8 ENVIRONMENTAL CONCERNS AND AGRICULTURAL TRADE: BUILDING A RESPONSIBLE AND EFFECTIVE RELATIONSHIP

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TRADE & SUSTAINABLE DEVELOPMENT: VOLUNTARY SUSTAINABILITY STANDARDS (VSS)

The rapid expansion of goods and services trade over the last several decades has created complex interdependencies between production, consumption, and job creation across economies. At the same time, a range of environmental issues-declining biodiversity, water scarcity, and water pollution, as well as climate change-are becoming more acute and call for strong, immediate, and coordinated international action. Countries and companies around the world are making ambitious climate change mitigation plans to address the climate crisis and to reach the net-zero emissions global target determined at the Paris Agreement. In this context, addressing the nexus between international trade and sustainable development is now more urgent than ever.

The link between trade and environmental challenges is particularly relevant for food systems, which have grown increasingly interconnected globally. The value of traded agricultural products has more than tripled since 2000 and over 40 percent of these imports and exports come from developing countries (Glauber 2022). As climate shocks continue to disrupt food production and distribution around the world, trade networks must improve systemic resilience by allowing suppliers and consumers to promptly change flows of inputs and food products in response to shocks.

In the 2030 Agenda, and especially in SDGs 12 (sustainable consumption and production) and 17 (partnerships for the goals), as well as the Addis Ababa Agenda, international trade and global supply chains are singled out as a key instrument to contribute to all other SDGs.

The 2030 Agenda for Sustainable Development defines international trade as "*an engine for inclusive economic growth and poverty reduction, [that] contributes to the promotion of sustainable development.*" In order for it to become a 'sustainable engine' that avoids negative environmental impacts (pollution and natural resource depletion), one approach that seems to be increasingly used is to "internalize" social, economic, and environmental concerns (mitigation and adaptation) in international trade. This can be done with many different policy instruments and tools. **In this chapter we focus**

on a common tool, namely Voluntary Sustainability Standards (VSS) targeting the environmental impact of agricultural trade.

The United Nations Forum on Sustainability Standards (UNFSS) defines VSS as "*standards specifying requirements that producers, traders, manufacturers, retailers or service providers may be asked to meet, relating to a wide range of sustainability metrics, including respect for basic human rights, worker health and safety, the environmental impacts of production, community relations, land use planning and others.*" VSS play an important role in guiding buyers and producers to better social and environmental outcomes in supply chains.

Any actor along a Global Value Chain (GVC) can adopt a VSS as a governance tool and commit to implementing its sustainability standards. Upon implementation, an initial conformity assessment is conducted based on a management plan submitted by the applicant, which outlines how conformity with the specific standards will be achieved. Monitoring or verification of the implementation of these plans are usually carried out by independent certifiers. If the applicant complies with the VSS, a certificate is granted. The validity period of VSS certificates varies, depending on the VSS. At the end of the validity period, the certificate can be renewed, conditional upon passing a re-certification conformity assessment. In addition, during the validity period of the certificate, complementary conformity assessments (i.e. annual "surveillance audits") are usually carried out to ensure continuous compliance with the standards. Recently, "risk-based due diligence", or "supply chain due diligence" approaches have been introduced for agricultural enterprises to "*...identify, assess, mitigate, prevent and account for how they address the actual and potential adverse impacts of their activities as an integral part of business decision-making and risk management systems*," according to the OECD-FAO Guidance for Responsible Agricultural Supply Chains.

VSS truly emerged in the 1990s, and their number grew consistently until the early 2010s. In July 2022, there were around 318 VSS in existence according to the ITC Standards Map, and around 456 ecolabels according to the Ecolabel Index, compared to around 50 VSS in 1990. The main challenges to 'mapping' these standards come from the fact that they are very different in terms of purpose, governance and scope, as well as implementation and expected impact.

