Eco-Leaf (Japan) • Korean Environmental Declaration of Products

Source: (Gruère, 2013[13]).

ELIS can be differentiated based on many characteristics. For example, as summarised in Table 2 below, ELIS can focus on business-to-business (B2B), business-to-consumer (B2C), business-to-government (B2G), and government-to-consumer (G2C) communication. In terms of scope, ELIS target a broad range of goods, including agriculture and food, textile products, forest products, buildings and furniture, energy, transportation, household appliances, electronics, cosmetics, and cleaning products. In addition, ELIS can be: (i) private, public, non-profit or hybrid; (ii) voluntary or mandatory; (iii) based on LCA or not; (iv) subject to different types of monitoring and auditing schemes (first, second, and third-party); (v) focus on the service or product itself, or the product's process and production methods (PPMs), which could be a non-product-related PPM (npr-PPM).[18] Moreover, standards can be national, regional or international. ELIS can also be based on different levels of transparency: while some share information on standard-setting processes, others do not.

From an international trade perspective, differentiations between public and private, mandatory and voluntary, and product-related PPM or npr-PPM are particularly important as they shape how international trade rules are applied (these aspects are further elaborated upon Section 5). For instance, where a product is treated differently based on its npr-PPM, it may amount to discrimination under the General Agreement on Tariffs and Trade (GATT), but may be justified under the general exceptions listed under Article XX of GATT, subject to their design and implementation (see Oeschger and Bürgi Bonanomi (2023[17])).

[18] In the context of trade policy, measures based on methods and techniques used to produce goods are framed as "processes and production methods (PPMs"). Furthermore, PPMs can be further distinguished into product-related PPMs (pr-PPMs) or non-product related PPMs (npr-PPMs), depending on whether the production method has a measurable impact on the final product or not (Moïsé and Steenblik, 2011[60]). For a further discussion on the linkages between PPMs and trade in environmental goods, see Box 5.

Table 2. Diversity of environmental labelling and information schemes (ELIS)

Criteria	Options	Examples
Channel of communication	B2B, B2C, B2G, G2C	B2B: Abengoa RED; B2C: Krav Organic; G2C: Eco Mark Japan
Means of communication	Seal, reporting, declarations	Seal: Types I ecolabels, Declarations: Type III labels
Scope	Agriculture & food, textiles, forest products, buildings & furniture, energy, transport, biofuels, tourism, household appliances, electronics, cosmetics, cleaning products.	Agriculture and Food: Protected Harvest; Textile: Oeko Tex Standard 100; Forest products: Forest Stewardship Council; biofuels: 2Bsvs; Tourism: Blue Flag; Appliances: Top Runner Program.
Environmental attributes	Natural resource, energy, chemicals, waste (multiple/other)	Natural resource: Water Stewardship; Energy: Energy Star; Biodiversity: Shade Grown Coffee; Climate: Carbon Labels.org; Waste: Biodegradable.
Leadership or ownership	Private, public, non-profit, hybrid	Private: Casino Carbon Index; Public: Korean Carbon footprint label; Non-profit: Friend of the Sea; hybrid: Roundtable on Sustainable Soy Association
Mode of governance	Voluntary, mandatory	Voluntary: UL Environment Mandatory: EnerGuide.
Transparency	Information on standard-setting process is provided/information is not provided.	Open: EU Ecolabel Not: Bonsucro
Environmental assessment method	LCA-based (or not LCA based)	LCA based: Environmental Choice Canada Non-LCA based: USDA National Organic Program.
Monitoring and auditing	First-party, second-party[19], third-party	First-party: EPA SmartWay Second-party: Green Seal Third-party: Bio-Suisse
Focus	Product standard, process and production methods (PPMs), product related and non-product related (pr-PPM or npr-PPM)	Product Standard: Energy efficiency labels pr-PPM: Imprim'Vert npr-PPM: Timberland Green Index
Geographic Scope	Regional, national, international	Regional: Pure Catskills National: Korean EcoLabel International: Marine Stewardship Council

Note: This table has been reproduced, and slightly altered, from (Gruère, 2013[13]).
Source: (Gruère, 2013[13]).

2.1.2 Trends

The first public eco-labelling schemes appeared during the 1970s. These schemes were designed to provide seals on products with the best environmental characteristics (ISO Type I). Many of the earlier schemes were single-issue certification schemes, which focused on environmental issues, often in individual sectors. Private standards followed in the 1980s and 1990s. Since then, ELIS have both multiplied (e.g. in quantity), as well as extensified (e.g. in scope).

[19] Second-party monitoring or auditing refers to assurances awarded to a group to which the organization belongs or the standard setter (but where there is no third party).

Building on a dataset from an earlier OECD study (Gruère, 2013[13]) and expanded with updated ecolabel data from a global directory (Big Room, 2024[18]), 582 ELIS schemes are found worldwide between 1970 and 2018. During this period, most growth occurred in the area of business-to-consumer schemes. Moreover, up to the year 2000, most of the growth concerned environmental seals or ecolabels (ISO Type I), whereas during the decade following 2000, there was a progressive acceleration in environmental claims (ISO Type II) and declarations (ISO Type III). In terms of the environmental areas covered by standards, an increase in climate and energy standards can be identified between 1990 and 2018. Other trends include an increase in private claims, even if non-profit voluntary schemes dominate over time; and an increase in third-party audited or verified ELIS. Moreover, while the use of LCAs increased during the timeframe of the study, most of the growth in ELIS was based on products using non-LCA methods. With regards to the focus of ELIS, the category that has increased the most during this time period is npr-PPMs, such as on carbon footprint. Overall, the data suggest that growth in ELIS has been uneven, with a shift from more conventional ecolabels and organic agriculture towards "single-issue" labels and numerical declarations.

In addition, Gruère (2013[13]) identified an extensification trend, which is represented by a smaller but faster-growing group of emerging forms of ELIS that focus on quantitative outputs based on life-cycle analysis (ISO Type IIII). Two important LCA methods that are often embedded in standards are the Product Carbon Footprint (PCF) and Product Environmental Footprint (PEF) schemes, which are outcome-based standards that quantify life cycle impacts for products across one or more environmental dimensions (Box 2). While the most common applications of these methods are used in corporate reporting, there are also examples of where life-cycle data are directly included in consumer communications, typically through means of a colour or lettered ranking system to communicate a product's performance (Consumers International and IISD, 2023[19]). For example, Japan's EcoLeaf environmental label utilises the LCA method to quantitatively display the environmental information of products across their life cycle stages.

Box 2. Overview of Product Carbon Footprint (PCF) and Product Environmental Footprint (PEF)

Product Carbon Footprint (PCF): focuses on the total amount of greenhouse gas (GHG) emissions that are directly or indirectly associated with the product, over its entire life cycle. This includes emissions from all stages of a product's life cycle, including raw material extraction, manufacturing, transportation, usage and end-of-life management. As it focuses only on GHG, it has a smaller scope than engaging in a full LCA. Different methodologies are available to calculate PCF. This includes the specific ISO carbon footprinting standard (ISO 14067); the WRI-WBCSD Greenhouse Gas Protocol standard; and the PAS 2050, developed by the British Standard Institution.[20]

Product Environmental Footprint (PEF): This concept has been introduced in order to broaden the scope of the PCF. PEF measures the quantitative impact of a product for a number of environmental dimensions, typically including PCF. Environmental dimensions typically include water use, and biodiversity exploitation. As a result, measuring PEF tends to be more complex than PCF. To remove barriers created by the emergence of a multitude of different approaches, EU Member States, together with private sector initiatives, have developed a PEF method, which is based on 16 categories and focuses on climate change, water use, land use, natural resources and human health issues. The overall PEF score is presented through a point system.

PCF and PEF both cover a wide range of sectors and diverse product groups, including food and drink to cosmetics and electronic goods.

[20] The OECD, under the flagship project the Inclusive Forum on Carbon Mitigation Approaches (IFCMA), is undertaking work to better understand the nature of carbon intensity metrics (OECD, 2024[94]).

France is in the process of introducing a decree that would provide a sustainability rating to fashion. In 2020, it passed the AGEC Law requiring all textile products to be sold in France to be given an environmental score by 2024-2025. It will do so based on the PEF. Products with a high environmental impact will increase in price.

Source: (Prag, Lyon and Russillo, 2016[5])

2.1.3 Challenges

Various challenges to the multiplication and extensification of ELIS have been identified. In particular, the large number of ELIS creates compliance costs for producers, as they must switch to more expensive, environmentally-friendly production methods and incur the costs associated with certification and audit procedures (Prag, Lyon and Russillo, 2016[5]).[21] Producers from developing countries will face the greatest hurdles, given that ELIS are much less prevalent in these countries, and they lack the infrastructure required for certification and traceability requirements, commonly referred to as "Quality Infrastructure" (World Bank, 2019[20]). The extent to which ELIS may present negative implications to trade for producers depends, in part, on whether ELIS are interoperable, especially with regards to certification and audit procedures. Ensuring ELIS and ESSR are developed in compliance with the provisions of the Technical Barriers to Trade (TBT) Agreement would be one way to potentially enhance interoperability and reduce the compliance burden associated with the multiplication of ELIS (for details, see Section 5.2 below).

One response to the multiplication of ELIS has been for governments to adopt mandatory ELIS. While mandatory ELIS exist in many countries, they tend to be limited to product characteristics like the energy-efficiency of appliances (e.g., Energy Star, the EU Energy Label, or the Australian Energy Rating Label) or water efficiency (e.g., the Water Efficiency Labelling and Standards (WELS)); they mostly do not, however, cover npr-PPMs. Moreover, when governments adopt mandatory ELIS, it is imperative that these do not become barriers to trade. This can be done by recognising similar ELIS adopted in other jurisdictions as equivalent, or through the negotiation of mutual recognition arrangements between governments introducing mandatory schemes. This aspect of interoperability between different schemes is explored further in Section 5.2 below.

These examples reflect the complexity of implementing and enforcing standards that are part of complex global supply chains, and the fact that defining a single standard for environmental sustainability can be very challenging. Indeed, a standard designed around one country's production conditions might not be relevant to measuring environmental impact in another country.

Various challenges can also be identified with regard to extensification of ELIS schemes (i.e. introducing new schemes, focusing on different products and users, or in different countries). Specifically, PCF and PEF processes are contingent upon high-quality data, which can both be cumbersome and costly to collect (Prag, Lyon and Russillo, 2016[5]). In particular, a major challenge has been obtaining high-quality data from foreign suppliers on their environmental impacts (ibid). While the use of default data could reduce the data collection burden, it risks introducing subjectivity in the PCF calculations, which can affect the competitiveness among producers. For PEF, these challenges tend to be multiplied, given that they are dependent on a much larger number of metrics, like biodiversity. Governments are responding to these challenges by developing mandatory LCA-based labelling schemes for products, on a sector-by-sector basis; by improving coherence across quantitative footprint schemes like PEF; by creating public life-cycle

[21] In order to offer a system to characterise and differentiate sustainability initiatives, the OECD developed a typology framework to better understand the landscape of sustainability initiatives (OECD/ITC, 2024[16]).

inventories; by making LCAs a requirement in public procurement; and by offering support services and tools to help SMEs participate (Consumers International and IISD, 2023[19]).

Another challenge associated with ELIS concerns greenwashing. This is especially challenging with regard to ISO Type II, self-declared standards. Indeed, the International Consumer Network suggests that around 40% of sustainability claims could be misleading (Consumers International and IISD, 2023[19]). The European Commission found that around 37% of firms use vague claims such as "conscious" "eco-friendly, or "sustainable", suggesting that these products had no negative impact on the environment (EC, 2021[21]). Greenwashing is a serious problem, given that it misleads consumers into believing they are purchasing environmentally sound goods whereas this may not actually be the case. As a result, greenwashing can breed consumer scepticism with regard to any ELIS, thereby undermining their effectiveness. One response to this has been for governments to issue guidance to businesses on how to make sustainability claims compliant with consumer protection law. Internationally, guidelines for self-declared standards can be found in the UN Guidelines for Providing Product Sustainability Information (UNEP, 2017[22]) and the ISO 14020, already highlighted in Box 1 above. In particular, ISO 14020 specifies requirements for self-declared environmental claims, including a description of commonly used terms in environmental claims and qualifications for their use, as well as a general, and specific, evaluation and verification methodologies for self-declared environmental standards (ISO, 2016[23]).

Governments are also addressing greenwashing by tightening regulations around ELIS. For instance, in 2024, the EU adopted a new regulation banning generic environmental claims on products without proof; claims that a product has a neutral, reduced or positive impact on the environment because the producer is offsetting emissions; and on sustainability labels that are not based on approved certification schemes or established by public authorities (European Parliament, 2024[24]). In addition, the EU is developing a Green Claims Directive to complement the EU's ban on greenwashing. This proposed Directive introduces a verification system for companies that want to make environmental-related claims. Prior to using certain claims for their products, companies would need to submit evidence for them and get preapproval from verified assigned by EU countries (ibid).

In April 2022, the U.S. Environmental Protection Agency's Environmentally Preferable Purchasing Program strengthened the requirements that standards and ecolabels must meet in order to be included in the Recommendations of Specifications, Standards and Ecolabels for Federal Purchasing by requiring third-party certification (EPA, 2024[25]). The Recommendations help the U.S. federal government meet their sustainability mandates by utilizing private sector owned and managed sustainability standards and ecolabels (ibid).

Growing allegations against greenwashing have also led to the development of benchmarking initiatives, such as the OECD's ongoing Alignment Assessments of sustainability initiatives in the minerals, garment and footwear, and agriculture sectors (OECD/ITC, 2024[16]; OECD, 2022[26]). These efforts have identified differences in the quality of audits and oversight mechanisms. Another interesting initiative is the ISEAL Good Practice Guide on Benchmarking, which defines how to systematically analyse market-based sustainability initiatives (ibid).

Finally, a key challenge that has been raised in the context of ELIS concerns how to update different standards in response to outdated approaches or technologies. Some ELIS are addressing this head-on, including the Energy Star Ecolabel, which sets out a robust procedure for sunsetting products that are no longer representing the environmentally preferred product (Cosbey et al., 2010[27]). Specifically, a revision will take place when Energy Star-qualified products attain 50% of the market share (ibid). It can also be triggered by other factors, including a change in U.S. federal minimum energy performance standards; transformational advances in technology; product availability, performance or quality issues; or issues with the mandated testing procedures. Review and revision are also regularly done in the area of verification testing requirements (ibid).

