IISD's State of Sustainability Initiatives Review

Standards and the Sustainable Development Goals

Leveraging sustainability standards for reporting on SDG progress

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Preface

The Sustainable Development Goals (SDGs) have set an ambitious framework for the international community. As a result of their adoption in 2015, governments, international agencies, and stakeholders at all levels have been encouraged to adopt a systems approach to development that considers each of the 17 goals and 169 targets. Such an approach breaks with what had come before by focusing on monitoring implementation based on a robust set of indicators. Recognizing that implementation would be iterative and instructional, procedures to foster learning and share lessons learned through the analyses of these data and periodic national reporting on implementation plans, successes, and challenges were also built into this new agenda.

The achievement of this ambitious agenda requires an all-hands-on-deck approach to implementation. Since its adoption, governments and stakeholders at all levels have found and fostered ways in which their activities could—or should—feed into SDG implementation. Voluntary sustainability standards (VSSs) are important tools for governments, producers, buyers, consumers, and communities to discern how choices related to production and consumption can address the myriad concerns that the SDG framework suggests are necessary.

This report highlights that the overall contribution of VSSs to SDG implementation and decision making can be greater than their role in one particular sector. VSSs can also support governments in assessing how well their national SDG implementation is proceeding.

Voluntary National Reviews (VNRs) are an essential part of monitoring global SDG implementation. More importantly, the reports require national consultations on what a country is doing—and should be doing—with regard to the SDGs. This report offers recommendations and guidelines for using these tools to enhance a country's understanding of its progress and challenges for SDG implementation. Decision makers can better understand how producers, suppliers, regulators, consumers, and communities can—and do—work together to improve outcomes in a particular sector, guiding their efforts to track SDG implementation at a national scale.

With 7 years left to achieve the 2030 Agenda for Sustainable Development and its SDGs, tools such as VSSs and this guidebook can assist the over 40 countries that conduct VNRs each year and can help intensify our collective efforts. This report seeks to help governments to drill down on ways in which lessons from existing multistakeholder efforts can inform SDG implementation as we near 2030.

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Executive Summary

Voluntary sustainability standards (VSSs) have many objectives and targets that align with the Sustainable Development Goals (SDGs), making them important partners in implementation. This report explores how this link can be leveraged by governments reporting on SDG progress to the High-Level Political Forum on Sustainable Development (HLPF).

Voluntary National Reviews (VNRs) submitted by countries to the HLPF allow governments to track intermediate progress on the SDGs, identify areas that require more attention before the 2030 target, and integrate efforts and initiatives undertaken in their jurisdictions by all actors— all in the spirit of partnership in attaining the goals. However, governments face many challenges regarding national SDG reporting, including data availability. To alleviate some of the reporting burden, this report identifies avenues through which VSSs can contribute to government VNR reporting, including data from VSSs' content criteria and "best practice" case studies.

To better understand VSSs' potential for contributing to the achievement of the SDGs, the report maps the environmental and social requirements of 13 VSSs of international and regional scope against 10 targets from five SDGs (2, 6, 8, 12, and 15). It uses Uganda, India, and Tanzania as practical reporting examples for identifying how national governments can benefit from additional collaboration with these VSSs. Our criteria analysis reveals that VSSs can help advance all the targets selected, with greater coverage of issues related to targets from SDGs 6, 8, and 12. To support any other national governments interested in leveraging VSS data in their VNRs, the report distills lessons by developing the reporting examples into more generic guidelines. These guidelines describe how VSSs and governments can improve coordination, build synergies, and support each other to advance the SDGs.

The report includes a list of VSS resources and contacts governments could use to support their VNR reporting.