FIGURE 8.1 Mapping of VSS - Differences

Purpose	Governance and scope	Implementation and expected impacts
• Product certification • Organization certification • Process certification • Topic certification • Standard benchmarking • Guidance and set of good practices • Performance assessment • Reporting framework • Policy framework • Due diligence	• Governmental public organization • Non-governmental private organization (for-profit or not-for-profit • Existence or not of multistakeholder decision-making processes • Product industry-specific scope versus no product industry scope • General or specific segment of value chain focus (production, processing and manufacturing, trading and retailing, consumption and end of life)	• Output activities and expected long-lasting outcomes and impacts • Time-bound versus no time-bound requirements for compliance • Existence of not of policies for public claims and labeling • Existence of an assurance model based on first-party, second-party or third-party verification.

Source: International Trade Center, Standards Map (2021).

There is no unique register for all VSS. Considering both the ITC Standards Map and the Ecolabel Index, the growth in the number of active VSS has been slowing down in recent years and has even stagnated since 2017[1,2]. Nonetheless the recent stagnant growth in the number of VSS schemes does not signify stagnation in their adoption by producers or firms along GVCs within different sectors, which can be measured by the share of certified commodities in their respective markets. While the proportion of land under certified production globally remains limited, it is nonetheless growing, and certified products are gaining market share as well. In summary, over the last three decades VSS have become an important transnational governance instrument and aim to make GVCs-from producer to consumer-more sustainable by taking into account social and environmental requirements within production processes.

Based on the ITC Standards Map database, the primary agricultural producer's sector represents the biggest share of the sustainability standards landscape. The most frequently certified products are agricultural products, followed by processed foods. In the agriculture sector, the number of VSS has risen markedly since the early 1990s. A new regulatory framework in agricultural trade has already taken hold and the time to adapt is now.

[1] https://standardsmap.org

[2] https://www.ecolabelindex.com/

HOW DO VSS WORK? HOW CAN TRADE BENEFIT FROM THEM AND WHAT ARE THE CHALLENGES?

To achieve sustainable and inclusive growth, it is vital that sustainable business practices be adopted throughout entire GVCs. In the agriculture sector, considering GVCs connected by international trade (a top to bottom requirement is that multi-national corporations and consumer markets spread stricter environmental standards across the globe), VSS usually require upstream farmers to adopt more sustainable and environmentally friendly practices that can support soil health; prevent soil erosion, surface water and groundwater pollution and biodiversity loss; and mitigate climate change. All these practices can ultimately result in improved productivity and profitability (bringing about higher and more stable crop incomes, lowering input costs by more productive efficiency and giving producers access to specific financial services). Depending on the context, these standards can also increase producers' knowledge and capacity to farm sustainably, while creating opportunities for stakeholder collaboration, including private and public sector engagement. This "diffusion effect" is seen as "environmental upgrading", a process of improving or minimizing the environmental impact of GVC operations.

FIGURE 8.2 ▶ Drivers of "environmental upgrading"

Source: International Trade Center, Standards Map (2021).

Environmental upgrading throughout value chains will occur depending on the governance arrangement and the position of the most powerful firms. In buyer-driven commodity value chains, which are dominated by developed market brands or large retailers, the likelihood of upgrading increases. Large retailers, strong brands or important consumer markets can often determine sustainability requirements downstream in the value chain.

In summary, VSS are instruments that can influence how GVCs operate at international, regional, and national levels. They have become a quasi-ubiquitous tool used not only by large firms and producers, but also by other stakeholders for different purposes. Financiers use standards to control the sustainability risks of their borrowers. Indeed, governments increasingly recognize VSS as tools to help them achieve their sustainable development objectives. For example, they are being integrated into or referenced in trade-related domestic regulations as well as bilateral and regional trade policy in several ways, such as in:

- **National and regional regulatory frameworks** that support or promote the development of certification schemes to advance sustainable production.
- **References in free trade agreements** (FTAs). VSS might feature more prominently in an FTA in the form of environment-related provisions (ERPs). For example, in the new FTA between the European Free Trade Area (EFTA) and Indonesia, VSS-certified palm oil products are assigned lower tariffs-or taxes-than non-certified palm oil products to promote sustainable palm oil production. Such provisions have become more common over time. The number of ERPs implemented between 1995 and 2022 increased from 30 to 5,807 across all regional trade agreements reported to the Food and Agriculture Organization (FAO), (Avesani *et al.* 2023). VSS can also be integrated into generalized systems of preferences (GSPs). For example, in the European Union's special incentive arrangement for sustainable development and good governance (GSP+), a country that commits to ratifying and implementing 27 international conventions concerning human and labor rights, environmental protection, and good governance can benefit from additional tariff preferences.
- **Market access regulations or export-promotion measures,** which allow certain products (timber, biofuel, meat, soy, palm oil, cocoa, rubber, coffee) to leave or enter the country only if they comply with specific sustainability criteria or with recognized/accepted certification systems.