Another example is the European Union's Ecolabel, which is a label applied to the best 10-20% of the products available in the Economic European Area in terms of environmental performance at the time of their adoption (EC, 2024[28]). It includes a systemic review and update process to ensure that its standards reflect current environmental best practices and advancements in technology. The validity for each product group criteria is typically 3 to 5 years (EC, 2024[28]). When revised, criteria that are taken into account include technical innovation, such as the evolution of materials or production processes, emission reductions and changes in the market (ibid).

2.2 Environmental sustainability standards and regulations (ESSR)

As highlighted above, environmental sustainability standards and regulations (ESSR) are standards or regulations that focus on one or more environmental sustainability issues. They can be either mandatory or voluntary in nature depending on whether they are established by public authorities or private entities. ESSR can also help create demand in global markets for products that contribute to environmental objectives. ESSR include, but are not limited to, ELIS. A key difference between ESSR and ELIS is that ESSR often impose a minimum – or maximum – sustainability requirement with which the products must comply, whereas ELIS tend to focus on communicating information about a product's environmental characteristics, with or without establishing a threshold.

Generally, and similar to ELIS, sustainability standards take different forms and can include product standards but also npr-PPMs. For example, product standards include mandatory eco-design requirements and minimum energy performance standards (MEPS), as well as recycled content standards. MEPS are mandatory in a large number of OECD countries, typically covering products such as refrigerators, air conditioners, electric motors, water heaters, dishwashers, and washing machines. With regard to circular economy approaches, the EU has adopted various regulations that establish targets for recycled content. For example, the Single Use Plastics Directive (2019) introduces a requirement for beverage bottles made of polyethylene terephthalate (PET) to have a recycled content requirement of 25% by 2025 and 30% by 2030 (EU, 2019[29]).

Process standards, also known as npr-PPMs, often refer to resources used in the production of a product (e.g. the amount of water or energy used in producing a textile). There are various global developments that increasingly focus on setting minimum process standards for different products and making compliance with these npr-PPMs mandatory. An example includes the proliferation of laws and regulations that require that a subset of agricultural products, such as coffee, cocoa, rubber, soy, palm, or beef, be produced without incurring new or illegal deforestation.[22]

Some regulations combine product standards and npr-PPMs. An example of this is the EU's Ecodesign for Sustainable Products Regulation (ESPR), which entered into force on 18 July 2024. This regulation aims to ensure that all products placed on the EU market – including imported products – are more durable, reusable, and reparable, and include a certain percentage of recycled content. The majority of the requirements set out in the ESPR are product standards (EU, 2024[30]). This includes durability and reliability of the product; ease of maintenance and repair; ease of upgrading, reuse, refurbishment and remanufacturing; ease and quality of recycling; a minimum percentage of recycled content; and criteria regarding the presence of substances of concern. Yet it also includes a focus on energy use or energy efficiency, and resource use or resource efficiency, related to the production of the product. The ESPR also incorporates the ISO Type III approach, by measuring environmental impacts using an LCA approach. Moreover, the ESPR envisions that covered products are accompanied by a Digital Product Passport,

[22] The EU, US, and UK have introduced or are considering regulations to address trade-related deforestation – namely, the EU's Regulation on Deforestation-free Products (EUDR), Schedule 17 of the UK's Environment Act 2021, and the US FOREST Act. They aim to condition market access for certain products on their deforestation-free status.

which provides information about the production and consumption of the product, comparable to a list of ingredients.

Another set of ESSRs focuses not on products npr-PPMs, but rather on establishing certain minimum standards for companies to adhere to. An example of this is standards that set out due diligence approaches. This includes international standards, like the OECD Due Diligence Guidance for Responsible Business Conduct; the UN Guiding Principles on Business and Human Rights; and also the recently developed EU Corporate Sustainability Due Diligence Directive (CSDDD), which will require large companies in Europe to prove that they are taking action to protect the environment and human rights throughout the supply chain. Relatedly, a number of standards focus on establishing environmentally sustainable business organisations. For example, ISO 14001 establishes Environmental Management Systems (EMS). It provides a framework for organisations to design and implement an EMS, and to continually improve their environmental performance.[23]

2.3 Environmentally-Related Public Procurement (ERPP)

Public procurement, i.e. "the purchase by governments and state-owned enterprises of goods, services, and works", can be leveraged by policy makers if they wish to strengthen demand for environmentally sustainable products and supply chains. The WTO estimates government procurement accounts for up to 15% of a country's GDP, and according to OECD data, in 2019, public procurement accounted for an average of 12.6% of GDP across OECD member countries (OECD, 2021[31]). Therefore, its potential impact to nudge markets towards sustainability is enormous.[24]

In particular, environmentally-related public procurement (ERPP) can promote the public purchasing of products and services that are less environmentally damaging when taking into account their whole life cycle (OECD, 2015[14]). For instance, it can promote government preferences for recycled goods, energy-efficient appliances, fuel-efficient vehicles and public transport systems, or related consultancy services such as energy audits. It can be a major driver for innovation by supporting nascent markets for environmental products during their start-up phase. It can also provide incentives for the private sector to develop environmentally sustainable products and services, especially in sectors where public procurement accounts for a large share of the market, such as construction, health services and public transport (OECD, 2015[14]).

Over the last few years, a growing number of sustainable procurement policies have been launched by OECD countries (including Australia, Canada, the EU, Japan, and Korea), and in emerging developing countries (e.g. China, Philippines and Thailand). Various international initiatives around ERPP have also sprung up. In 2002, the OECD adopted a Recommendation on Green Public Procurement, and in the same year, the Marrakech Task Force on Sustainable Procurement was created with the aim of spreading sustainable and environmentally-related public procurement practices. More recently, the UN Environment Programme's One Planet Programme on Sustainable Public Procurement (SPP), formerly known as the SPP Programme of the 10-Year Framework of Programmes on Sustainable Consumption and Production (10YFP), was developed as a global multi-stakeholder platform supporting the implementation of sustainable public procurement around the world (EC, 2017[32]). Some of these initiatives focus not solely on environmentally-related procurement but adopt a broader sustainability lens. This includes the

[23] https://www.iso.org/standard/60857.html.

[24] Government procurement, if poorly designed, carries the potential risk of being discriminatory. The WTO Agreement on Government Procurement (GPA) seeks to minimise these risks. Such design aspects related to domestic policies are further explored in Section 5.2.

Sustainable Public Procurement Initiative (SPPI), launched at Rio+20 in 2012, which later became the One Planet Network SPP Programme (UNFSS, 2020[33]).

ERPP can extensively build on ELIS and ESSR. In some countries, ERPP sets out the obligation to purchase only ecolabel-led products. (UNFSS, 2020[33]). For example, in Korea, state agencies were recommended to preferentially purchase the Korea Ecolabel, under the Act on Development and Support of Environmental Technology (OECD, 2024[34]). This stimulated the development of eco-labelled products in both quantity and quality by leveraging public demand (ibid). China integrated ELIS into its ERPP by establishing the China Environmental Labelling Programme (CELP), a third-party certification launched in 1993 by the China Environmental United Certification Centre (CERTRIP, n.d.[35]). Products that are certified with CELP and fall within the CELP products list will have priority over non-certified products when competing for government procurement products. The list includes products such as computers, printers, scanners, textile fabrics, furniture, televisions, paper products, construction materials, automobiles, paper products, etc (CERTRIP, n.d.[35]). In the United States, the U.S. federal government may choose to maximize the procurement of sustainable products and services by utilizing sustainability standards and ecolabels. For example, the Electronic Product Environmental Assessment Tool (EPEAT) has been developed to enable institutional purchasers to evaluate and compare various electronic products such as desktops and monitors. It also provides performance criteria for product design based on multiple environmental criteria, including emissions reduction, circularity design, product longevity, end-of-life management, and corporate performance, and is used as a part of public procurement practices (EPA, 2024[25]). In Mexico, the federal government's procurement policy requires that all timber and wooden furniture products are third-party certified to ensure that wood comes from sustainably managed forests. In particular, Mexico recognises certifications such as the Forest Stewardship Council (FSC), and the Programme for the Endorsement of Forest Certification (PEFC) (Bermúdez, 2021[36]).

Where ERPP directly reference specific VSS, these are either selected because such standards have become internationally dominant standards to establish sustainability vis-à-vis a specific product (e.g. the FSC for timber), or because they are dominant within the country establishing the ERPP (e.g. the Korea EcoLabel). More indirectly, governments can determine a set of ERPP guidelines (both general and product-specific) that can form the basis to identify specific VSS that meet ERPP standards. For example, the US has adopted guidelines for selecting non-government sustainability standards that federal buyers can choose to use in order to identify and procure environmentally preferable products and services. For example, the Electronic Product Environmental Assessment Tool (EPEAT) is a product standard based on multiple environmental criteria, including emissions reduction, circularity design, product longevity, end-of-life management, and corporate performance, and is used as a part of public procurement practices (EPA, 2024[25]). The tool recommends over 40 private sector standards and ecolabels in more than 30 purchase categories, giving preferences to multi-attribute/life-cycle-based standards/ecolabels that address a key impact area and include third-party verification (ibid). Best practice sharing in this area could be useful, particularly in helping governments extend their public procurement mandates to use a wider range of ELIS (Prag, Lyon and Russillo, 2016[5]).

The European Union has identified a set of criteria that ELIS must comply with in order to be recognised under public procurement. These conditions include that: (i) the ELIS is based on objectively verifiable and non-discriminatory criteria; (ii) it is established in an open and transparent procedure in which all relevant stakeholders may participate; (iii) it must be accessible to all interested parties; and (iv) the label requirements are set by a third party over which the economic operator applying for the label cannot exercise a decisive influence (EU, 2014[37]). In addition, where specific labels are used, they must be accompanied by the words "or equivalent".[25] Most labels that are Type I ISO labels meet these conditions,

[25] Article 42(3)(b) of Directive 2014/24/EU; Article 60(3)(b) of Directive 2014/25/EU.

even if they may also contain criteria specific to the product or service being purchased, such as general management requirements (EU, 2016[38]).

For various industry sectors, the EU has also developed common, voluntary ERPP criteria for goods and services, and works to reduce the environmental impact of a purchase (EU, 2008[39]). The basic concept is to have clear, verifiable, and ambitious environmental criteria based on a life-cycle approach and a scientific evidence base. A strong link between the EU ecolabel and ERPP criteria can be found, as they are based on similar criteria (GEN, 2023[40]). The EU has developed such criteria for different sectors, including computers; data centres; electricity; food catering services; furniture; imaging equipment; indoor cleaning services; office building design; construction and management; public space maintenance road design; road lighting and tariff signals; road transport; and textile products and services (EC, n.d.[41]).

For example, with regards to furniture, voluntary ERPP criteria include procuring timber from legal sources; using materials made partly or totally from renewable sources; establishing maximum limits for total volatile organic compounds emissions; procuring durable and fit-for-use furniture with relevant environmental standards; and procuring easy-to-disassemble, repairable and recyclable furniture covered by a warranty (EU, 2017[42]). With regards to textiles, the ERPP approach includes purchasing textiles from fibres produced with less fertilisers, hazardous pesticides and production chemicals; textiles that contain recycled materials; textiles with reduced use of environmentally harmful and hazardous substances, and services that minimise energy used to wash, dry and iron textiles, services that maintain textiles to extend their lifetime; and services that maximise potential for reuse and end-of-life recycling. The approach identifies ESSR and ELIS, where relevant to these criteria. For example, for sustainable wood pulp sourcing, it highlights that the Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) provide sufficient levels of assurance for compliance with national criteria. For traceability of recycled content claims, ISO 14021 or 9001 or equivalent may be used. With regards to laundry services, reference is made to implementing energy management systems in accordance with ISO 50001 (EU, 2017[43]).

EU contracting authorities may also require evidence of the environmental management systems an operator has in place. For example, this could be requiring certification under the eco-management and audit scheme (EMAS) or the European or international standard on environmental management systems (EN/ISO 14000). Similar to product labels, equivalence must also be accepted, and other evidence must be considered where an operator has no access to third-party certifications or no possibility to obtain them (EU, 2016[38]).

In sum, strong linkages exist between ELIS, ESSR and ERPP. As most legal frameworks require compliance with non-discrimination and equal treatment principles, it is often not possible for governments to mandate compliance with one specific ELIS (UNFSS, 2020[33]). However, on the other hand, governments may refer to ELIS indirectly through the inclusion of sustainability criteria that are similar to ELIS, or they can make reference to a specific ELIS as a means of proof of compliance with the stipulated criteria (ibid).

The integration or reference to ELIS could be especially effective in developing and least-developed countries that do not have specific laws and guidelines in place mandating that procurement should be green or sustainable. The absence of such guidelines makes it difficult to determine what is sustainable and what is not, and a lack of resources and knowledge to determine this (Bermúdez, 2021[36]).

3 Promoting environmental sustainability through liberalising environmental goods in trade

3.1 Overview of trade in environmental goods

Having provided an overview of key trends and characteristics relevant to the adoption and implementation of ELIS and ESSR, this section shifts gears and focuses on trade agreements and their role in advancing trade in environmental goods. In particular, it zooms in on the practices adopted and methods used to identify environmental goods. Moreover, it highlights the importance of addressing non-tariff barriers to accelerate trade in environmental goods.

Several initiatives and negotiations have taken place to liberalise trade in environmental goods. These efforts are seen by their supporters as win-win opportunities for the economy and the environment by expanding production and trade of goods that are deemed by the parties to the agreement to be more environmentally-friendly or address certain environmental challenges. Indeed, trade in environmental goods can accelerate the uptake of environmental technologies particularly through the technique and potentially composition effects,[26] thereby playing an important role in addressing climate change and other environmental problems (Moïsé and Tresa, 2025[10]). Empirical analysis suggests that the adoption of stringent environmental policies are associated with increased exports of environmental goods (Sauvage, 2014[7]).

An OECD report by Moïsé and Tresa (2025[10]) provides a broad overview of recent trends and developments in trade in environmental goods, focusing not only on tariffs but also on non-tariff measures. Insights from this report are compiled in Box 3 below.

[26] The environmental economics literature discusses the environmental effects of economic growth and trade through three main channels: scale, composition and technique effects (Grossman and Krueger, 1995[107]). The scale effect refers to an increase in pollution due to the overall increase in output. The composition effect implies changes in comparative advantage and production patterns in the economy, which may favour changes in clean or polluting sectors, leading to net positive or negative environmental impacts. The technique effect represents technology improvements and enables a decrease in pollution and emissions per output. The relationship between these three effects and environmental technologies are further discussed in (Moïsé and Tresa, 2025[10]).