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Abbreviations and Acronyms

2030 Agenda	2030 Agenda for Sustainable Development
ARSO	African Organisation for Standardisation
AWS	Alliance for Water Stewardship
BCI	Better Cotton Initiative/Better Cotton
CmiA	Cotton made in Africa
CSO	Civil society organization
DESA	United Nations Department of Economic and Social Affairs
EAOPS	East African Organic Products Standard
FAO	Food and Agriculture Organization of the United Nations
FSC	Forest Stewardship Council
GHG	greenhouse gas
GIF	Growth and Innovation Fund
GMO	genetically modified organism
HCV	High Conservation Value
HCVA	High Conservation Value Area
HLPF	High-Level Political Forum on Sustainable Development
IFOAM	International Federation of Organic Agriculture Movements
ILO	International Labour Organization
IPM	integrated pest management
ISCC	International Sustainability & Carbon Certification
ITC	International Trade Centre
KPD	Kaderes Peasants Development Plc.
NPOP	National Programme for Organic Production
OECD	Organisation for Economic Co-operation and Development
SAN	Sustainable Agriculture Network
SDG	Sustainable Development Goals

SFPO	Somnath Farmer Producer Organisation
SRP	Sustainable Rice Platform
UN	United Nations
UNFSS	United Nations Forum on Sustainability Standards
VNR	Voluntary National Review
VSS	voluntary sustainability standard
WHO	World Health Organization

1.0 Exploring the Intersection of Voluntary Sustainability Standards and the Sustainable Development Goals: A focus on government reporting

Voluntary sustainability standards (VSSs) are broadly recognized as naturally aligned with the United Nations (UN) Sustainable Development Goals (SDGs) (Bissinger et al., 2020; Blankenbach, 2020; Ugarte et al., 2017; UN Forum on Sustainability Standards [UNFSS], 2018; Verma, 2021). The SDGs bring together 17 goals and 169 targets for the global community to achieve collectively by 2030. Goals range from eradicating poverty and ensuring gender equality to building sustainable cities and conserving and protecting forests and land resources (UN, 2015). VSSs are

> 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. (UNFSS, 2013)

VSSs exist in many sectors—notably agriculture, forestry, textiles, and mining and extractives—and their requirements can cover a broad range of activities along the supply chain (e.g., production, processing, manufacturing, and consumption). As such, many organizations have expressed interest in drawing attention to "alignment," or how the formal requirements of VSSs address issues similar to those found in the SDGs and can potentially support their implementation.

An International Trade Centre (ITC) report presented a comprehensive study assessing 232 VSSs against the SDGs and found that VSSs are essentially linked to all 17 goals, with some links being more direct than others

(Bissinger et al., 2020). A report by UNFSS (2018) that focused on 10 SDGs found that most VSSs align with SDG 8 (decent work and economic growth), SDG 12 (responsible consumption and production), and SDG 15 (life on land). Blankenbach et al. (2020) found the most formal alignment between VSSs and SDG 2 (zero hunger), SDG 8, and SDG 12. These studies, and others, confirm that the objectives of VSSs and those found in the SDGs have many similarities.

It is widely acknowledged that achieving the SDGs requires multisectoral collaboration and partnerships, including public bodies, private actors, and civil society. From this perspective, VSSs have an important—though perhaps less recognized—role to play as partners in implementation or in providing leadership for the goals, and they are therefore key stakeholders.

To advance their sustainable production practices, VSS bodies often partner with buyers, investors, extension services, development organizations, and governments. VSS networks can span regional or global value chains, such as for coffee, cotton, or biofuels. In their organizational structures, VSSs are themselves typically founded and/or managed by multistakeholder partnerships, bringing together civil society groups, private bodies, and sometimes public actors, too. In other words, VSSs have much to offer national governments charged with achieving the SDGs through their established cross-sectoral partnerships and their valuable on-the-ground experience supporting producers and communities in transitioning to more sustainable and inclusive practices.

VSSs, in turn, could learn from government initiatives to achieve the SDGs, making

Figure 1. The Sustainable Development Goals

Source: UN, 2015.

this a mutually beneficial process. For example, the European Union's recently adopted proposal for a directive on corporate sustainability due diligence suggests the importance of business contributions to sustainable development. While some VSSs already align with requirements included in due diligence regulations, examining how they can support businesses in complying with these requirements can help advance the SDGs and the 2030 Agenda for Sustainable Development (commonly referred to simply as the 2030 Agenda). This issue, however, is beyond the scope of the present report.