Table 8.1 ▸ Examples of government-integrated VSS

Standard Name	Year	Purpose	Description
ARSO – Agriculture, Aquaculture, Fisheries Sustainable Cocoa – Sustainability and Eco-labelling	1977	Verification / Certification Best practices and guidelines	ARSO (Africa Organization for Standardization) is an intergovernmental organization established in 1977 by the former Organization of African Unity (OAU, currently the African Union (AU)) and the United Nations Economic Commission for Africa (UNECA). Its mandate is to promote standardization in Africa to boost intra-Africa and global trade. This includes to establish/harmonize African standards for all products of interest to intra-African trade and to operate a regional certification marking scheme, with a view to certifying the quality of and promoting African products. The mandate also includes the adoption of relevant international standards.
China Green Food	1992	Verification / Certification	Green Food standards on edible produce and processed products, stipulating that they be produced in a sustainable environment and according to technical standards requiring quality control, non-pollution, safety and quality, and awarding them the special Green Food logo. Green Food is a government food certification project initiated and coordinated by China's Ministry of Agriculture (MOA) and approved by the State Council in 1990, with the aim of enhancing food quality and safety, as well as protecting the agricultural bio-environment for sustainable development. The China Green Food Development Center (CGFDC) is a specialized department responsible for promoting Green Food standards under the supervision of the Ministry of Agriculture (MOA); conducting inspections, monitoring and auditing, as well as making decisions on authorizing the Green Food logo. CGFDC has 36 provincial Green Food offices nationwide, which are responsible for local Green Food management. By the end of December 2012, there were 72 designated Green Food production environmental monitoring stations and 56 product quality monitoring bodies. The monitored Green Food production environment (including farmland, orchards, tea plantations, grasslands, woodland, and water) has amounted to as much as 16 million hectares. The Ministry of Agriculture (MOA) has published 125 Green Food Technical Standards and developed over 400 local Green Food Production Technical Regulations.

Standard Name	Year	Purpose	Description
Chinese National Organic Products Certification Program	2001	Accreditation Benchmarking	The China National Organic Product Certification Program is a government project that aims to protect the ecological environment and enhance the quality of organic products. The Organic Products - Requirements for Production, Processing, Labeling and Management system (GB/T19630-2019) takes effect from 1 January 2020, replacing the standard GB/T19630.1- 19630.4 -2011. Organic product certification is governed and supervised by the national authority Certification and Accreditation Administration of the People's Republic of China (CNCA).
Esencial COSTA RICA (Essential COSTA RICA)	1996	Accreditation Verification / Certification Benchmarking	The development of a country brand is a strategy to position the image of a country on the international market. The aim is to boost the country's reputation through tourism, investment, and the export of goods and services. Costa Rica showcases itself to the world, promoting tourism, investment, and exports, along with Costa Rican culture and uniqueness. Costa Rica is a country that has a lot to say, and our way of speaking to the world is done through our country brand, "Essential COSTA RICA". To fulfill the promise we have made to the world, we guarantee that the companies that use the country brand represent our core values: • Excellence: businesses that showcase Costa Rican human talent through specialized goods and services. • Sustainability: companies that co-exist with the environment, using creative strategies. • Innovation: companies that make adjustments in the delivery of goods and services, aiming to increase their profitability. • Social Progress: companies that seek the well-being of their workers. • Costa Rican linkages: companies that demonstrate their connection to Costa Rica. The companies that represent these values undergo a thorough auditing process that grants them a license to use our country brand.
Green Mark Taiwan	1992	Verification / Certification	The Green Mark Program is the official voluntary eco-labeling program in Chinese Taipei founded in 1992 by the Environmental Protection Administration (EPA), aiming to encourage environmentally conscious production and consumption. The program is currently managed by a private institution, Environment and Development Foundation (EDF). As of 2012, the Program has issued Green Mark eco-label certificates to nearly 6,000 products under 117 product categories, including various cleaning products, office supplies and equipment, energy/water-saving products, home appliances, information technology products, construction materials, etc.