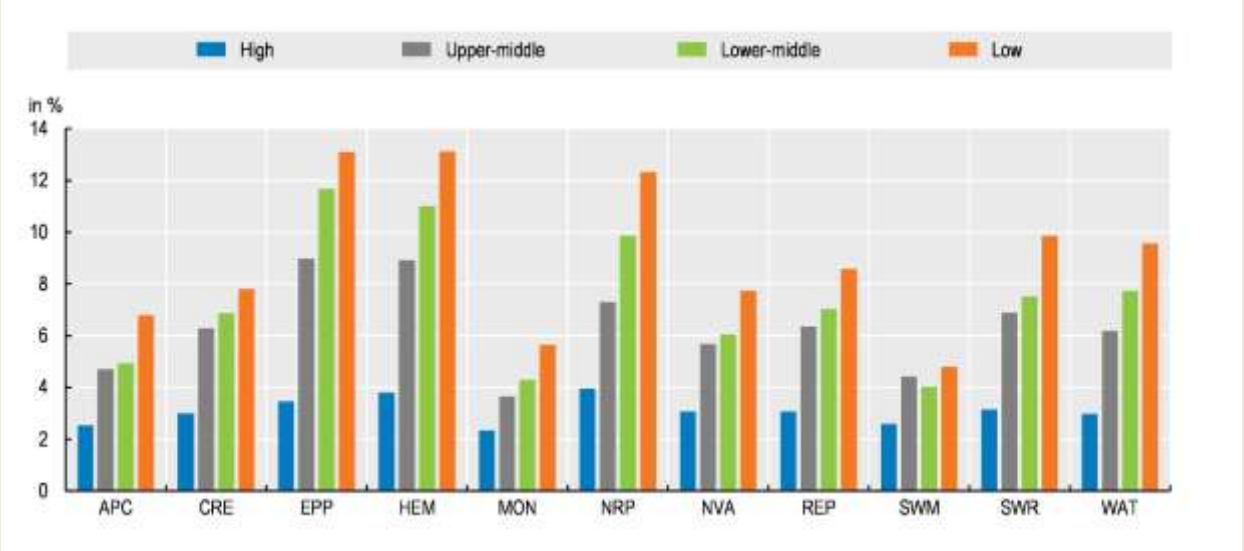
Box 3. Trade and environmental goods – state of play

Insights from OECD report "Beyond the Tariff: Non-Tariff Measures Affecting Environmental Goods Trade"

Trade in environmental goods has grown rapidly in recent decades. Based on the OECD updated combined list of environmental goods (updated CLEG) prepared by Moïsé and Tresa (2025[10]), renewable energy plants (REP) and cleaner or more resource efficient technologies and products (CRE) have been the most prominent in terms of exports. Similar estimates are given by the WTO. Between 2000 and 2020, trade in environmental goods grew by 243%, accounting for 4.4% of global trade in 2020 (WTO, 2023[44]). The WTO also estimates that the elimination of trade barriers on energy-related environmental goods (including low-emission and renewable energy, energy-efficiency, and resource-efficient goods) and environmentally preferable products (that cause significantly less environmental harm over their life cycle than alternatives) would increase global exports by 5% and 14%, respectively, while curbing global CO_2 emissions by 0.58%, against the baseline in 2030 (Bacchetta et al., 2025[45]).

Tariff rates on imports of environmental goods appear to be already quite low in developed economies (between 2-4% in 2019), however, still remain significant for middle- and low-income countries (between 4-14% in 2019) (see Figure 3). For this reason, it is important to address both tariffs and non-tariff measures, depending on the country context, in order to remove trade barriers for environmental goods.

Figure 3. Tariffs on environmental goods are already low, but vary across income groups



Note: Based on World Bank country classification for income-groups and OECD Updated Combined List of Environmental Goods (CLEG). The environmental mediums are: APC = Air pollution control; CRE = Cleaner or more resource efficient technologies and products; EPP = Environmentally preferable products based on end use or disposal characteristics; HEM = Heat and energy management; MON = Environmental monitoring, analysis and assessment equipment; NRP = Natural resources protection; NVA = Noise and vibration abatement; REP =Renewable energy plant; SWM = Management of solid and hazardous waste and recycling systems; SWR = Clean up or remediation of soil and water; WAT = Waste water management and potable water treatment.

Source: (Moïsé and Tresa, 2025[10])

3.2 Defining environmental goods in trade agreements

Over the years, various initiatives have been proposed to promote trade in environmental goods by further reducing tariffs and increase market access on environmental goods through trade agreements. One of the challenges in this regard has been to identify the environmentally friendly function of a specific good, which has not always been straightforward.

An OECD report by Moïsé and Tresa (2025[10]) provides an illustration of environmental goods lists and negotiating rounds for trade liberalisation, as well as the criteria for defining environmental goods (e.g. end-use versus lifecycle based factors). The following subsections draw upon available insights, including from this report.[27]

3.2.1 Approaches and trends

Liberalising trade in environmental goods has been the focus of initiatives both at the multilateral level, through the World Trade Organization (WTO), and as part of Regional Trade Agreements (RTAs). The APEC List of Environmental Goods, concluded in 2012, is the first agreed list that includes voluntary commitments to reduce tariffs with regard to a specific list of environmental goods. It covers 54 product categories, primarily industrial products such as bamboo flooring, steam condensers, and filtering and purifying machinery. In 2014, a coalition of fourteen WTO Members started negotiations for an Environmental Goods Agreement (EGA), to take the form of a "critical mass" WTO plurilateral. This initiative sought to expand the list of environmental goods that had been agreed by APEC economies. The EGA negotiations, which involved predominantly OECD Members, collapsed at the end of 2016, mostly because of a lack of consensus about what goods to include. Similar to APEC, many of the goods that were included on the final list of 304 Harmonized System 6-digit tariff lines were considered environmental goods because of end-use (i.e. the purpose for which they would be used).

More recently, informal discussions with an aim to promote and facilitate access to environmental goods and services, including encouraging the global uptake of new and emerging low-emissions and other climate-friendly technologies, have emerged at the multilateral level under an informal, plurilateral dialogue at the WTO known as the Trade and Environmental Sustainability Structured Discussions (TESSD) since 2020, and its dedicated working group on environmental goods and services created in 2021 (WTO, 2022[46]).

In addition to these multilateral developments, recently negotiated trade agreements increasingly include lists of environmental goods, with mixed levels of progress at the international level (see Table 3 below). This includes those between New Zealand-Chinese Taipei (2012-2013), New Zealand-United Kingdom (2020-2022), New Zealand-EU (2023-2024), and the Agreement on Climate, Trade and Sustainability (ACCTS), which is a plurilateral agreement signed between Costa Rica, Iceland, New Zealand, and Switzerland in November 2024 (New Zealand Foreign Affairs and Trade, 2024[47]). Most of these initiatives include a commitment from the parties to reduce or remove tariffs on products that are included in a negotiated list of environmental goods. Furthermore, APEC is in discussions of whether to update its original environmental goods list, as well as having recently endorsed a voluntary reference list of 62 environmental and environmentally related services in 2021 (APEC, 2021[48]). In 2022, the Singapore-Australia Green Economy Agreement also established a voluntary list of environmental goods and services (Australian Government, 2022[49]). Moreover, in November 2024, Chile, New Zealand and Singapore announced the establishment of a Joint Working Group on trade and the green economy, to make

[27] Subsections 3.2.1 and 3.2.2 set out trends and approaches with regards to defining environmental goods and services in trade agreements, as well as approaches to address non-tariff barriers in trade agreements. These subsections particularly draw on Section 2 in (Moïsé and Tresa, 2025[10]).

recommendations to governments on the scope of a possible new trade initiative. Areas of discussion include trade in green goods and services (New Zealand Foreign Affairs and Trade, 2025[50]).

Table 3. International initiatives to liberalise trade in environmental goods

Initiative	Coverage (no. of economies)	Negotiations (in force)	Content	No. of HS* subheadings	Status
WTO Doha Round	Multilateral (162)	Since 2001 (n.d.)	The reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services", on an MFN basis.**	Not determined	Unconcluded
Environmental Goods Agreement (EGA)	Plurilateral (18)	2014-2016 (n.d.)	Initial aim addressed tariffs on listed environmental goods on an MFN basis.	304	Unconcluded
APEC List of Environmental Goods	Regional (21)	2011-2012 (2012)	Voluntary tariff reductions on listed environmental goods to a maximum of 5% on an MFN basis. Members have called for a review of this list in 2021	54	In force
New Zealand-Chinese Taipei Economic Cooperation Agreement	Bilateral (2)	2012-2013 (2013)	Tariff eliminations on listed environmental goods upon entry into force. Endeavour to address any non-tariff barriers identified by either Party.	132	In force
New Zealand-United Kingdom Free Trade Agreement	Bilateral (2)	2020-2022 (2023)	Tariff eliminations on listed environmental goods. Endeavour to address any potential tariff and non-tariff barriers identified by a Party.	290	In force
Singapore-Australia Green Economy Agreement	Bilateral (2)	2021-2022 (2022)	Non-binding agreement. Includes two lists of 372 environmental goods and 155 environmental services	372	In force
European Union-New Zealand- Free Trade Agreement	Bilateral (2)	2019-2022 (2024)	Non-exhaustive list on environmental goods and services; to eliminate customs duties on environmental goods between the other Parties; to undertake binding commitments on environmental and circular-economy-related services	48	In force
Agreement on Climate Change, Trade and Sustainability (ACCTS)	Plurilateral (4)	2019-2024 (n.d.)	Removal of tariffs on 316 environmental goods and new binding commitments for 110 environmental services.	316	Signed

Notes: *HS refers to the Harmonized System - a standardised method of classifying traded products.
**MFN refers to the most-favoured-nation principle to treat all trade partners equally.
Source: Compiled by author in reference to (Bellmann and Sugathan, 2022[51]), (UNEP, 2018[6]) and trade agreement texts and sources.

The way in which the "environmentally friendly" aspect of a good is identified in trade agreements is distinct from approaches adopted for ELIS and ESSR.

While there is no internationally agreed definition of environmental goods and services, earlier work by OECD/Eurostat (1999[52]) defines them as follows: "The environmental goods and services industry consists of activities which produce goods and services to measure, prevent, limit, minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems. This includes cleaner technologies, products and services that reduce environmental risk and minimise pollution and resource use." This definition has often provided a starting point for trade negotiations and data compilation. Various definitions and lists of environmental goods and services have evolved since then.[28]

[28] See also (Moïsé and Tresa, 2025[10]) for further discussions on trade liberalisation initiatives of environmental goods.

In most trade agreements, an environmental good is defined based on end-use, that is, goods considered environmental because, in their end-use, they serve an environmental purpose, even if they may not exhibit inherently environmental characteristics (Moïsé and Tresa, 2025[10]). Examples of end-use products include solar panels, which convert sunlight into electricity; recycling machinery, which enables the recycling of goods otherwise thrown out; and air pollution control devices, given their impact on the environment. The 54 environmental goods included in the APEC List of Environmental Goods were mostly industrial goods with environmental end-uses, primarily for pollution prevention or control. More than one-third of the goods are used for environmental monitoring analysis and assessment. The stalled EGA included 304 product lines organised into ten sectors based on environmental use. These sectors are air pollution control, cleaner and renewable energy, energy efficiency, environmental monitoring analysis and assessment, environmental remediation and clean-up, environmentally preferable products, noise and vibration abatement, resource efficiency, solid and hazardous waste management, wastewater management and water treatment (CSIS, 2021[53]).

While recent RTAs also approach environmental goods predominantly through an end-use lens, they increasingly include a subset of environmental goods that reflect life cycle approaches and are commonly referred to as environmentally preferable products (EPPs). UNCTAD (2004[54]) defines EPPs as "products that cause significantly less 'environmental harm' at some stage of their 'life cycle' than alternative products that serve the same purpose."[29] This classification includes commodities and agricultural production standards such as organic products, jute and textile products, non-timber forest products, certified aquaculture, products made from natural fibres and other natural resource-based products. These products do not serve an environmental purpose but are preferred over other similar products in terms of one or more parts of their life cycle (e.g. energy use, amount of waste generated, impact on human and animal life, or the use of natural resources). While APEC's 2012 list includes only one product (bamboo) formally considered to be an EPP, the inclusion of EPPs in environmental product lists has increased in more recent RTAs. For instance, 36 of the 372 products included in the environmental products list in the Singapore-Australia Green Economic Agreement are EPPs. Similarly, 40 out of the 316 products covered by the ACCTS are included on the basis of being an EPP. The UK-New Zealand FTA also includes numerous products that have been included on the basis of EPPs. Examples are set out in Table 4 below.

[29] The OECD further elaborated on the EPP concept and classified them into three main categories: "(i) the function the product performs by design or function (for example, baking soda or soap); (ii) its own environmental impact using life cycle analysis (for example, bicycles as a form of transport); or (iii) the environmental impact of other goods which the product could improve (for example, assuming that a longer life cycle is related to lower environmental impact, small repair tools can extend the useful life of some products)" (Tothova, 2005[108]).

Table 4. Examples of Environmentally Preferable Products (EPP) as identified in regional trade agreements (RTAs)

RTA	Product	EPP rationale provided in RTA
Singapore-Australia Green Economy Agreement	Flax, raw or processed	Environmentally preferable because it is biodegradable and preferred to synthetic materials
	Sacks and bags, of a kind used for the packing of goods; of jute or of other textile bast fibres	Environmentally preferable to synthetic materials.
	Assembled flooring panels of bamboo	Environmentally preferable alternative due to the natural, renewable and biodegradable nature of bamboo
	Pig iron, produced using low carbon emission production processes	Use of low emissions techniques makes them EPP
	Aluminium ores and concentrates	EPP because goods produced using low carbon emissions production process, which will support the reduction of emissions intensity of the process
UK-New Zealand Free Trade Agreement	Sustainably sourced wood-based construction materials	EPP alternative to carbon-intensive construction materials
	Wool	EPP to more carbon-intensive synthetic fibres
	Wood/assembled flooring panels, of bamboo or with at least the top lawyer.	Sustainably sourced bamboo products provide an EPP due to natural, renewable and biodegradable nature of bamboo compared to other materials.
New Zealand-Chinese Taipei Economic Cooperation Agreement	Bicycle tires; tubes, etc.	Environmentally preferable because bicycles and their spare parts exert positive effect on reducing exhaust emissions from automobiles, air pollution, and greenhouse effect etc.
	Steam turbines and other vapor turbines; of an output not exceeding 40 mw.	Designed for the production of geothermal energy (renewable energy) and co-generation which allows for a more effective use of energy than conventional generation
	Turtle excluder devices	Reduces turtle mortality rate
Agreement on Climate Change, Trade and Sustainability (ACCTS)	Shorn wool	Wool is a natural and biodegradable fibre are preferable to more carbon intensive synthetic fibres.
	Flax, raw or processed	Flax is a natural and biodegradable vegetable fibre, and a preferable option to more carbon-intensive synthetic fibres.
	Wood-based materials	Wood-based materials are environmentally preferable to more carbon-intensive materials due to natural, renewable and biodegradable nature of wood.
	Fishing rods, fish-hooks and other line fishing tackle; fish landing nets, butterfly nets and similar nets; decoy “birds” and similar hunting or shooting requisites.	Rounded, “circle-shaped” hooks are environmentally preferable to conventional “J-shaped” hooks as they significantly reduce sea turtle mortality and increase the survival of angler released fish.