Certain VSSs will have clearer linkages to the SDG targets than others (Evidensia, 2017). VSS requirements for organic agriculture, for example, might contribute directly to SDG target 2.4 on the implementation of sustainable food production systems and

resilient agricultural practices. Many VSSs have relevant provisions on workers' rights or health and safety for employees; this contributes directly to SDG 8 in general and specifically to target 8.8, which seeks to protect labour rights and promote safe and secure working conditions. Some VSSs, such as Bonsucro, Forest Stewardship Council (FSC), and Copper Mark, have already mapped out or aligned their entire standard with the SDGs.

While much attention has been directed toward studying the links between VSSs and the SDGs, less focus has been on how this link can be leveraged, especially by public and private sector actors. This report focuses on one specific area where we see greater potential for VSSs to support government reporting on progress toward the SDGs. The report makes some suggestions

for governments on how to identify and incorporate work already being done and data already being gathered by VSSs operating within their jurisdiction—as well as how to use these to report on progress toward achieving the SDGs.

National governments are encouraged to report on their progress toward the SDGs periodically through Voluntary National Reviews (VNRs) and to track progress domestically through their national SDG reports (UN, 2015). In this report, we focus on the former—the VNRs. Countries are encouraged to submit VNRs to the UN High-Level Political Forum on Sustainable Development (HLPF) at least once during its 4-year cycle to support the exchange of lessons learned among countries (UN General Assembly, 2021). It should be noted that, where relevant, our findings could also be used for these national reports.

VNRs provide an opportunity for governments to track intermediate progress on the SDGs, identify areas that require more attention before 2030, and integrate efforts and initiatives undertaken in their jurisdictions by all actors. The process of developing VNRs is therefore meant to be inclusive, participatory, transparent, and based on guiding principles (UN Department of Economic and Social Affairs [DESA], 2022). The VNRs can be based on common voluntary reporting guidelines prepared by the UN Secretary-General (DESA, 2022).

However, governments face many challenges regarding national SDG reporting, including data availability. These challenges can make reporting a daunting task for many governments, particularly in the Global South.

As such, this report focuses on national SDG reporting and how VSS activity can be leveraged to support governments in this task. It is envisioned that the findings of this report will therefore be directly relevant for government (and private) entities involved in reporting on the SDGs. In addition, VSSs may also find interesting perspectives in the report on how to become more active contributors to national SDG reporting. In some countries, standards may already be engaged in VNR or parallel civil society-led "shadow reporting processes." We encourage VSSs to continue these engagements, sharing their valuable knowledge and perspectives.

The conceptual—and practical—challenge of using VSS data sources for SDG reporting is the issue of scale and fit. The high-level, "state-centric" data aggregation governments require for their VNRs contrasts with the more granular data monitoring and evaluation conducted by VSSs.[1] A standard may hold data that span a particular commodity, business, or sector for a particular region in a country or across several countries. Furthermore, VSSs represent a wide range of capacities and resources dedicated to data. Some VSSs have prioritized data collection in recent years, given the strong global focus on traceability and accountability. Examples

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[1] This issue parallels the wider data "fit" issue between corporate reporting on sustainability and the SDG targets. In this context, the UN Global Compact, the World Business Council for Sustainable Development, and the Global Reporting Initiative collaborated to develop the SDG Compass—a tool to show companies how they can align their strategies with the SDGs and to measure and manage their contribution. It provides an inventory that maps business indicators as Global Reporting Initiative disclosures against the 17 SDGs and their targets.

include Bonsucro's performance-based standard, FSC's extensive geospatial data analysis, Rainforest Alliance's use of big data and risk mapping, and Aquaculture Stewardship Council's use of deep learning algorithms. The Roundtable on Sustainable Palm Oil and Fairtrade International also stand out for their advances in data management. The extent to which VSSs collect, aggregate, and analyze data and are in a position to contribute to national processes will, however, vary from one standard to another.

Beyond data collection, in this report, we also explore other promising avenues through which VSSs can contribute, directly and indirectly, to government reporting. VSSs can contribute "best practice" case studies that could be included in VNRs, provide knowledge and training on topics relevant to SDG reporting, and become partners in developing VNR reports, potentially coordinating across the landscapes and sectors in which they are engaged in-country. Research supports this perspective, finding that the sustainability benefits from VSSs go "beyond certification." Indeed, standards can help to facilitate dialogue, for example, between multiple stakeholders across a sector, leading to improved coordination, strategies, and partnerships to tackle key sustainability issues while also helping to build trust (Voora, 2021; Wickerham, 2018).