Standard Name	Year	Purpose	Description
EU Organic Farming	1991	Best practices and guidelines	Regulation (EU) 2018/848 establishes the principles of organic production and lays down the rules concerning organic production, related certification and the use of indications referring to organic production in labelling and advertising, as well as rules on controls additional to those laid down in Regulation (EU) 2017/625. It aims to revise and strengthen the European Union's (EU) rules on organic production and the labelling of organic products in relation to the control system, the trade regime and production rules.
ASEAN Guidelines on Promoting Responsible Investment in Food, Agriculture and Forestry	2018	Best practices and guidelines	The ASEAN Guidelines for Responsible Investment in Food, Agriculture and Forestry are inspired by and grounded in the Committee on World Food Security's Principles for Responsible Investment in Agriculture and Food Systems (CFS-RAI). They are addressed to the governments of ASEAN Member States (AMS) and adapted to the group's specific challenges, while also foreseeing key roles and responsibilities for stakeholders outside of government, including large-scale private actors. These Guidelines are also inspired by the United Nations' Sustainable Development Goals (SDGs) and refer to them where appropriate. The Guidelines are voluntary in nature.

Source: ITC Standards Map. Retrieved January 12, 2024.

Note: This is a sample of VSS taken, prepared and edited using information from StandardsMap.org. Search criteria included all subcategories under the Environment and Climate Change theme; the Agriculture, Livestock, and Processed Foods sectors; and the Public Entity and International typologies.

Consequently, VSS can be catalysts to different aspects of trade (see Figure 8.3).

FIGURE 8.3 ▸ VSS as Catalysts to Trade

- **Increase environmental performance** and information on products, improving operational efficiency and risk management.
- **Encourage R&D** to have better and more "own" data.
- **Prevent environmental leakages** to origins with less stringent environmental commitments (pollution havens) and encourage relocation of production to most environmentally efficient countries/regions.
- **Moderniza value chains** through capacity building, technology, and innovation transfers.
- **Enhance integration of value chains,** strengthen transparency and traceability, improve relationships with reliable suppliers.
- Build credibility with communities, NGOs, governments, and financial partners. Stronger reputation.
- **Lead to increased exports,** as VSS provides a competitive advantage to complying producers; and signal sustainable production practices that facilitate their market access to foreign markets.

Greater value, volume and efficiency of trade

Source: International Trade Center, Standards Map (2021).

On the other hand, the expansion and increased influence of VSS and their lack of harmonization have become a growing concern and challenge for suppliers, particularly in low-income countries. If VSS are de facto mandatory (because of private contractual clauses or public requirements) for specific markets, small-scale producers, in particular, risk being excluded from export value chains due to **high compliance costs (adaptation costs) and increasing costs for audits and certification, as well as certification maintenance.** This might result in certification costs outweighing the benefits. Besides, in many cases the **impact calculation methodologies and protocols are based on life cycle assessments not adjusted to local productive practices and conditions and default emission factors** (developing countries are almost excluded from VSS dynamics). The implementation then generates a bad rating. So, if producers in developing countries are competing directly with producers in developed countries but are in general less able to implement the requirements of VSS at a given level of cost and lack technical local support and capacity building, they could lose out. Indeed, one of the essential requirements for VSS adoption is an ecosystem of supporting actors working closely with smallholder farmers. This calls for a more targeted approach to certification.

A second barrier relates to a **lack of monetary incentives for producers.** In some cases, certified producers are paid higher wages than conventional producers for their certified soy, cotton, palm, coffee, cacao, fish, timber, etc. or uncertified producers received a discounted payment for failing to meet established standards, unlike certified producers who are paid full price. Based on these findings, it may be concluded that VSS are indeed successful in improving the economic conditions of certified producers. However, other studies found that these price premiums (intermediate outcome) failed to translate into economic endpoint outcomes. The additional revenues that producers generate through price premiums can ultimately be too modest to cover the costs of certification and associated on-site investments to meet VSS requirements. In other cases, the bonus (environmental quality-based price differentiation) does not exist, there is a lack of consistent contracts or no financial support is provided to accompany the implementation. Producers might expect that consumers will be willing to pay more for certified products, but this is not always the case. All play a critical role as a limiting factor in their uptake. There is also a need for effective linkage of incentives to performance, in the absence of which there is unlikely to be noticeable behavioral change. In sum, the greatest challenge VSS currently face in developing countries to catalyze the implementation of more sustainable practices is to generate more financial resources per certified unit.