Note: Authors based on the original text of each trade agreement. To note, the EU-New Zealand FTA is not covered in this table as the agreement does not provide details on the rationale for including goods on its environmental goods list. See 6Annex A for further details.

Despite the increase of EPPs in environmental goods lists in recent RTAs, their inclusion remains limited: they tend to focus on product characteristics, not on npr-PPMs (Moïsé and Tresa, 2025[10]). The Singapore-Australia Green Economy Agreement is an exception to this, as it includes products such as clean hydrogen, pig iron, and aluminium ores, produced through low-carbon processes, which reduces their emission intensity.[30] Moreover, none of the EPPs set out in RTAs are based on LCAs; rather, they tend to be defined by their superior environmental performance at a particular point in their life cycle. For example, the Singapore-Australia Green Economic Agreement includes various products (flax and sacks and bags of jute or of other textile bast fibres) because they are preferable to synthetic materials; the New Zealand-Chinese Taipei Economic Cooperation Agreement includes bicycle tyres because bicycles are environmentally preferable to cars as they can contribute to reducing exhaust emissions from the use of automobiles; and the ACCTS includes various wood-based materials in the environmental goods lists because they are preferable to more carbon-intensive construction materials. However, in neither case does the analysis compare the entire life cycle of a product with another. Doing so, for example, for paper bags, would require examining the environmental impact of the paper bag, which includes timber harvesting, pulping, paper and bag production, as well as product use and waste disposal. For bicycle tyres, it would require looking at the carbon emissions and other environmental impacts of the tyre over its lifecycle, including its production, use and disposal options, and how they compare with their alternatives.

A number of other patterns can be observed: many of the environmental goods lists do not include end products but instead focus on components. For example, many of the lists do not include solar panels, but rather components of panels, including photovoltaic panels and electric converters (CSIS, 2021[53]). This reflects how the HS system classifies and categorises products. Another observation concerns scope: the majority of products included in environmental goods lists are industrial products. While some RTAs, such as the Singapore-Australia Green Economy Agreement and the New Zealand-UK FTA, also include agricultural products, these tend to be limited to a handful of products, including wood, bamboo, wool, and flax. Generally, the focus is on products covered by the ten categories in the EGA list - air pollution control, cleaner and renewable energy, energy efficiency, environmental monitoring analysis and assessment, environmental remediation and clean-up, environmentally preferable products, noise and vibration abatement, resource efficiency, solid and hazardous waste management, wastewater management and water treatment (CSIS, 2021[53]).

Moreover, while ELIS and ESSR are often used in the environment domain as a way to ensure environmental credentials or performance of a given product above a certain threshold,[31] there tends to be an absence of ELIS or ESSR to support the identification of a product's environmental characteristics in trade agreements for the purpose of identifying environmental goods. While some RTAs generally include various references to ELIS and ESSR, these tend to be general recommendations outlined in Trade and Sustainable Development (TSD) chapters, but remain recommendations without requiring clear commitments and little permanent evaluation (see Box 4, and UNFSS (2020[33]), OECD (forthcoming[55]) (forthcoming[55])).

However, there are several exceptions to this, including the Comprehensive Economic Partnership Agreement between the European Free Trade Association and the Republic of Indonesia (EFTA-Indonesia CEPA) and the ACCTS. First, the EFTA-Indonesia CEPA conditions preferential market access on palm oil produced in a sustainable way, that is, if it "complies with the laws, policies and practices aiming at protecting primary forests, peatlands, and related ecosystems, halting deforestation, peat drainage and fire clearing in land preparation, reducing air and water pollution, and respecting rights of local and

[30] To note, the Singapore-Australia Green Economy Agreement does not create binding obligations for the Parties.

[31] In particular, ELIS can be mandatory or voluntary, and used to facilitate communication between business to business or business to consumers (See Box 4).

indigenous communities and workers" (EFTA, 2018[56]).[32] As proof of sustainable production, Switzerland requires that the palm oil is certified with a select number of voluntary sustainability standards: the Roundtable on Sustainable Palm Oil (RSPO) Identity Preserved, the RSPO Segregated, the International Sustainability & Carbon Certification (ISCC) PLUS Segregated, and the Palm Oil Innovation Group (POIG) with RSPO Identity Protected and Segregated. These four standards were chosen after the State Secretariat for Economic Affairs (SECO) commissioned a study to assess different certification schemes for palm oil (SWI, 2021[57]). Second, the ACCTS allows a Party to implement measures such as due diligence frameworks or certification schemes to ensure that environmental goods classified under specific harmonized system subheadings (Chapter 44 and subheading 9406.10, as listed in Annex II) are produced sustainably and lawfully (New Zealand Foreign Affairs and Trade, 2024[47]).[33]

Box 4. Interactions between trade agreements and sustainability initiatives

Insights from the OECD report "Towards more environmentally sustainable supply chains: the role of trade agreements and sustainability initiatives"

An OECD report on environmentally sustainable supply chain examines the role of trade agreements and how sustainability initiatives have been incorporated. Drawing on the TRENDS database, the report identifies and analyses 66 trade agreements that contain provisions related to sustainability initiatives.

The report finds that most of the agreements reflecting sustainability initiatives include provisions that recognise their importance and encourage their adoption. Some trade agreements include references to voluntary environmental schemes and guidelines, such as those involving the EU as a party. Other agreements go further by including commitments to ensure that sustainability initiatives effectively contribute to their policy goals, while avoiding becoming unnecessary trade barriers, as in the case of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). There are also more progressive examples as in the Agreement on Climate Change, Trade and Sustainability (ACCTS), which provides voluntary guidelines on environmental labelling schemes.

The analysis shows that designing effective policy mixes to achieve environmentally sustainable supply chains is not easy. Further work could be undertaken to explore different ways to integrate sustainability initiatives into trade agreements.

Source: (OECD, forthcoming[55])

3.2.2 Key challenges, limitations, and considerations for goods

As illustrated in Moïsé and Tresa (2025[10]),[34] identifying characteristics to designate an environmentally friendly good in the context of trade agreements is subject to various limitations. The Harmonized System (HS) is set out in categories as opposed to specific products. Moreover, the HS does not differentiate by a product's end-use, and thus, includes both environmental and non-environmental products in the same sub-heading, as well as products with dual use. For example, mufflers are used in wind turbines to reduce noise, but also be used to reduce noise in aeroplanes. While wind turbines are an environmental good,

[32] Comprehensive Economic Partnership Agreement between the Republic of Indonesia and the EFTA States, Articles 8.10(2):a; and 8.10(2):e, text available at (EFTA, 2018[56]).

[33] The Agreement on Climate Change, Trade and Sustainability, Articles 2.4.3:(a) and 2.4.2, text available at (New Zealand Foreign Affairs and Trade, 2024[47]).

[34] In particular, see Section 2.2 in (Moïsé and Tresa, 2025[10]).

aeroplanes are not (CSIS, 2021[53]). The HS nomenclature also complicates including EPPs in environmental goods list. Similar to end-use-related issues, the HS system does not easily accommodate EPPs due to the lack of specificity in the 6-digit subheadings. This problem is being addressed by including "ex-outs", that is, more specific product descriptions aimed at identifying environmental applications within HS 6-digit subheadings. This can be done at the national level, as countries establish additional subdivisions in national customs nomenclatures, or by amending the HS (Moïsé and Tresa, 2025[10]). Accordingly, to ensure sufficient specificity in the identification of an environmental good, many of the environmental goods lists included in the RTAs covered in this paper include a column labelled “ex-out” and/or “additional product specifications”, to be used as the basis for countries to create ex-outs (see Annex A).

Additional challenges arise in cases where EPPs are connected to PPMs, particularly npr-PPMs (see Box 5). Indeed, even if the HS nomenclature were to allow for differential treatment of EPPs based on their PPMs through ex-outs, it would create a challenge for customs officials to distinguish PPM-based EPPs from non-environmentally friendly alternative products, as they are difficult to visually identify (Moïsé and Tresa, 2025[10]; Steenblik, 2005[58]; 2005[59]). Providing differentiated tariff treatment based on a product’s PPMs, and in particular, npr-PPMs, may also create legal issues within the WTO framework, as it could constitute discrimination (Moïsé and Tresa, 2025[10]). Section 5 below develops policy options to address these challenges.

Another issue concerns how to integrate technological developments into existing lists of standards. While many RTAs include a review process of the environmental goods list (see Annex A), *inter alia*, to take into account advances in available technologies (e.g. UK-New Zealand FTA), they fall short in identifying a specific process for doing so.

Box 5. Trade in environmental goods and Processes and Production Methods (PPMs)

Can “green hydrogen” produced from renewable energy sources qualify as an environmental good and be promoted as a part of trade policy? Such a question is extremely relevant in the context of policymaking in the area of environmental sustainability. Despite this relevance, these kinds of considerations are not as straightforward in the realm of trade rules.

In the context of trade policy, measures that differentiate products or services according to how they are processed or produced, are framed as “processes and production methods (PPMs”). PPMs can be further distinguished into product-related PPMs (pr-PPMs) or non-product related PPMs (npr-PPMs), depending on whether the production method has a measurable impact on the final product or not (Moïsé and Steenblik, 2011[60]). For example, while it is important to distinguish green hydrogen based on renewable energy from conventional hydrogen based on fossil fuels, the chemical composition of the two is exactly the same. Therefore, differentiation on the basis of the way hydrogen is produced would be considered as a "npr-PPM", because such characteristics cannot be distinguished from the physical characteristics of the final product (OECD, forthcoming[61]).

How to treat PPM-based requirements in international trade law (e.g. whether PPMs may be considered in “like products” analysis) constitutes a long-standing debate (Oeschger and Bürgi Bonanomi, 2023[17]). For example, defining environmental goods based on PPMs (in particular npr-PPMs), may potentially be challenging as international trade rules aim to ensure that “like” products are not discriminated. While there is no universal definition of “like” products to date, WTO case law has referred to four factors to determine them, namely: (i) physical properties of the products, (ii) the extent to which the products serve similar end-uses, (iii) the extent to which consumers perceive substitutability of the products, and (iv) the international tariff classification of the products (WTO, 2024[62]). Should products be deemed as “like” products, the corresponding measures would be subject to non-discrimination principles under

WTO law (ibid). However, a PPM-based distinction could still be justified if they fall within the scope of general exceptions (e.g. GATT Article XX).

It is still an open question whether products differentiated by npr-PPMs, such as products with relatively lower carbon footprints (e.g. secondary materials produced from recycling, green hydrogen produced from renewable energy), are considered as "like" products made using conventional methods and with relatively higher carbon footprints (e.g. primary materials, conventional hydrogen). To give an example, so far, there is no clarity from a trade policy perspective whether a product using primary steel is considered "like" to an otherwise similar product using secondary steel. From an environment policy perspective, distinguishing products using secondary steel from primary steel, and giving a premium to the former is critical, as it uses fewer virgin materials and less energy inputs, and is, in principle, more environmentally sustainable. While secondary metals also have environmental impacts, these are generally an order of magnitude lower than those associated with the production of primary metals (OECD, 2019[63]). This is particularly important since secondary metals tend to receive less support than do primary metals, and hence arguably are not on a level playing field (McCarthy and Börkey, 2018[64]).

While it may seem obvious from an environmental perspective that differentiating products on the basis of their carbon footprint or environmental footprint is essential for the transition to carbon neutrality, from a trade perspective, this can only be done provided that the discrimination is not arbitrary or unjustifiable and does not amount to a disguise restriction on trade. For this reason, the ability to differentiate measures for imported products based on their PPMs may not be as straightforward under current trade rules. While many experts and scholars view that distinctions based on PPMs are not a priori violations of WTO commitments (Oeschger and Bürgi Bonanomi, 2023[17]; Baetens, Hoekman and Mavroidis, 2022[65]), the compatibility of product differentiation based on npr-PPMs with trade rules would depend on their detailed framing.

Note: For further discussions of PPMs and trade in environmental goods, see Section 2.2. in (Moïsé and Tresa, 2025[10]).

Environmental goods are also heavily related to environmental services. For example, many environmental services are closely linked to the production and delivery of environmental goods. These include, for example, environmental services, such as assembly and installation, testing and analysis services, educational and advisory services, maintenance and repair or R&D services (Bellmann and Bulatnikova, 2022[4]).

Given the links between environmental goods and services, defining environmental services as a part of trade agreements has also garnered attention. These efforts are further explored in Box 6 below.

Box 6. Defining environmental services in trade agreements

Liberalising trade in environmental services is also an area in which efforts have been made and further developments are underway. Earlier efforts involve the WTO plurilateral negotiations for the Trade in Services Agreement (TISA) (2013-2016), which were not concluded. More recently, a number of RTAs include commitments for environmental services. Many of these RTAs include not only the "core" or "traditional" environmental services, but also focus on additional environmental services. Core environmental services correspond to CPC Division 94 and are also set out in the WTO Services Classification Lists (the W/120 list). These services qualify as environmental services due to their end-use being environmental. Other environmental services are indispensable for the environment, such as wind turbines manufacturing services (OECD, 2025[66]).