This report also shows that leveraging VSSs for SDG reporting can promote policy coherence by building on synergies and minimizing trade-offs among the SDGs and VSSs spanning several sectors and SDGs, thus contributing to better coherence in implementation.

In short, the objective of the report is to help governments leverage data from VSSs' content criteria and their in-country activity to support SDG progress-reporting efforts as part of their VNR preparation.

1.1 Structure of the Report

This report promotes better mobilization of VSSs at the national level as a promising way forward to support government VNR reporting. In this introductory chapter (**Section 1**), we provide a general overview of the SDG–VSS interface and describe why this collaboration on reporting is an important opportunity for governments. Interviews with experts beyond the author team provided valuable insights in preparing this chapter.

In **Section 2**, we conduct a benchmarking exercise, assessing the environmental and social requirements of 13 VSSs to help identify their potential for contributing to the achievement of the SDGs. Data collected on VSS requirements came from ITC's Standards Map. In the analysis, we focus on the timeline for implementing these VSS requirements—which can be immediate, time-bound (i.e., must be implemented in a given time frame), or recommended only. In this way, we add a new element to other VSS–SDG benchmarking exercises by proposing that requirements that producers must implement immediately or within a given time frame are more reliably set to contribute materially to SDG progress before 2030.

In **Section 3**, we provide reporting examples for three countries: Uganda, India, and Tanzania. In each reporting example, we review the country's most recent VNR submitted to the HLPF, identifying where national governments could benefit from

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additional collaboration with VSSs. We then provide a snapshot of recent activities of selected VSSs in each country, drawing from desk research on published VSS case studies, as well as from the benchmarking in Section 2. In addition, we highlight some examples of VSSs' contributions to gender equality, which is a precondition for—and one of the results of—sustainable development and supports multiple SDGs. Finally, we propose practical insights into how the national governments can leverage ongoing VSS activities in their jurisdictions for their next VNR submission.

Section 4 distills the lessons from Section 3 and offers more generic guidelines for governments—which could be useful for any national government—describing how VSSs and governments can improve coordination, build synergies, and support each other to advance the SDGs. This chapter is based on insights into the common guidelines for

VNR reporting and follows the structure of these guidelines to provide practical suggestions to national authorities. Read in conjunction with Section 3, our country-specific reporting examples offer more general guidelines on how VSS-related information could be leveraged for SDG reporting and used to inform VNR preparation by other governments as well.

Section 5 concludes the report by briefly summarizing the main findings and providing five key takeaway messages.

We hope that this report becomes a useful resource for government bureaus charged with reporting on the SDGs. VSSs can help governments generate a fuller picture of sustainability, and this report seeks to bring together the ideas and practical approaches needed to do so.

2.0 Benchmarking VSSs Against Five SDGs

Table 1. List of selected SDGs and targets for analysis

SDG	Target
2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	**2.3.** By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, Indigenous Peoples, family farmers, pastoralists, and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition, and non-farm employment.
	2.4. By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production; help maintain ecosystems; strengthen capacity for adaptation to climate change, extreme weather, drought, flooding, and other disasters; and progressively improve land and soil quality.
6. Ensure availability and sustainable management of water and sanitation for all	**6.3.** By 2030, improve water quality by reducing pollution, eliminating dumping, minimizing the release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and substantially increasing recycling and safe reuse globally.
	6.4. By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of fresh water to address water scarcity and substantially reduce the number of people suffering from water scarcity.
8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all	**8.7.** Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking, and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers; by 2025, end child labour in all its forms.
	8.8. Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants and those in precarious employment.
12. Ensure sustainable consumption and production patterns	**12.4.** By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water, and soil in order to minimize their adverse impacts on human health and the environment.
	12.5. By 2030, substantially reduce waste generation through prevention, reduction, recycling, and reuse.

SDG	Target
15. Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	**15.2.** By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests, and substantially increase afforestation and reforestation globally.
	15.5. Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity, and, by 2020, protect and prevent the extinction of threatened species.