In the absence of such positive economic incentives, producers are likely to drop out. Moreover, if there is no governance regime that imposes **credible sanctions** (commercial exclusion and tax burdens, among others) on those who do not adopt VSS, there will be no compliance. This is a governance gap given the fact that producers in many countries operate in a regulatory context that is not aligned with the regulatory approach of VSS.

In addition, VSS can be **considered non-tariff barriers to trade** and can be perceived as being more trade restrictive than necessary under a precautionary environmental principle, thus limiting the potential of their use by developing countries (sociopolitical resistance).

The aforementioned barriers result in non-adoption of VSS. So, the potential of VSS to make trade more sustainable relies on two crucial components. First, they must create a substantial impact on the ground with respect to key sustainability parameters (**impact-dimension**). Second, to enhance their impact, they need to be widely adopted (**adoption-dimension**). Adoption is a relevant dimension of effectiveness because the more widely VSS are adopted, the more likely they will be to improve sustainability. If they are only marginally adopted, their potential to transform production processes in GVCs for greater sustainability is limited.

Thus, VSS can be viewed as powerful market-based tools to scale up sustainable development only if the challenges facing developing countries and producers as well as their concerns relating to these standards are adequately addressed.

THE COMPLEX LANDSCAPE OF VSS: PROLIFERATION AND LACK OF HARMONIZATION

The diversity of standards created by different actors for different purposes can be a good thing. However, on the global scale it can be challenging to understand the differences, similarities, and opportunities for interoperability between standards.

Several drivers will be critical in reshaping, rethinking, and reinventing sustainability standards, including:

- **Technology** (It could even replace standards, as it offers more and more credible ways to assess, verify and make sustainability performance along the value chain transparent, for example blockchain).
- **Traceability and transparency** (Compliance will largely have to be addressed through more transparency at all levels of international value chains and better traceability/chain of custody of products – supply chain tracking).
- **Finance** (Financial institutions have already started to transform their portfolio of services, focusing more and more on sustainability and using environmental, social, and governance indicators in their financing operations).
- **Harmonization** (to help harmonize the complex landscape of VSS).

Regarding this last driver, the rapid proliferation and multiplicity of VSS globally is a growing concern, particularly to smallholders and farmers in developing countries who are increasingly required to comply with several standards to access markets at local and international levels, including mandatory quality and safety standards. The first measure to be taken to enhance harmonization is **benchmarking**, which is the assessment of multiple sustainability standards, policies, tools, or company performances against fixed common criteria. This makes it possible to better compare the scope, coverage, and outcomes of standards. Also, the **absence of a common regulatory or guiding framework** and defined transparency rules that apply to all schemes makes it difficult for producers and consumers to distinguish

reliable, credible, or effective VSS from ineffective ones, as well as understand how they define sustainable production and measure the environmental and social performance of their compliant practices. This situation highlights the need **to set up common mutual recognition systems that result in a harmonization of the multiple schemes.**

Further complicating the matter is the fact that, given that standards are not governed by trade law in the same way as legally binding laws and multilateral regulations, there is **a lack of a connective structure to ensure interoperability or compatibility** between national, multilateral, regional, and private industry perspectives on sustainability. Nor is there one internationally recognized body to create a level playing field for all initiatives. The truth is that the content of standards is also changing.

WTO'S CURRENT WORK ON THE ENVIRONMENT AND AGRO-INDUSTRIAL TRADE

The World Trade Organization (WTO) has taken steps to build an environmentally sustainable trade system, by incorporating environmental concerns into trade agreements and discourse.

The WTO formally adopted sustainable development as an explicit guiding principle in the 1995 **Marrakesh Agreement**. Since then, members formally acknowledged the right to enact environmental standards under trade-friendly conditions during the **Doha Ministerial Conference** in 2001, and outlined plans to analyze links between trade, climate change, and sustainable value chains in the 2021 Ministerial Statement. All of them support the principle that the ultimate goal is the promotion of sustainable development.