For example, APEC has recently endorsed a voluntary reference list of 62 environmental and environmentally related services in 2021 (APEC, 2021[48]). This list includes services that are directly

related to environmental conditions (including CPC Division 94) and services that contribute to the design, construction and operation of facilities or equipment determined to improve environmental conditions. This includes general construction services of dams, given that this can lead to the production of cleaner or renewable energy; general construction of services of irrigation and flood control waterworks, which can contribute to natural risk management; engineering services for water, sewerage and drainage projects, given their contribution to waste management (APEC, 2021[48]).

Similarly, the EU-New Zealand FTA, includes not only environmental services covered by CPC Prov. 94, which includes services based on their environmental end-use, including sewage, refuse disposal, sanitation, cleaning service and exhaust gases, noise abatement, nature and landscape protection services, but also includes a category for circular-economy related services and for manufacturing activities relevant to environmental goods identified in the agreement.[35] In a similar vein, the Australia-Singapore Green Economy Agreement established a voluntary list of 155 environmental services in 2022, which focuses on three different categories of services: one focused on services that are environmentally related in and of themselves, being directly related to environmental outcomes; one group of services which may be environmentally related when contributing to or enabling environmental objectives; and a third group of services that are related to the manufacturing, sale, delivery and installation of environmental goods identified in the environmental good list.

A key challenge to liberalise trade in environmental services in a holistic way includes whether and how to further distinguish environmentally relevant services, such as engineering services, architectural services, construction services, distribution services, and consulting services, that go beyond the traditional classification and may or may not have dedicated environmental purposes (Bellmann and Bulatnikova, 2022[4]). [36] Indeed, similar to goods, a service can have dual use – one with an environmental purpose and another without. For example, engineering services can be used both for wind power projects and for coal extraction. This can be addressed by adding clarifications of climate end-use in schedules of commitment, similar to creating ex-outs in the context of environmental goods definitions (Ecorys, 2023[67]).

This problem has been addressed under the ACCTS, which provides improved access to 110 environmental and environmentally related services (New Zealand Foreign Affairs and Trade, 2024[47]). These services are defined as those that significantly support environmental goals such as climate change mitigation and adaptation, transition to circular economy and pollution prevention by aligning with specific purposes listed in Annex III of the Agreement.[37] It includes environmental services covered under CPC Prov. 94 as well as other services including certain professional services, computer and related services, rental and leasing services and distribution services. The list of environmental and environmentally related services identifies those having a greater risk of significantly harming an environmental purpose in Annex III. Services related to unsustainable logging, mining (including coal, oil, and gas), and exploration or extraction of oil, gas and coal are excluded due to their negative impact on environmental purposes. The list also identifies the services sectors having a greater risk of being related to these activities. Additionally, services linked to non-renewable energy sources or CO2 emissions are excluded.

[35] EU-New Zealand FTA.

[36] The traditional classification refers to Division 94 of the UN Central Product Classification (CPC) developed by the United Nations Statistical Commission. This is generally considered a narrow definition of environmental services, which focuses on the collection, treatment and disposal of liquid or solid wastes.

[37] The Agreement on Climate Change, Trade and Sustainability, Annex IV (15 Nov 2024) text available at: (New Zealand Foreign Affairs and Trade, 2024[47])

3.3 Addressing Non-Tariff Barriers (NTBs) through trade agreements

In order to accelerate the diffusion of environmental goods, policy makers may wish to not only to focus on tariff reduction and market access, respectively, but also to address non-tariff measures (NTMs) that are more trade restrictive than necessary, i.e. non-tariff barriers (NTBs), relevant to environmental goods trade. Indeed, between 1995-2022, there has been an increase in NTMs affecting environmental goods, mainly through the imposition of Technical Barriers to Trade (TBT). Categories that are regulated the most by TBTs include goods from renewable energy plants, cleaner and more resource-efficient technologies, and products (Moïsé and Tresa, 2025[10]).

This highlights the importance of addressing NTMs (or more specifically TBT elements) through RTAs – even if doing so has, so far, taken a back seat compared to reducing tariff levels. That said, a few RTAs aim to address non-tariff measures for environmental goods. For example, RTAs agreed between New Zealand and Chinese Taipei, and New Zealand and the United Kingdom, also aim to address non-tariff measures that may potentially hinder trade and investment in environmental goods. Furthermore, a few RTAs have introduced dedicated chapters and annexes to deal with non-tariff measures and regulatory cooperation related to environmental goods. For example, the EU-Singapore and the EU–Vietnam FTAs both have dedicated chapters addressing non-tariff barriers to trade and investment in renewable energy generation. In addition, the United States – Mexico - Canada Agreement (USMCA) has a dedicated annex attached to its chapter on technical barriers to trade dealing with energy performance standards (Bellmann and van der Ven, 2020[11]). The underlying rationale for including such provisions is to ensure that domestic regulatory requirements concerning these environmental goods are as least trade-distorting as possible, align with existing international standards as appropriate, and aim towards harmonisation, mutual acceptance, and comparable standards to avoid regulatory fragmentation as much as possible (Bellmann and van der Ven, 2020[11]).

4 Comparative overview between environmental labelling and standards, and liberalising trade in environmental goods

Having analysed characteristics and trends with regard to identifying and classification of environmental goods in ELIS, ESSR, and trade agreements, this section compares these different approaches. Doing so will set the scene for identifying how to enhance synergies between these different approaches adopted (which is further developed in Section 5 below).

Several differences can be observed between the approaches adopted in ELIS and ESSR and list of environmental goods in trade agreements. These are set out in more detail in Table 5 (short summary) and Table A A.1 (detailed comparison table) in Annex A.

First, a key difference between ELIS and ESSR, and the approaches adopted to identify environmental goods in trade agreements is the scope of the good. ELIS or ESSR tend to be applied to final goods: washing machines, eggs, chocolate, and furniture. Many of these are consumer goods. By contrast, environmental goods lists in RTAs include many intermediary goods. For example, a large number of goods that are included in the EGA list of November 2016 and RTAs with an environmental goods list focus on components or parts of wind turbines, solar cells, or energy systems. They also include numerous commodities such as nickel, aluminium, or ferroalloys. Many of these are industrial goods, as opposed to final consumer goods. In part, this difference reflects the structure of the HS, which organises products in different categories. It also reflects the fact that starting with APEC, the focus of environmental goods liberalisation negotiations has been on products in which developed nations have a comparative advantage – which includes many industrial products (and components), as opposed to final goods for consumption.

Second, ELIS and ESSR tend to be applied to a much broader set of sectors than environmental goods included in trade agreements. Indeed, ELIS target a broad range of goods, including agriculture and food, textile products, forest products, buildings and furniture, energy, transportation, household appliances, electronics, cosmetics, and cleaning products. By contrast, the majority of the final and intermediate products set out in trade agreements focus on energy (renewable energy and energy efficiency). A lesser number of products also focus on forest products – mostly covering various types of wood and bamboo products; textiles (with an emphasis on jute, flax, coconut and other alternatives to synthetic materials); and transportation (with a focus on electric vehicles and railway infrastructure). Some categories that are popular in the ELIS and ESSR world, like agriculture and food products, or cleaning products, and cosmetics, are almost entirely absent from environmental goods list in trade agreements.

Third, the basis on which a product is designated as an environmental good differs between ELIS and ESSR and trade agreements. ELIS and ESSR tend to zoom in on products that are EPP – in terms of use of natural resources and energy; amount of waste generated along the life cycle; impact on human and animal health; and the preservation of the environment. The end-use of a product, i.e. the environmental

purpose that a product serves, even if it does not exhibit inherently environmental characteristics, is not the main focus of ELIS and ESSR. This stands in contrast to trade agreements, which predominantly focus on end-use as the rationale for including a product in the environmental goods list. Increasingly, however, a subset of environmental goods included in environmental goods list in trade agreements are considered environmental goods because they are EPP.

Fourth, there is a difference with regard to the emphasis on npr-PPMs. As highlighted in Section 0 above, there has been an increase in the application of ELIS and ESSR with regard to npr-PPMs over the years (Gruère, 2013[13]). By contrast, products included in environmental lists in trade agreements, even when the basis of inclusion is because the product is EPP, have adopted a narrower approach: most of them include EPPs based on product characteristics (e.g. energy consumption of a product, recyclability or biodegradability), but not npr-PPMs because the latter is not readily verifiable at the border (Moïsé and Tresa, 2025[10]). Moreover, none of the EPPs set out in RTAs are based on LCAs; rather, they tend to be defined by their superior environmental performance at a particular point in their life cycle.

Fifth, related to the end-use versus EPP distinction*,* the assessment underlying the identification of an environmental good is distinct. ELIS or ESSRs are developed based on self-declaration, certification, or LCAs. Many ELIS are established by civil society, governments, and the private sector, based on ISO standards, that seek to ensure a credible basis for considering these products as environmentally friendly or preferable informing consumer choice. By contrast, in trade agreements, declarations, certifications, LCAs or standards are not used to identify an environmental product. Instead, explanations about the rationale for including a product in the environmental goods list tend to focus on a product's contribution towards an environmental objective (end-use or less polluting alternative in production and consumption) (Moïsé and Tresa, 2025[10]). For example, in the UK-New Zealand FTA, the rationale for including "live plants" in New Zealand-UK FTA is to "promote regrowth and biodiversity of plant life for local agriculture"; "tubes, pipes and hoses for drip irrigation" is included because it "delivers water to the roots of crops to achieve even-spreading and conservation of water"; and "solar films" because they "reduce solar heat gain through windows and improve a window's insulating performance, thus reducing GHG emissions".

EPPs included in environmental goods lists tend to include simple declarations about the environmental benefits of a good; e.g. good A compared to good B. For example, sacks and bags or jute are considered environmentally preferable to synthetic materials because it is biodegradable (Singapore-Australia GEA); bicycles and their spare parts because they "exert positive effect on reducing exhaust emissions from automobiles, air pollution and greenhouse effect, etc." (New Zealand-Chinese Taipei FTA); and various types of wood because they "provide an environmentally preferable alternative due to the natural, renewable and biodegradable nature of bamboo". (Singapore-Australia GEA).[38] As a consequence, the ELIS or ESSR approaches require standard verification tools, such as third-party verification or LCAs. Such verification assessments are not applied to environmental goods lists set out in trade agreements, since the identification and definition of the relevant environmental goods has taken place upstream, at the negotiation stage. The downside of this is that environmental goods lists are less adaptable to evolving environmental challenges.

Sixth, another related aspect concerns the updating and review of the lists developed. This is important to ensure that new technologies are integrated into the ELIS, ESSR, and environmental goods lists. Typically, ELIS and ESSR have built-in processes to review the approach adopted. Various RTAs also identify review

[38] Only one entry in the environmental goods lists reviewed for this paper includes a direct reference to LCA. Specifically, the EGA list suggests including various wood products (HS codes 4407.10, 4408.10, 4418.60) because their life-cycle assessments show that wood is generally better for the environment than other commonly used building materials in terms of embodied energy, air, and water pollution, and greenhouse gas emissions.

of the products listed, in light of continuing technological developments, as set out in Annex A.[39] For example, since 2021, discussions are underway at APEC regarding the need for expanding and updating the environmental goods list originally published in 2012 (APEC, 2021[68]). Furthermore, the New Zealand – UK FTA and the Singapore – Australia Green Economy Agreement both indicate review mechanisms to update these lists. However, trade agreements tend to refer to updates and reviews generally, without setting out a concrete approach on how to do so. This may be due to a preference to keep updates of environmental goods lists in trade agreements separate from renegotiations of these agreements.

Table 5. Main differences between approaches adopted in environmental labelling and standards, and environmental goods lists in trade agreements

Criteria	ELIS/ESSR*	Environmental goods lists in trade
Scope	Broad scope of categories included: agriculture and food, textile products, forest products, buildings and furniture, energy, transportation, tourism, household appliances, electronics, cosmetics, and cleaning products.	Narrower scope of product categories: predominantly energy products (renewable energy, energy efficiency); some forest products (wood and bamboo); textiles (with an emphasis on jute/flax/coconut and other alternatives to synthetic materials); and transportation (with a focus on EVs and railway infrastructure). Categories that are absent: agriculture and food products, household appliances, cleaning products, and cosmetics.
	Final consumer products	Intermediate, industrial goods
Identifying environmentally friendly products	Use of declarations, certifications, standards and LCA to identify an environmental good.	Mostly no use of declarations, standards, and LCA to identify an environmental good.
	Less emphasis on end-use; mostly focused on EPP	Mostly focus on end-use; some focus on EPPs
	Focus on product characteristics and increasingly on npr-PPMs	Mostly focused on product characteristics
Monitoring and verification	Third party verification and monitoring.	No monitoring or third party verification
Review	Depends on the standard: some have detailed approaches to updating standards to reflect new technologies	Most trade agreements have incorporated provisions on the review of the environmental goods lists; but do not identify a specific approach on how to do so.

Notes: *ELIS/ESSR = Environmental labelling and information schemes (ELIS) and environmental sustainability standards and regulations (ESSR). A Detailed comparison of different approaches adopted in ELIS/ESSR and environmental goods list in RTAs are available in Annex A, Table A A.1.
Source: Authors

This comparative overview suggests that ELIS and ESSR are much broader in scope and approach, as well as more diverse, compared to approaches adopted to include environmental goods in trade agreements. In particular, ELIS and ESSR go beyond the approaches adopted by trade negotiators as they focus not only on product standards, but also on npr-PPMs; they focus not only on a subset of products such as energy efficiency and renewable energy, but also on agriculture and food and cosmetics; they identify the environmentally friendly aspect of a product mostly on the basis of the product being an EPP; and not as much on the basis of the product's end-use. Relatedly, the ELIS and ESSR approach puts a premium on assessment methods – with a focus on third-party verifiers or LCA approaches. This is almost

[39] In a related vein, the OECD Combined List of Environmental Goods (CLEG), which was originally created in 2014, is undertaking an update in 2025 to reflect recent developments (Moïsé and Tresa, 2025[10]).

entirely absent in environmental lists in trade agreements. Differences can also be observed with regard to whether the focus is on an intermediate good, or a final product.

Many of these observed differences are connected. For example, the focus on identifying environmental products predominantly based on their end-use reduces the need to establish elaborate assessment methods, especially in situations where dual-use issues are not a concern. Moreover, assessment method procedures are especially critical in identifying EPP, given that this is contingent on the relative performance or production process of one product versus another. This suggests that, should trade negotiators increasingly focus on including EPPs as the basis for their environmental product lists, assessment methods must become increasingly important. In addition, the lack of focus on npr-PPMs is connected to the narrow scope of issues that tend to be included in environmental goods lists. Especially when dealing with agriculture and food products, the differentiating factor between an environmental product and a regular product will predominantly reflect the products npr-PPM – not product specific - related characteristics.