Source: SDGs and targets are all quoted from UN, 2015.

This section assesses the requirements of 13 selected VSSs to help determine their potential contributions to achieving the SDGs. It begins with an explanation of the methodology used in selecting the SDGs and SDG targets, the VSSs for analysis, and the ITC criteria that best align with the SDG targets. Next, it explains the process behind the benchmarking exercise, which determines the specific coverage that each VSS exhibits of the selected ITC criteria. The section concludes with an analysis of the potential contribution of each VSS to achieving each SDG based on the stringency or degree of coverage of the requirements.

2.1 Methodology

The process used to examine VSS criteria against a selected number of SDGs and targets involved the following steps.

2.1.1 Selecting the SDGs and SDG Targets

The initial step for this analysis involved choosing the SDGs and their targets. To this end, we considered the findings from *Linking Voluntary Standards to Sustainable Development Goals* (Bissinger et al., 2020), which provides a systematic mapping of 232 private VSSs against the 17 SDGs and their targets. The mapping illustrates which SDGs and targets the VSSs could best contribute to. Based on these results, a short set of SDGs and corresponding targets were selected[2] (see Table 1). This approach demonstrates the high degree of SDG alignment with VSSs on certain issue areas to support government reporting on SDG progress.

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[2] For determining relevance, targets that were not directly related to VSS criteria, or those that illustrated a degree of duplication from one target to another, were eliminated. For example, for SDG 8, although target 8.1 speaks of economic growth and GDP, when assessing their contributions in relation to VSSs, other targets of SDG 8, such as SDG 8.7 (forced labour) and SDG 8.8 (labour rights), are more relevant, as they cover the broad objectives of the VSSs. Thus, 8.1 was not used in the analysis. This process allowed us to narrow the scope of SDG coverage for this report.

Table 2. VSSs selected for analysis and their geographical scope

Standard	Geographical scope
4C Code of Conduct Version 4.0 Valid from July 1, 2020	Global coffee standard
African Organisation for Standardisation – ARSO Agriculture Standard ARS/AES 01€ First Edition 2014	Regional agricultural standard
Alliance for Water Stewardship International Water Stewardship Standard (AWS Standard) v 2.0 22.03.2019	Global framework for major water users
Better Cotton Initiative (BCI) v 2.1 | March 1, 2018	Global cotton production standard
Cotton made in Africa (CmiA) Volume 4, December 2020	Regional cotton standard
Fairtrade International – Small Producers Organizations (FSPO) April 3, 2019_v2.5	Global agriculture standard
Forest Stewardship Council (FSC) Principles and Criteria for Forest Stewardship Standard, V(5-2)	Global forest management standard
International Sustainability & Carbon Certification (ISCC)-EU202-2 Agricultural Biomass: ISCC Principles 2-6; ISCC EU 202-1 Agricultural Biomass: ISCC Principle 1 Version 1.0 Valid from July 1, 2022	Global feedstock standard (agricultural and forestry biomass, circular and bio-based materials, and renewables)
International Federation of Organic Agriculture Movements (IFOAM) Version 2.0 © IFOAM – Organics International, October 2019 (Edited version of the IFOAM Norms 2014)	Global umbrella organization for organic agriculture
National Programme for Organic Production (NPOP)–India Seventh Edition: November 2014 Appendix 1: Organic Crop Production	National organic standard
Rainforest Alliance Sustainable Agriculture Standard Farm Requirements v 1.1	Global agriculture standard

Standard	Geographical scope
Sustainable Rice Platform (SRP) Standard for Sustainable Rice Cultivation Version 2.1 January 2020	Global rice standard
East African Organic Products Standard (EAOPS) EAS 456:2007 ICS 67.020	Regional organic standard

2.1.2 Selecting the ITC Criteria

The next step was to select the ITC criteria[3] that best align with each SDG target and to assess the contribution that each VSS can make toward the selected SDGs and their targets. The ITC criteria were selected using a search function in the ITC Standards Map (ITC, n.d.), with keywords included in each SDG target. The final set of ITC criteria was determined based on their explicit and direct relevance to assessing each selected SDG and associated targets (see Appendix A).