The organization established the **Committee on Trade and Environment** in 1994 to address environmental issues between members and ensure that trade policy and the environment are mutually supportive. In 2023, some major areas of work included market access issues such as the Carbon Border Adjustment Mechanism under the European Green Deal, sustainable development discussions on environmental subsidies, multilateral agreements under COP28, and strategies to mitigate carbon leakages, including the implementation of voluntary standards and labeling, among many others.

The **Agreement on Technical Barriers to Trade (TBT)** is another major WTO action on sustainability, which allows members to implement environmental and other standards if they are minimally trade distorting. The agreement also encourages members to follow international standards, when possible, to improve coherence among countries. Besides, at the Second Triennial Review of the Agreement in 2001, the TBT Committee developed guidance on how best to develop such standards in **"Six Principles for the Development of International Standards, Guides and Recommendations"**[1]:

a. **Transparency:** All essential information regarding work programs, as well as on proposals for standards, guides, and recommendations under consideration and on the results should be made easily accessible to at least all interested parties in the territories of at least all WTO members. Procedures should be established so that adequate time and opportunities are provided for written comments.

b. **Openness:** Membership of an international standardizing body should be open on a non-discriminatory basis to relevant bodies of at least all WTO members.

c. **Impartiality and consensus:** All relevant bodies of WTO members should be provided with meaningful opportunities to contribute to the elaboration of an international standard so that the standard development process will not give privilege to, or favor the interests of, a particular supplier/s, country/ies or region/s. Consensus procedures should be established to consider views of all parties concerned and to reconcile any conflicting arguments.

d. **Effectiveness and relevance:** International standards need to be relevant and to effectively respond to regulatory and market needs, as well as scientific and technological developments in various countries. They should not distort the global market, have adverse effects on fair competition, or stifle innovation and technological development. Whenever possible, international standards should be performance based rather than based on design or descriptive characteristics.

e. **Coherence:** The principle of coherence encourages international standardizing bodies to avoid duplication of, or overlap with, the work of other international standardizing bodies. In this respect, cooperation and coordination with other relevant international bodies is essential.

[1] Source: https://www.wto.org/english/tratop_e/tbt_e/principles_standards_tbt_e.htm

f. **Development dimension:** This requires taking into consideration the constraints on developing countries to effectively participate in standards development. Tangible ways of facilitating developing countries' participation in international standards development should be sought. Provisions for capacity building and technical assistance within international standardizing bodies are important in this context.

The TBT Committee has also provided guidance that WTO members can rely on when seeking to accept conformity assessment results of other members. It has developed an **Indicative List of Approaches to Facilitate the Acceptance of the Results of Conformity Assessment**[2] covering a range of approaches that governments might choose to facilitate recognition:

a. Mutual recognition agreements for conformity assessment to specific regulations.

b. Cooperative (voluntary) arrangements between domestic and foreign conformity assessment bodies.

c. The use of accreditation to qualify (or recognize) conformity assessment bodies.

d. The designation by governments of specific conformity assessment bodies, including bodies located outside their territories, to undertake conformity assessment.

e. A government's unilateral recognition of results of foreign conformity assessment.

f. The possibility of relying on the manufacturers or supplier's declaration of conformity (SDoC) to the specified requirements.

The WTO also established the **Standards and Trade Development Facility (STDF)** along with FAO, the World Health Organization (WHO), the World Organization for Animal Health (WOAH, formerly the OIE), and the Word Bank, to build exporter capacity in developing countries to meet Sanitary and Phytosanitary (SPS) standards contributing to sustainable economic growth. The Facility does this through national, regional, and global capacity strengthening projects, along with promoting good practices in SPS. In addition, WTO launched the **Healthier Environments through Trade Initiative** with the UN in 2018. The initiative provides a space for stakeholders

[2] Source: https://worldtradescanner.com/TBT-54.pdf

across sectors to share experiences and identify trade strategies and investment opportunities to support the Sustainable Development Goals.