There are many reasons for the different approaches adopted in ELIS and ESSR and by trade negotiators. In part, it reflects the fact that ELIS and ESSR tend to be consumer-oriented information tools developed by various stakeholders, including civil society, private sector entities, and governments, whereas environmental goods lists in trade agreements tend to focus on industrial goods, are developed by government negotiators and are essentially meant to be implemented by government authorities, often at the border. This partly explains why ELIS and ESSR have a broader product scope than environmental goods lists. In addition, in contrast to ELIS and ESSR, intergovernmental rules are constrained by the Harmonized System (HS), whose 6-digit product descriptions are not always sufficiently specific to identify a good based on its environmental characteristics. Specifically, the HS focuses predominantly on products' physical characteristics; and not on the PPM or end-use (see Box 7) because of the potential legal and practical challenges. Consequently, ELIS and ESSR can encompass broader environmental considerations across a wider range of products, including their carbon and environmental footprints. In contrast, environmental goods lists in trade agreements tend to be more limited, mainly relying on physical product characteristics that can be easily verified at the border.

In addition, the parties involved in the negotiations of the RTAs examined in this paper are mostly OECD members, with countries like New Zealand being heavily represented. This too, shapes the type of goods trade negotiators have included in environmental goods lists.

Moreover, the differences observed between ELIS and ESSR and environmental goods lists also reflect siloed policymaking, as trade negotiators and those developing and enforcing ELIS and ESSR tend to have limited interaction. As a result, the trade negotiations and environmental standard-setting tend to develop in parallel without sufficiently considering important principles and practices from the other side. This creates the risk that the approaches adopted by the trade and environmental policy sphere are less effective in advancing environmental objectives than they could be.

Box 7. The Harmonized System (HS) and Processes and Production Methods (PPMs)

The Harmonised Commodity Description and Coding System “Harmonized System” is an international nomenclature of trade flows of goods developed by the World Customs Organization (WCO). It covers over 5,600 commodity groups, each identified by a six digit code, to provide a uniform classification. The HS classification is used by over 200 countries and economies to structure their Customs tariffs and to gather international trade statistics. More than 98% of goods in international trade are classified according to the HS (WCO, 2024[69]).

HS codes that distinguish products on the basis of Processes and Production Methods (PPMs) are historically very rare. However, a few examples exist, as follows.

First, hand-made rugs (HS 570210 — Kelem, Schumacks, Karamanie, and similar hand-woven rugs) have been agreed to have a dedicated classification. This entry for hand-made rugs, distinguishes goods on the basis of how they are produced and would qualify as a PPM. Nevertheless, it is not as clear if these products would qualify as a npr-PPM as one could argue that the production method clearly affects the end product (e.g. a trained customs agent can easily distinguish hand-made from machine-made rugs).

Second, natural honey (HS 040900) has a separate classification from artificial honey and its mixtures with natural honey (HS 170290). Similar to the previous example, this entry distinguishes how the honey was produced, and hence can arguably count as PPMs. Nevertheless, natural honey can be distinguished from artificial honey on the basis of specific criteria and therefore these characteristics may not qualify as npr-PPMs as they are traceable in the final product.

At the non-harmonized level (i.e. 8 digits and beyond), a few countries have introduced special categories for certified organically grown products (these entries are largely introduced for statistical purposes only and not for tariff differentiation). For example, the United States has 76 dedicated entries at the 10 digit level for the import and export of organic products, such as certified organic fruits, vegetables, coffee and tea (USDA, 2015[70]). Similarly, Canada has 270 dedicated entries at the 12-digit level for organic processed products (CFIA, 2021[71]). As organically grown products are difficult to distinguish from their non-organic equivalents by their physical appearance, this distinction can be considered as npr-PPMs. Such npr-PPM characteristics as "organically grown products" are often verified by certification schemes.

From the examples above, it appears that, at the HS level, HS codes that distinguish PPMs are so far limited to pr-PPMs, and there are no dedicated HS codes that distinguish goods based on npr-PPMs. This may be because, in the context of customs controls, the goods in question need to be verifiable by inspection of the physical characteristics of the goods at the border and, if not, additional analysis or laboratory testing by customs or other characteristics need to be used for verification (WCO, 2022[72]). However, at the non-harmonized level, there are dedicated entries for goods based on npr-PPMs that are also checked by Customs based on certification schemes. As these examples show, it is not yet clear or decisive whether HS codes can or cannot distinguish products on the basis of npr-PPMs.

Note: For further details on HS and PPMs, see Section 2.2.2 in (Moïsé and Tresa, 2025[10]).
Source: Author based on (Steenblik, 2005[58]; Moïsé and Tresa, 2025[10]).

5 Enhancing synergies between environmental labelling and standards, and environmental goods lists in trade agreements

This section sets out recommendations on how to enhance synergies between ELIS and ESSR environmental goods approaches, and environmental goods lists set out by trade negotiators. This builds on work by various scholars and institutions that examine the possible integration of sustainability initiatives and trade policy.[40]

The first subsection focuses on what trade negotiators can learn from the approaches adopted in ELIS and ESSR, as well as ERPP, and highlights ways in which trade negotiators could consider integrating ELIS and ESSRs in their environmental goods lists. The second subsection zooms in on ways in which international trade rules can better inform the development of ELIS and ESSR.

5.1 Integrating the concepts of environmental labelling and standards to complement environmental goods lists in trade agreements

5.1.1 Complementing the scope of environmental goods lists by considering npr-PPMs

A major limitation in environmental good lists in trade agreements concerns their lack of focus on npr-PPMs. Even with respect to products that are included in environmental goods lists on the basis of their EPP, the EPP tends to be defined on the basis of product characteristics – not npr-PPMs (Moïsé and Tresa, 2025[10]). This differs from the main trends in ELIS and ESSR, which focus increasingly on a product's npr-PPM, or LCA. Indeed, as npr-PPMs such as carbon footprint, the use of secondary materials derived from recycling processes, and deforestation-free standards are increasingly important to promote environmental sustainability, trade policy makers could perhaps consider how such concepts and approaches can be incorporated into discussions on promoting trade in environmental goods.

Doing so requires navigating a number of hurdles. Enabling the inclusion of products on the basis of their npr-PPMs requires addressing the limitations imposed as a result of the HS code, that is, the 6-digit HS descriptions focus on the physical characteristics of a product - not on the way in which the products have been produced. In other words, the HS code is insufficiently specific to enable npr-PPM product differentiation. In this context, many WTO Members, if not most, have sought to avoid defining

[40] For example, see (Bermúdez and Sarmiento, 2024[80]; Pauwelyn, 2024[79]; OECD/ITC, 2024[16]; OECD, 2022[26]; forthcoming[55]).

environmental goods that are considered environmentally preferable on the basis of their npr-PPMs (WB, 2008[73]; Steenblik, 2005[58]).

Two possible approaches are available to address this: one is to amend the HS, and the other is to create new national tariff lines, also known as ex-outs, that set out the additional detail relevant to the npr-PPM environmental approach. While these approaches may not be easy or practical for all traded goods and for all trade agreements, such an approach may be explored to reflect detailed product identification for certain commodities of common interest.[41]

The former approach would rely on what is permissible under the multilateral trading regime and respective HS codes and their reviews. Reviews of the HS under the World Customs Organization (WCO) run in a five-year cycle (WCO, n.d.[74]). Reviews of the HS address technology developments and changes in trade patterns and policy requirements (Deere Birkbeck, 2021[75]). Recent updates have included new codes for secondary goods, such as electronic waste, or carbon intensity of electricity generation (Moïsé and Tresa, 2025[10]).[42] While HS codes that differentiate goods on the basis of PPMs are rare, there are some existing examples that differentiate how the product was produced, such as hand-made versus machine made, or naturally harvested versus artificially produced (see Box 7). These examples possibly suggest that there could be increasing receptivity towards reflecting PPMs based on EPPs. However, updating the HS code is a relatively lengthy process: it took almost two decades to develop the electronic waste (e-waste) updates (Secretariat of the Basel Convention, n.d.[76]).

The latter approach in considering npr-PPMs characteristics is similar to creating ex-outs established to address dual-use challenges. For npr-PPMs, establishing ex-outs must be guided by some internationally accepted or scientifically identified approach of what kind of threshold or standard to impose to differentiate the environmental product from the non-environmental product. For instance, with regards to cotton, an ex-out could be developed for cotton that uses less water than regular cotton; but there must be agreement on the water use threshold, for instance, cubic metres of water per kilogramme of fabric. Furthermore, for products produced in a deforestation-free way, the ex-out must be connected to a deforestation standard. Another example could be around the threshold of what would qualify as “clean” hydrogen produced from renewable energy for decarbonisation (OECD, forthcoming[77]). This could be facilitated by linking the ex-out to ELIS and ESSR (this is further developed in Section 5.1.2 below).

Differentiating products on the basis of their npr-PPMs is also connected to legal ambiguity. Under the existing jurisprudence of the WTO, where a product is treated differently from another product on the basis of its npr-PPM, it could be considered discrimination under GATT Articles I and III. Such discrimination could potentially be justified under the general exceptions set out in GATT Article XX or equivalent provisions in RTAs. Some scholars argue that WTO compatibility issues may become less problematic if the identification of an environmental good based on the npr-PPM was done in line with the Technical Barriers to Trade (TBT) Agreement (Howse and van Bork, 2006[78]). While the existing legal debate appears to be converging on the WTO compatibility of npr-PPMs, as long as they are applied in a non-discriminatory manner and are the least trade-restrictive means necessary to achieve a specified regulatory objective, the compatibility of such measures with trade rules would depend on their detailed framing and would be associated with legal uncertainty (Oeschger and Bürgi Bonanomi, 2023[17]; Baetens, Hoekman and Mavroidis, 2022[65]).[43]

[41] For example, such an approach may be worth exploring for commodities such as “clean” hydrogen produced from renewable energy for decarbonisation. Indeed, some trade agreements list “hydrogen” as an environmental good that is subject to an ex-out dedicated for “clean” hydrogen (e.g. Singapore-Australia Green Economy Agreement).

[42] To clarify, waste and scrap is not considered as an environmental good in the updated CLEG list (Moïsé and Tresa, 2025[10]).

[43] See also (OECD, forthcoming[55]) for a discussion on WTO compatibility of npr-PPMs.

Finally, regulating products and enabling product differentiation on the basis of npr-PPMs can create a challenge with respect to customs officials and their ability to understand the nature of the product. Indeed, whether a product has a high or low carbon footprint, or whether illegal deforestation occurred in its production, cannot be physically detected at the border. This has traditionally been the main reason under GATT for not allowing countries to impose npr-PPMs on imports (Pauwelyn, 2024[79]). However, the challenge for customs officials to inspect elements of products that cannot be physically detected in the imported product is not a new problem. It has also presented itself with regards to rules of origin, or veterinary certificates (ibid). Thus, the fact that npr-PPMs cannot be physically detected should not be an insurmountable challenge to adopt this distinction more broadly in the context of trade agreements. Indeed, there appears to be a trend away from physical inspection of goods on a transaction basis toward verification and control of firms and operators after goods are released (ibid). This can be done on the basis of product declarations, certifications, and LCA assessments. Linking the environmental product to an existing ELIS and ESSR could be a way to address this. However, doing so would mean providing greater control to standard-setting organisations and related conformity assessment procedures.

Alternative options could be to make the importer responsible (heightened due diligence requirements) and shift controls from border transactions to the verification and control of the firm (or a combination of both) (OECD, 2022[26]). This is aligned with the practices that are being adopted in the context of EU Flagship regulations such as the Carbon Border Adjustment Mechanism (CBAM) and the EU Deforestation Regulation (EUDR), both of which shift controls on product inspection on a transaction basis at the border to including also producer and operator inspection at the firm or system level, both before and after importation (Pauwelyn, 2024[79]). Interconnected IT systems between countries will be critical to ensure that the data received is accurate (ibid). Countries may also incorporate references to ELIS and ESSR, many of which are national or regional. This is further elaborated upon in Section 5.1.2 below.

5.1.2 Using ELIS and ESSR to complement environmental goods lists in trade agreements

The previous section has suggested that using ELIS and ESSR to complement environmental goods lists can address many challenges relevant to the definition of products in environmental goods lists in trade agreements based on their npr-PPMs. Indeed, it can potentially address some of the legal challenges;[44] it can help identify specific thresholds and standards of npr-PPMs; and it can address issues related to border assessments.

The benefits of using ELIS and ESSR in trade agreements, to complement environmental goods lists are not limited to npr-PPMs. Many ELIS and ESSR are connected to auditing and verification processes to ensure that the environmental benefit is not overstated. No similar verification or assessment processes, whether third-party verifiers or LCA, are currently included in trade agreements that identify environmental goods.[45] Considering sustainability standards and criteria could be a possible way to link trade negotiations on environmental goods to assessment procedures.

Many ELIS and ESSR have adopted a process to ensure their approach remains updated in the context of the development of technological advancements, which is often missing, or not developed with sufficient specificity, in trade agreements. In the case of the EU Ecolabel, the criteria correspond indicatively to the best 10 to 20% of the products available in the European Economic Area in terms of environmental

[44] To note, the legal clarity of npr-PPMs under trade rules would still depend on their detailed framing (Oeschger and Bürgi Bonanomi, 2023[17]; Baetens, Hoekman and Mavroidis, 2022[65]). For a further discussion on WTO compatibility of npr-PPMs, see (OECD, forthcoming[55]).

[45] This reflects the current approach to negotiated lists of environmental goods, which often focus on end-use or less polluting alternatives in production and consumption that are easily verifiable at the border and do not require separate verification mechanisms.

performance at the moment of their adoption (EC, 2024[28]). Linking an environmental good to one that is certified EU Ecolabel would avoid the need to continue to update the standard to reflect new technological advancements. For those EPPs defined by an existing standard, countries may agree that product specifications will automatically update to reflect developments taking place within the existing standard to take into account rapid technological changes (Steenblik, 2005[58]; 2005[59]). However, a key drawback of this approach is the burden of communicating changes in the standard to customs agents, as well as relinquishing control of key technical criteria to another body, especially when such a body is private (Steenblik, 2005[58]).