2.1.3 Selecting the VSSs

Thirteen VSSs were chosen for their strong presence in national, regional, and/or international markets. They include nine global standards, three regional standards, and one national standard (see Table 2).

All selected standards focus on agricultural commodities, except the AWS Standard, which focuses on the sustainable use of water (see Appendix B). The AWS Standard was chosen for its strong relationship with SDG 6 (clean water and sanitation). Unlike the other 12 standards, however, coverage of the AWS Standard only takes into account the criteria specifically related to water, with all other criteria referred to as "not applicable."[4]

2.1.4 Benchmarking

The stringency or degree of coverage of the selected ITC criteria was then examined across the content criteria or requirements of the 13 VSSs with information housed in the ITC Standards Map for all but five[5] of the assessed VSSs, as their information was not yet available in the ITC Standards Map. The International Institute for Sustainable

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[3] The ITC Standards Map hosts content criteria of more than 300 VSSs and provides a high-level analysis of them against a number of criteria or indicators known as ITC criteria.

[4] Typically, marking a criterion as "not applicable" is not clear cut. Regulations (e.g., ratification of International Labour Organization [ILO] conventions), priorities of the scheme, and agreements with other schemes are just some examples that can lead to a specific criterion not being addressed. However, this does not necessarily mean the criterion would not be applicable. The AWS Standard is an exception in this regard.

[5] There were different reasons we did not use the ITC Standards Map to benchmark some standards, including the following: the standard is not housed in the Standards Map (e.g., NPOP) and updates to the standard data entry are underway (e.g., CmiA). Moreover, the ITC Standards Map was recently updated, and some additional criteria have not yet been assessed against the VSS content criteria.

Development assessed these five standards through extensive document analysis and mapped them manually.

As compliance timelines may influence efforts to achieve the SDGs, this analysis includes a consideration of the timelines to implement requirements. The degree of coverage indicates whether compliance with the criterion is to be met immediately, over a specific period (1, 3, or 5–6 years), or if it is only recommended.

If a VSS's requirements are heavily laden with "recommended" criteria only, this standard is less likely to have the same contribution to the SDGs as a VSS that requires the same criteria to be met immediately or over a set period of time, as recommended criteria are not considered necessary for compliance. Conversely, if a VSS gives producers, specifically smallholders, a manageable timeline within which they are to meet production criteria, it could make a greater contribution to advancing the SDGs and achieving sustainability in the long term, as more producers will be able to reach and maintain sustainable practices through continuous improvement.

The degree of coverage of each criterion and VSS for each SDG and target is calculated in percentages following a weighting methodology that reflects the timeline in which the requirements must be met for a participant to become and remain standard compliant:

- 0% = not covered
- 20% = improvement or recommendation—implementation suggested in the standard document but not required

- 40% = longer-term requirement (more than 3 years)
- 60% = medium-term requirement (between 1 and 3 years)
- 80% = short-term requirement (within the first year)
- 100% = immediate—must be met immediately for the participant to be recognized as VSS compliant.

It must be noted that our methodology is based on the requirements specified by VSSs and may not be 100% reflective of the actual impacts that VSSs have on the ground. While this is covered in Section 3 (illustrating case studies in three selected countries), it is imperative to note that this analysis cannot be a substitute for measuring the actual impacts that VSSs have on the ground to advance the SDGs. A detailed impact analysis based on actual evidence will be needed for this, which is beyond the scope of the present report.

2.2 Analysis for SDG 2

SDG 2's goal is "end hunger, achieve food security and improved nutrition and promote sustainable agriculture" (UN, 2015). For our analysis, we selected targets 2.3 and 2.4, which focus on agricultural productivity and sustainability (see Tables 3 and 4).

Our analysis indicates that the VSSs examined are well positioned to contribute to advancing SDG 2, as they cover many of the criteria selected under this goal, though the degree of coverage varies.