In 2020, fifty WTO members launched the **Trade and Environmental Sustainability Structured Discussion (TESSD)** to support the work of the Committee on Trade and Environment and promote the protection and preservation of the environment within the global trade system. Currently, 76 countries participate in the discussions, which are organized into several working groups related to Environmental Goods and Services, Subsidies, Trade-related Climate Measures, and Circular Economy. As a forum for actors from private, public, academic, and civil society institutions to come together and discuss trade-related environmental issues, the TESSD is an important entry point for cross-sectoral collaboration and the development of strategies to promote sustainable value chains. In 2023, major topics discussed in the working groups included the development of sustainable supply chains, technology, services, and the implementation of regulations, as well as challenges to participating in the trade of environmental goods and services faced by least developed countries. As part of COP28, TESSD and WTO also provided a list of trade-related tools that can be used to address climate change, which included using international standards to avoid fragmentation when upgrading energy efficiency regulations and rebalancing import tariffs to increase the uptake of low-carbon technologies (WTO, 2023). This last action could be implemented through **tariff preferences for environmental goods and services,** which essentially provide lower tariff rates for traded products that meet certain sustainability criteria. In preparation for the 13th Ministerial Conference in February 2024, the group also proposed creating an outline of member practices in the development of trade-related climate measures, including transparency mechanisms, impact assessments and guiding principles, along with mapping the trade aspects of the circular economy along the lifecycle of products.

WTO negotiations and agreements related specifically to agrifood trade have recently been oriented around questions of market access, domestic support, and food security, with less attention paid to environmental concerns in the sector. The first multilateral agreement focused explicitly on this sector emerged from the Uruguay Round in (1995) and established reductions in subsidies and trade barriers to improve competition in global markets, while also acknowledging the need for trade policies to ensure food security. The last two ministerial conferences have focused primarily on responding to recent market shocks that have threatened food security in many regions. WTO members adopted a Ministerial Declaration on the Emergency Response to Food Insecurity and a Ministerial Decision on World Food Programme Food Purchases Exemptions from Export Prohibitions or Restrictions during the 12th Ministerial Conference (WTO, 2022a) (WTO, 2022b). These were accompanied by agreements on fishery subsidies and phytosanitary standards, but no agreements related directly to environmental policy. Looking ahead to 2024, the seven areas of negotiation related to the agrifood sector for the 13th Ministerial Conference include: domestic support, market access, export restrictions, cotton, special safeguard mechanisms, and public stockholding for food security purposes. Unlike these topics, environmental concerns have not been prioritized.

Most WTO actions addressing the link between environmental concerns and food systems have been focused on domestic support for the agri-food sector, such as subsidies for producers. Ongoing efforts within the WTO system to limit subsidies and their market distorting effects can promote environmental sustainability and reduce greenhouse gas emissions in food systems (Glauber *et al*. 2021) (Gautam *et al*. 2022). The organization has also encouraged members to allocate support for "green box" measures, which can be used as important tools to promote environmentally sustainable food production and trade. These include expenditures that have a minimal impact on trade, such as investments in infrastructure, research, and direct payments to local producers under environmental programs, along with other forms of spending that are decoupled from production.

While the WTO has taken some meaningful steps to reduce market distortion and promote environmental sustainability in agricultural public support, the organization has taken little action related to agri-food trade and environmental standards and to establish some concrete trade-related incentive for agri-food production. **As highlighted in the following sections, this represents a major policy gap that the WTO should fill. The agri-food sector has more VSS than any other area of the economy and nowadays sustainability is a market access condition. However, action must be taken to improve coherence, transparency, and accountability across this web of policies.**

THE LACK OF A GLOBAL GOVERNANCE FRAMEWORK – POINTS THAT THE WTO SHOULD ADDRESS

The nature of the WTO as an intergovernmental organization that regulates and facilitates international trade makes it challenging to include VSS in WTO discussions and effective trade related measures. This is not only due to the voluntary nature of the standards, but also due to the ownership, governance, and authority of them. Some vital questions for the WTO include who makes and owns these standards, and how they are governed. Also, what are the levels of these standards (for example, national, regional, or international) and what is their degree of obligation. However, **the increase in the degree of adoption of VSS by governments, the legal subjects of the WTO, and the shift towards mandatory regulatory approaches (hard law), make the greater involvement of the WTO necessary.** This is the case with regulations such as the EU Regulation on Deforestation-free Products or the Directive of Sustainability Reporting.