Practically, and with reference to ERPP practices, there are different ways in which parties to a trade agreement can integrate ELIS and ESSRs. First, trade negotiators can opt to select key environmental criteria for specific products that must be adhered to in order to be eligible for preferential tariff treatment. For example, for textiles, this could include references to the use of fertiliser and pesticides, GHG emissions and water in the production of the product (npr-PPM), the recycled content of a product, and the recyclability of a product. In addition, there could be a clarification that compliance with specific ELIS or ESSR would provide sufficient levels of assurance for compliance with the criteria identified. This is the approach the EU has adopted with regard to ERPP and could be modified to be integrated into negotiations about environmental goods lists.

Second, governments can determine to integrate ELIS and ESSR more directly. For example, a number of different standards could be identified as meeting the sustainability criteria, giving preferences to multi-attribute life-cycle-based standards or ecolabels that address a key impact area and include third-party verification (EPA, 2024[25]). To ensure non-discrimination, where governments decide to link environmental goods to specific ELIS or ESSR, it is imperative that they also include “or equivalent”, similar to EU ERPP practices that identify a specific label. Doing so, however, would require the establishment of a technical expert group to identify equivalence between the different standards. This would be especially the case if the ELIS or ESSR included is a national or regional standard, which could create discrimination if that standard were not commonly applied in one of the trading partners or if the application of that standard would be very costly. With regards to integrating ELIS or ESSR in the WTO context, Members will likely oppose using national or regional standards.

More generally, the WTO could provide guidance that trading partners seeking to integrate ELIS or ESSR could follow. These guidelines could take inspiration from ERPP approaches to integrating ELIS/ESSR, including by focusing on certain principles that the standard must conform to be accepted in the context of ERPP.

While such approaches may not be easy or applicable for all products and for all trade agreements, there may be scope to use ELIS and ESSR to inform environmental goods lists for commodities of common interest or common priority to the parties of a trade agreement. Identifying specific ELIS or ESSR will be easiest to do in areas where consolidation has taken place and a small number of standards dominate. For example, this would be the case for the Forest Stewardship Council (FSC) standards and Programme for the Endorsement of Forest Certification (PEFC) standards for forestry products. It could also be relatively easy to do in situations where comparable standards and mutual recognition of labelling schemes have been achieved for a number of schemes.[46] However, it would be more difficult to do so for sectors marked by strong competition between labels and standards, such as apparel products, an industry that is

[46] Eco-labels are awards, seals or logos for products that fulfil a set of environmental criteria aiming to inform consumers about their ecological choices, and they are often voluntary labelling schemes applied to products certified by a third-party. As an example, mutual recognition of labelling schemes (i.e. agreement between two or more schemes as being equivalent to one another) is achieved between the Japanese Eco-Mark, Chinese Taipei's Green Mark, Thailand's Green Label, New Zealand's Environmental Choice, and the Nordic Swan. There are other examples on partial recognition as well as mutual recognition of conformity assessment procedures (for details see (Yamaguchi, 2024[110])).

marked by high levels of industry fragmentation (Prag, Lyon and Russillo, 2016[5]). In this case, trading partners could seek to use and establish common criteria for an ELIS or ESSR to comply with in order for it to be incorporated, similar to the approach taken in EU procurement. Alternatively, trading partners could choose a number of standards that they consider to be equivalent in level of environmental protection. This was the approach adopted by SECO, referenced above, which identified four existing palm oil sustainability standards that companies could comply with to benefit from the preferential tariff rates under the EFTA-Indonesia CEPA.

Integrating private and voluntary standards into trade listings is not an entirely novel idea. Indeed, the WTO's plurilateral Information Technology Agreement (ITA) provides an example – albeit not in the environmental goods context – of parties integrating a private international standard in the definition of a good covered by the ITA. Specifically, it refers to a standard established by the Personal Computer Memory Card International Association (PCMCIA), noting for Item No. 199: "Printed Circuits Assemblies for products falling within this agreement, including such assemblies for external connections such as cards that conform to the PCMCIA standard…:" (Steenblik, 2005[58]). Moreover, in the context of Environmental Goods and Services negotiations in November 2009, Japan highlighted that there are challenges related to defining "energy efficiency" and proposed that "some products can be identified by using an internationally harmonised energy performance standard and labelling system, such as "Energy Star", the US labelling system which has also been adopted by Australia, Canada, EFTA countries, the EU, Japan, New Zealand, Chinese Taipei.[47]

Outside the context of the WTO, the EFTA-Indonesia CEPA provides an example of how to make tariff reductions for palm oil contingent on PPMs. Specifically, it provides that palm oil imported from Indonesia can receive the preferential tariff under the CEPA if "it complies with the laws, policies and practices aiming at protecting primary forests, peatlands, and related ecosystems, halting deforestation, peat drainage and fire clearing in land preparation, reducing air and water pollution, and respecting rights of local and Indigenous communities and workers." To address implementation under the EFTA-Indonesia CEPA, as mentioned in Section 3.2.1 above, Switzerland requires proof of sustainable production, which must be certified by a select number of voluntary sustainability standards.[48] In other words, certified palm oil under specified Voluntary Sustainability Standards (VSS) are eligible for preferential treatment under the EFTA-Indonesia CEPA (in the case of reaching the Swiss market). Thus, ELIS are linked to preferential market access, even if ELIS are not identified within the actual trade agreement. It should be noted that Switzerland's preferential tariff for palm oil under the EFTA-Indonesia CEPA was made possible in a specific context, including the following conditions: (i) sustainability concerns crystallised over a specific product, namely palm oil, (ii) the tariff applicable to this product prior to the conclusion of the FTA was relatively high, giving a strong incentive to reduce the tariff in the FTA, (iii) a number of credible and well-established VSS were already in place, and (iv) Indonesia is a long-standing partner country of Switzerland for economic development cooperation, which provides an opportunity to further support sustainability improvements in this sector. Notwithstanding these conditionalities, similar efforts could be considered to link ELIS or ESSR with preferential market access under trade agreements, such as through reduced or eliminated tariffs, or as a conditional way to lift quotas and quantitative restrictions, and for a specific subset of products of common interest, between the parties to an agreement.

In such an approach, it is crucial to adopt mechanisms to ensure that the certification, verification and conformity assessment procedures of ELIS and ESSR follow due process, and that false claims and fraud are avoided. Distinguishing between credible and non-credible ELIS and ESSRs would be key to using

[47] See for example: Japan's Proposal on Environmental Goods and Services, TN/TE/W/75, 27 November 2009 (Government of Japan, 2009[111]).

[48] Specifically, Switzerland commissioned a study to assess different certification schemes for palm oil and ultimately settled on four: the RSPO Identity Protected, the RSPO Segregated, the ISCC Plus Segregated, and the Palm Oil Innovation Group (POIG) with RSPO Identity Protected and Segregated.

them as a tool to promote sustainable trade (Bermúdez and Sarmiento, 2024[80]). Indeed, in the realm of biofuels, fraudulent claims have been reported in terms of the integrity of the feedstock used in imported biofuels and the true origin of the fuels, raising concerns over private certification schemes in this area (Pauwelyn, 2024[79]). To this end, facilitating the effective enforcement of sustainability requirements on imports will become increasingly important, such as through border co-operation between customs and enforcement agencies, co-operation between market surveillance authorities, digital solutions and information sharing, stakeholder awareness and mechanisms for public complaints, and capacity building and sufficient resources for enforcement (Pauwelyn, 2024[79]; Yamaguchi, 2023[81]). In addition, as indicated by Bermudez and Sarmiento (2024[80]), there can be ways to utilise available tools to enhance environmental credibility, such as the ISEAL Credibility Principles (ISEAL, 2024[82]), or the ISO 14000 standards for promoting effective management systems in organisations (ISO, n.d.[83]). Furthermore, OECD (2024[84]) work on due diligence and responsible business conduct identifies the possibility for governments to apply OECD "alignment assessments" to assess the due diligence and credibility of sustainability claims. This assessment includes three main approaches of: (i) standards assessment (e.g. cross checking the sustainability standard against the OECD Due Diligence Guidance), (ii) implementation assessment (e.g. cross checking the initiatives monitoring, oversight and accountability mechanisms, and due diligence activities that are carried out), and (iii) credibility assessment (e.g. cross checking the initiatives overall credibility, governance system, external accountability and stakeholder involvement, based on the principles of good governance set out in the OECD Responsible Business Conduct Guidance) (ibid).

Irrespective of the approach adopted, integrating ELIS and ESSR into environmental goods lists will require the establishment of an institutional framework, either a review committee or an expert technical group, that could maintain control over technicalities relevant to ELIS and ESSR, and address issues related to comparable standards requests (Moïsé and Tresa, 2025[10]; Steenblik, 2005[58]). Moreover, integrating ELIS and ESSR into trade agreements can increase transaction costs, which further highlights the need to respect key trade concepts, such as transparency, non-discrimination, and proportionality, as well as capacity building to ensure the establishment of quality infrastructure, including carrying out conformity assessments (van der Ven, 2024[85]; World Bank, 2019[20]).

Integrating ELIS and ESSR into environmental goods lists can also be considered as one example in the broader context of incorporating sustainability initiatives in trade agreements. A parallel OECD (forthcoming[55]) study investigates the role of sustainability initiatives and trade agreements to establish environmentally sustainable supply chains (see also Box 4).

5.2 Ensuring environmental labelling and standards do not become unjustified barriers to trade

The previous subsection looked at how to use ELIS and ESSR approaches to enhance liberalising trade in environmental goods lists included in trade agreements. This section focuses on ensuring that the development and implementation of ELIS and ESSR take into account relevant international trade rules and principles that aim to facilitate trade.

Domestic policies for environmental sustainability, such as ELIS, ESSR, and ERPP, aim to disincentivize environmentally harmful practices while promoting sustainable practices to advance legitimate policy objectives. However, they may also become unjustified barriers to trade if they do not follow international trade rules set out in WTO Agreements. Therefore, it imperative that ELIS, ESSR and ERPP are designed in line with key trade principles such as: (i) transparency, (ii) non-discrimination, and (iii) least trade-restrictiveness as a means to achieve the specified regulatory objective, as enshrined in the GATT, the WTO Technical Barriers to Trade (TBT) Agreement and the WTO Government Procurement Agreement (GPA).

It is also incumbent upon that those developing ELIS and ESSR base their standards on relevant international standards, where they exist, in accordance with the WTO TBT Agreement. This would encourage the harmonisation of standards while minimising costs and trade friction for producers navigating numerous markets. Moreover, in developing new ELIS and ESSR, governments should ensure they comply with the Six Principles for the Development of International Standards, Guides and Recommendations, which include transparency, openness, impartiality and consensus, effectiveness and relevance, coherence and development (WTO, 2000[86]).

Furthermore, in the context of RTAs, there is scope to develop more specific guidelines for voluntary ecolabelling. For instance, the ACCTS includes a chapter on ecolabelling, which aims to "inform the development and implementation of high-quality and high-integrity voluntary ecolabeling programs" to promote transparent and sustainable trade. It includes a commitment from the parties to ensure that ecolabels are not misleading; assist in differentiating between environmentally preferable goods and services in a meaningful way; and strive for a holistic approach (by considering aspects other than sustainable development objectives). Under the guidelines, ecolabels should also be based on, and take into account, scientific and technical information; and should be developed and implemented using a fair and transparent process. In developing these ecolabels, parties should also follow several key WTO principles; foster best practice and improvement over time; take into account the most significant environmental impacts of a product's life cycle; and should minimize costs. Finally, if third party verification is required for the ecolabels, this must be done by an independent accrediting body (New Zealand Foreign Affairs and Trade, 2024[47]).

In addition, governments can minimise trade frictions generated through the multiplication of ELIS and ESSR by applying the principle of equivalence, i.e. a country recognises multiple standards on conformity assessment, even if they are different (OECD, 2025[87]).[49] Trade friction can be further minimised by facilitating the acceptance of the results of conformity assessment procedures, for example, through the approaches identified by the TBT Committee. To this end, the WTO "Indicative List of Approaches to Facilitate the Acceptance of the Results of Conformity Assessment" (WTO, 2022[88]), [50] as well as the "Guidelines on Conformity Assessment Procedures" (WTO, 2024[89]),[51] both developed by the WTO TBT Committee, can serve as a reference for members to consider when facilitating the acceptance of conformity assessment results of other members. In practical terms, this can be done through: mutual recognition agreements; cooperative arrangements between domestic and foreign conformity assessment bodies; the use of accreditation to qualify conformity assessment bodies; the designation by governments of specific conformity assessment bodies; a government's unilateral recognition of results of foreign

[49] In a similar vein, the OECD (2024[112]) report on "alignment assessments" unpacks the opportunities and challenges related to mutual recognition and interoperability of sustainability initiatives.

[50] The WTO "Indicative List of Approaches to Facilitate the Acceptance of the Results of Conformity Assessment" include: (i) mutual recognition agreements for conformity assessment to specific regulations; (ii) cooperative (voluntary) arrangements between domestic and foreign conformity assessment bodies; (iii) use of accreditation to qualify (or recognize) conformity assessment bodies; (iv) designation by governments of specific conformity assessment bodies, including bodies located outside their territories, to undertake conformity assessment; (v) government's unilateral recognition of results of foreign conformity assessment; and (vi) relying on manufacturers' or suppliers' declaration of conformity (SDoC) to the specified requirements (WTO, 2022[88]).

[51] The WTO "Guidelines on Conformity Assessment Procedures" establishes non-prescriptive practical guidelines to support regulators in the choice and design of appropriate and proportionate conformity assessment procedures. It aims to provide key guidance principles and best practices to ensure that conformity assessment procedures are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade. Several elements, which are neither exhaustive nor mutually exclusive, are considered in these guidelines, such as market surveillance, international standards, acceptance of results, transparency and consultation, national coordination, and the development dimension (WTO, 2024[89]).

conformity assessment; and the possibility of relying on the manufacturer's or supplier's declaration of conformity (WTO, 2019[90]). These are key concepts found in the TBT Agreement that tend to be included more stringently in RTAs (Bellmann and van der Ven, 2020[11]).

The OECD (2022[91]) Council Recommendation on International Regulatory Cooperation can serve as a reference to promote the interoperability of environmental requirements, through international cooperation between countries as well as adopting good regulatory practices domestically. OECD research shows that international regulatory cooperation can lead to a reduction in trade costs related to: (i) gathering information on regulatory requirements in target markets, (ii) adjusting the specification of goods and services to meet different regulations, and (iii) undertaking various conformity assessment procedures (OECD, 2017[92]).

These principles can and should be reflected in RTAs, including by going beyond similar concepts that are set out in the WTO TBT Agreement, as exemplified by the ACCTS chapter on ecolabelling (New Zealand Foreign Affairs and Trade, 2024[47]). Doing so will promote the uptake of the development of high-quality and high-integrity of sustainability standards and initiatives, while enhancing interoperability. In particular, it would be important to enhance transparency in the methodologies used to calculate LCA, for example, which vary across standards, sectors, and governments (Prag, Lyon and Russillo, 2016[5]).

Finally, the proliferation of standards could disadvantage smaller producers, particularly in developing countries, due to the difficulty of meeting certification criteria and associated costs (van der Ven, 2024[85]). This is particularly the case with regards to products based on renewable natural resources, including agriculture and fish. Indeed, complying with ELIS or ESSR or both can be prohibitively expensive, especially for smaller producers. Smaller producers in developing countries can also experience significant knowledge gaps. For example, in South Africa, farmers struggled to obtain Forest Stewardship Council ("FSC") certification due to a lack of available information on how to prepare for certification, highlighting the knowledge gap that can act as an additional barrier (Morris and Dunne, 2004[93]). In turn, ELIS and ESSR risk reinforcing existing inequalities in international trade by favouring larger, well-resourced producers while marginalising smaller suppliers, particularly in developing economies. These concerns could be mitigated by ensuring procedures and costs are reasonable and accessible (Prag, Lyon and Russillo, 2016[5]).

6 Conclusion

This report has explored how environmental labelling and information schemes (ELIS) and environmental sustainability standards and regulations (ESSR) already adopted worldwide today can inform efforts to liberalise trade in environmental goods. In particular, it has identified various ways in which the approaches adopted to develop ELIS and ESSR differ from approaches adopted by trade negotiators to define environmental goods. This report has found that ELIS and ESSR tend to be much broader in scope compared to environmental goods lists in RTAs. It has also highlighted key differences in the approach adopted to identifying the environmentally friendly aspect of a product. While ELIS and ESSR tend to be developed based on the use of declarations, certifications, standards and LCAs, these mechanisms have not been used so far to inform the lists of environmental goods negotiators include in RTAs. Moreover, in contrast to the approach adopted in many ELIS and ESSR, trade agreements tend not to include monitoring or third-party verification of standards and do not outline specific review approaches to ensure that standards remain up to date. Moreover, this report has highlighted the general absence of npr-PPMs in environmental goods list in RTAs.

One way to bridge the gap between ELIS and ESSR on the one hand, and environmental goods lists in trade agreements on the other hand, could be to consider including references to ELIS and ESSR in trade agreements. Doing so would provide an opportunity to complement the scope of environmental goods lists in RTAs, while enabling the incorporation of practices such as LCAs, verification and monitoring, and review. Several approaches have been adopted to integrate ELIS into trade agreements and their implementation, including the EFTA-Indonesia Agreement and palm oil certification, as well as the reference to a private standard in the ITA.

However, such approaches also come with some caveats. To determine whether ELIS and ESSR can serve as viable options to facilitate the inclusion of lists of environmental goods in RTAs, several issues and knowledge gaps remain to be addressed. Further exploration would require comprehensive studies on the impact of ELIS and ESSR on broader sectors, particularly in developing countries, as well as on the conditions necessary to consider them as effective alternatives for promoting sustainable trade.

Indeed, the inclusion of ELIS and ESSR in discussions on environmental goods may also not be straightforward, given the technical, political, and legal challenges that must be addressed in doing so, as well as, in the case of npr-PPMs, the complexity they bring to border control, the verification and conformity assessment for compliance. As illustrated in Steenblik (2005[58]), “The simplest and most straightforward way for countries to liberalise a list of goods would be to agree to include in that list only goods described under the Harmonized System at the time when the agreement is concluded, thus obviating any need to change either the HS or national customs nomenclatures”. For this reason, policymakers may consider the promotion of trade in environmental goods important, while recognising it is unlikely to be a silver bullet to address all aspects of environmental sustainability, and will need to be complemented by other approaches, including domestic policies that promote environmental sustainability of products and supply chains, such as labelling schemes, sustainability standards and government procurement. Given that such an approach would imply a layer of trade policies and domestic policies, it would be extremely important to reaffirm the mutual supportiveness of trade and environment policies to ensure that trade will help rather than hinder the environment and to ensure that environment policies do not act as disguised protectionist measures to international trade. Finding synergies between the two domains could be beneficial, both to

enhance the effectiveness of environmental standards and to reduce trade barriers. For this reason, policy makers should consider international rules in domestic policymaking to ensure transparency, non-discrimination and proportionality of domestic measures (i.e. non-tariff measures), to limit trade effects and to maximise synergies to benefit from trade and economies of scale.

While this report has demonstrated the importance of breaking down the silos between approaches to promoting the environmental sustainability of products and supply chains and approaches to promoting trade in environmental goods, it also has some shortcomings. This report has not looked into generating a reference list of environmental goods. A reference list of environmental goods, namely the updated OECD Combined List of Environmental Goods (updated CLEG) is undertaken by a parallel report (Moïsé and Tresa, 2025[10]). There are also efforts at the OECD to build on the newly developed taxonomy of voluntary sustainability initiatives (OECD/ITC, 2024[16]) and on existing data covering sustainability initiatives to study their distribution along supply chains (OECD, forthcoming[55]). Additionally, the OECD is investigating the challenges and opportunities of different approaches to integrating sustainability initiatives into trade agreements (OECD, forthcoming[55]). These workstreams are complementary and, together, can provide information on how governments can integrate environmental sustainability considerations into trade agreements.

Finally, there are several issues and remaining knowledge gaps beyond the reach of this report. This report has looked only at a subset of examples of ELIS and ESSR, but these are not necessarily representative of all standards, which may be captured in future studies to extend the work on the OECD/ITC (2024[16]) conceptual framework of sustainability initiatives. There can also be further opportunities to explore potential synergies with on-going OECD work such as the flagship project on the Inclusive Forum on Carbon Mitigation Approaches (IFCMA) and its work on carbon intensity metrics (OECD, 2024[94]). Moreover, as alluded earlier, the report does not extensively focus on the proposed approach and the impact on developing countries and least developed countries (LDCs), that would merit follow up studies. Finally, the report focuses predominantly on goods, without much consideration on services. These limitations can be addressed in further research.

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Annex A. Overview of environmental labelling and standards, and environmental goods lists in trade agreements

Table A A.1. Detailed comparison of different approaches adopted in ELIS/ESSR and environmental goods lists in trade

Agreement / Criteria	ELIS/ESSR	APEC (2012)	EGA (2014-2016)	New-Zealand Chinese Taipei Economic Cooperation Agreement (2012-2013)	UK-New Zealand FTA (2020-2022)	EU-New Zealand FTA (2018-2022)	Singapore-Australia Green Economy Agreement (2021-2022)	ACCTS (2024)
Environmentally friendly aspect of the product								
End-use	This is rare. ELIS are generally not developed to identify that a product can be used to contribute to an environmental outcome, but instead, they aim to differentiate between the environmental performance/footprint of different products.	All products except one	Most products on list	Most products on list	Most products on list	Only end-use (geothermal, hydro, solar, and wind energy; Energy efficiency)	Most products on list (contribute to reducing air pollution; protection natural resources; mitigation GHG emissions; efficient and sustainable use and production of resources; reduction in negative effects on human health/ environment; measurement; accounting and monitoring of the environment; sustainable and resilient food systems/agricultural practices.)	Many products on the list (contribute to climate change mitigation and adaptation; pollution prevention and control; the sustainable use, protection or restoration of natural resources, biodiversity and ecosystems; transition to a circular economy; sustainable development objectives of parties; other wider environmental goals of parties.)

Agreement / Criteria	ELIS/ESSR	APEC (2012)	EGA (2014-2016)	New-Zealand Chinese Taipei Economic Cooperation Agreement (2012-2013)	UK-New Zealand FTA (2020-2022)	EU-New Zealand FTA (2018-2022)	Singapore-Australia Green Economy Agreement (2021-2022)	ACCTS (2024)
EPP (Product)	Many ELIS	Bamboo flooring panels	Organic fertilizers; wood products; bamboo flooring panels; Basketwork/wicker work; bicycles;	Bicycles (and parts of bicycles); steam turbines; chandeliers and electric ceiling or wall light fighting; electric lamps	Bicycles; wood; wool; flax; coconut, abaca, hemp or musa textiles; woven fabrics or jute of other textile bast fibres; transport infrastructure for rail; electric vehicles; electric lamps	N/A	Green fuels; wood, sustainably sourced bamboo flooring panels; various types of wool; flax; jute and other textile bast fibres; coconut, ababaca, ramie and other vegetable fibers, sacks and bags of jute or other textile bast fibers; central heating boilers.	Wood (and wood-based materials, including construction materials); wool; flax; jute; vegetable fibres.
EPP (npr-PPMs)	Growth has been predominantly in this sector	N/A	Paper made of pulp of recovered waste or scrap paper or paperboard;	N/A	Paper and pulp derived from recovered materials; ferrous waste and scrap;	N/A	A number of products identified as EPPs, including iron ores and concentrates; aluminium ores and concentrates; cement articles produced with less carbon emissions and using less energy; ferry-alloys; aluminium waste and scrap / powders and falkes.	Pulps of fibres derived from recovered (waste and scrap) paper or paperboard; ferrous waste and scrap.

Agreement / Criteria	ELIS/ESSR	APEC (2012)	EGA (2014-2016)	New-Zealand Chinese Taipei ECA (2012-2013)	New Zealand – UK FTA (2020-2022)	EU-New Zealand FTA (2018-2022)	Singapore-Australia GEA (2021-2022)	ACCTS (2024)
Sectors								
Agriculture and food	Covered	Not covered	Not covered	Not Covered	Covered	Covered	Covered	Covered
Transport	Covered	Covered	Covered	Covered	Covered	Not covered	Covered	Covered
Household appliances	Covered	Not covered	Not covered	Not Covered	Not Covered	Not covered	Not Covered	Covered
Energy	Covered	Covered	Covered	Covered	Covered	Covered	Covered	Covered
Forest	Covered	Covered	Covered	Covered	Covered	Not Covered	Covered	Covered
Buildings and furniture	Covered	Not covered	Covered	Not Covered	Covered	Not Covered	Not Covered	Covered
Textiles	Covered	Not covered	Covered	Not Covered	Covered	Not Covered	Covered	Covered
Cosmetics	Covered	Not covered	Not Covered	Not Covered	Not Covered	Not Covered	Not Covered	Not Covered

Agreement / Criteria	ELIS/ESSR	APEC (2012)	EGA (2014-2016)	New-Zealand Chinese Taipei ECA (2012-2013)	New Zealand – UK FTA (2020-2022)	EU-New Zealand FTA (2018-2022)	Singapore-Australia GEA (2021-2022)	ACCTS (2024)
Assessment method								
Third-party certified	Yes	No	No	No	No	No	No	Parties may adopt or maintain measures including due diligence systems and certification schemes to verify that the commodities and products have been produced in a sustainable and lawful manner. (But not direct reference to third party certification in the environmental goods list)
Self-declaration	Yes	No	No	No	No	No	No	No
Environmental declarations (LCA/PEF)	Yes	No	Explains why various wood products (407.10/4408.10/4418.60) should be environmental goods. It notes that for buildings and building products, **life-cycle assessments** show that wood is generally better for the environment than other commonly used building materials in terms of embodied energy,	No	No	No	No	Not mentioned in the environmental goods list. However, ACCTS Chapter 5 on eco-labelling notes that "an ecolabel should take the most significant environmental impacts of the product's life cycle into account.

Agreement / Criteria	ELIS/ESSR	APEC (2012)	EGA (2014-2016)	New-Zealand Chinese Taipei ECA (2012-2013)	New Zealand – UK FTA (2020-2022)	EU-New Zealand FTA (2018-2022)	Singapore-Australia GEA (2021-2022)	ACCTS (2024)
			air, and water pollution, and greenhouse gas emissions.					
Other								
Review process	Some standards have built in processes to review whether the standard is outdated or not. For example, XX.	Discussions are underway regarding the need for expanding and updating the goods list (APEC, 2021[68]). Updated list of environmental services made public in 2021	N/A (the EGA was never agreed upon)	General review built in the Environment chapter; no specific review foreseen for the list of environmental goods.	Yes. The Environment and Climate Change Sub-Committee (Art. 30.9) shall keep this list under review, and may make recommendation to the Joint Committee for modifications to the list of environmental goods. During review, the Committee may consider advances in available technologies, potential dual-use of proposed environmental goods, relevant plurilateral or multilateral developments, and other factors. (Env Ch 22, Art. 22.7).	N/A	Yes – periodic review within two years of the conclusion of the GEA. Review could include assessing goods that may be added to the EGL, identified by stakeholders; clarifying environmental aspects of goods included in the list; further work on sustainable foods and sustainably-sourced critical minerals.	Yes – the Sub-Committee on Trade in Environmental Goods shall review the list of environmental goods to propose (a) necessary amendments related to the classification of goods under the HS for the application of Annex II (List of Environmental Goods) (b) refinements of the additional product specification as appropriate, based on implementation experience by customs authorities; or (c) the inclusion of additional products and other amendments to the list in line with the objective of this Agreement.
Dual use	Not a big	Includes a column	Includes a column	Includes a specific	Dual-use included	No	Includes	Includes additional

Agreement / Criteria	ELIS/ESSR	APEC (2012)	EGA (2014-2016)	New-Zealand Chinese Taipei ECA (2012-2013)	New Zealand – UK FTA (2020-2022)	EU-New Zealand FTA (2018-2022)	Singapore-Australia GEA (2021-2022)	ACCTS (2024)
	challenge in the ELIS/ESSR world, given that end-use is not the main focus of most ELIS/ESSR	on ex-out/additional product specification	for ex-outs	column for ex-out/Additional product specifications	as a factor to take into account when conducting review. The EGL also includes a column with "additional environmental specifications" which could be used to develop ex-outs.		"description of environmental good" which could be translated into ex-outs to address the dual-use problem.	product specifications which could address the dual-use problem.
Component/final product	Mostly final products	Components and final products	Components and final products	Components and final products	Components and final products	Components and final products	Both	Both

Note: This paper uses the list from November 2016, which contains 304 product lines. It must be noted that this list was never agreed upon by the Members as the final list of an EGA.
Source: Authors based on the text of each agreement.