If government authorities use different yardsticks to make these measurements, producer/exporter and importer implementation, global tracking and comparisons may be very difficult. Ideally, VSS should be based on international standards agreed by consensus; and these would provide a framework for all entities (public and private) to calculate, monitor, trace, and certify. This is what the TBT Agreement strongly encourages. Technical regulations in accordance with relevant international standards are a priori considered as not creating unnecessary obstacles to international trade (Article 2.5 TBT). The difficulty is that in VSS there is not a unique standard or protocol. So, the governments must follow the established guidance on how best to develop such standards in the “Six Principles for the Development of International Standards, Guides and Recommendations”. **Regulatory cooperation, mutual recognition, and equivalence** between WTO members on a sector-by-sector basis may be an effective means of building trust between regulators and may serve as an incubator for discussions at the multilateral level on emerging regulations (public and private). Aligning standards will help members’ climate change mitigation efforts. It is imperative that an attempt be made to emulate the consensus reached on sanitary and phytosanitary matters within the framework of the WTO.

All VSS also have a verification and communication chapter. In TBT terms, when a member implements a verification procedure, it is referred to as **conformity assessment**. These procedures give the counterparty or the next link along the value chain the confidence that a product meets the necessary technical requirements set out in regulations or standards. WTO disciplines encourage members to accept, whenever possible, the results of conformity assessment procedures performed by other members, even when those procedures differ from their own. At the same time, it is also important to ensure that these procedures are not discriminatory and do not create unnecessary obstacles to trade. Moreover, harmonized procedures reduce differences in terms of the verifiers' competences and the verification approaches, which increases the overall quality of verification; thus, verification should also be harmonized.

Once the verification has been completed, the communication of this information along the value chain is essential. One way to do this that is closely related to verification is through **labelling.** It is a very common measure covered by the definitions of both "standards" and "technical regulations" in the TBT Agreement (Annex 1, paragraphs 1 and 2). The TBT Committee has specifically recommended that if a verification procedure results in a mandatory labelling requirement, it is subject to the notification provisions of the agreement, regardless of the kind of information that is to be provided on the label. At the WTO, there have been discussions about the effectiveness of environmental labelling measures and how best to inform consumers through labels, about the carbon footprint and environmental life cycle of products, for example. Some of these discussions have taken place in the form of specific trade concerns (STCs) raised within the TBT Committee. For example, a leading case saw Mexico raise a dispute against the US over its dolphin-safe standard for some tuna product imports, which was resolved in 2018. One key challenge is ensuring that labelling requirements are clear and credible and achieve the desired policy objectives without creating unnecessary obstacles to international trade. To address such issues, the TBT Agreement has also provided a Code of Good Practice for the Preparation, Adoption and Application of Standards.

In summary, **VSS must be closely aligned in order to enhance sustainable trade.** To date, there are no positive considerations in harmonization, mutual recognition, or equivalence regarding required VSS adopted by governments as technical regulations (legally bindings laws).

Besides, it is important to ensure the participation of all countries (developed and developing) in the development of international standards (**inclusiveness**) as mentioned in Annex 3 of the TBT Agreement – Code of Good Practice. Otherwise, the risk is that standards may not adequately reflect national (or

regional) contexts or challenges. Discussions in the WTO Committee on Trade and Environment have highlighted a variety of concerns with respect to the "non-neutrality" of standards. It will be paramount to provide support to developing countries and LDCs, and their companies (particularly small or medium- sized enterprises), so that they can effectively participate in the setting of relevant international standards.

Finally, there is a need to include **trade-related incentives that can lead to the adoption of VSS** among the urgent points that the WTO must address. In the same way that progress has been made in establishing a tariff preference scheme for environmental products and services (mainly green technology) and some governments have included preferences for sustainable products in GSPs and FTAs, a tariff preference scheme for environmentally efficient agricultural products must be enhanced, at least in the initial stages, covering the costs of implementation in the primary production links. Without incentives there will be no mass implementation. Incentives are the key to ensuring that trade becomes an engine for sustainable development.

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