Figure 2. Average degree of coverage of SDG targets 2.3 and 2.4 by VSSs
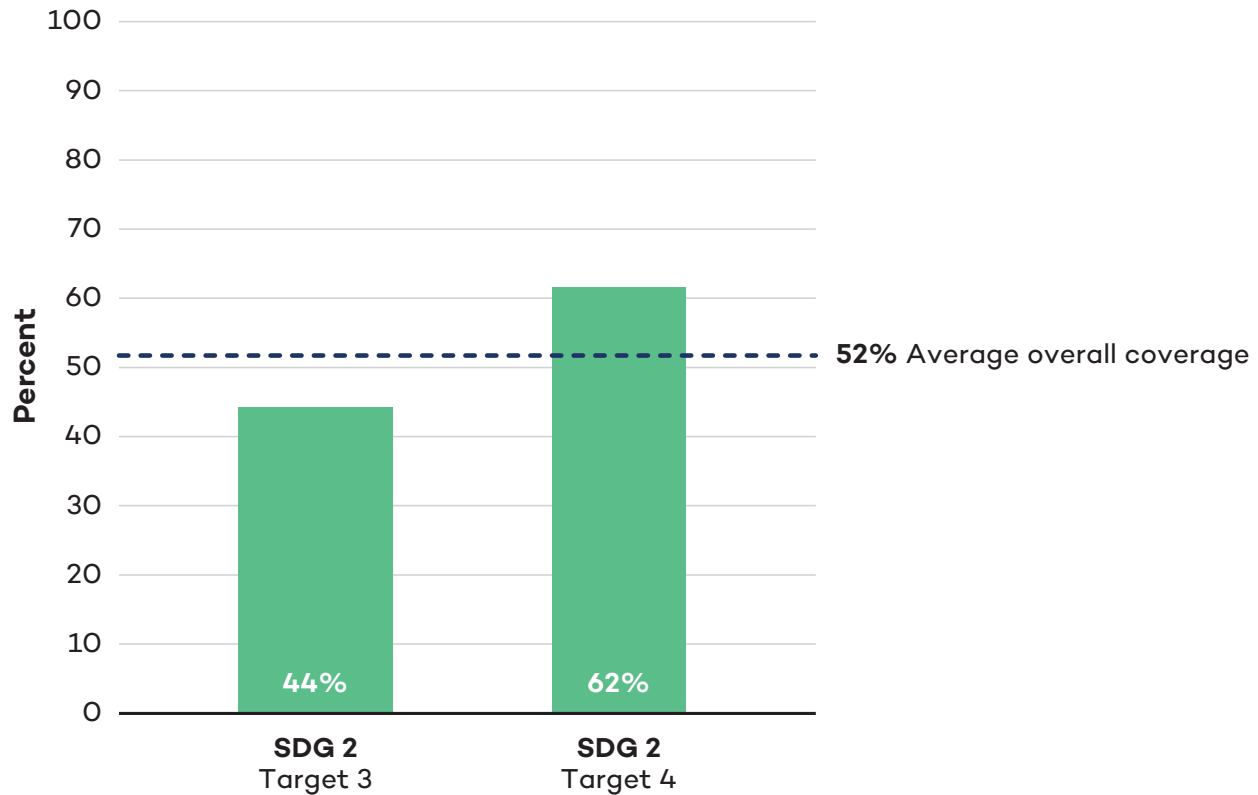
Source: Authors' elaboration based on an analysis of documents listed in Table 2

2.2.1 VSSs Can Advance SDG 2 by Supporting Agricultural Productivity and Farmers' Livelihoods

Concerning target 2.3, which encompasses agricultural productivity and farmers' livelihoods, VSSs have the most coverage of criteria related to land-use rights, integrated pest management (IPM), and training workers on sustainability issues.

Nine of the 13 standards (4C, ARSO, Better Cotton,[6] CmiA, Fairtrade International – Small Producers Organizations, FSC, IFOAM, ISCC, and Rainforest Alliance)

include mandatory compliance to measures to ensure that operational units have legal land-use rights. Requiring the unit of operation to possess legal land tenure and valid user rights according to formal and customary laws helps prevent land grabbing and ensures that the land is acquired through free, prior, and informed consent without involuntary resettlement and/or coercion. This can protect and secure equal access to land, as well as productive resources and inputs. In turn, it can help vulnerable groups, such as women and Indigenous Peoples, access markets and other opportunities, which can help mitigate poverty, increase shared prosperity, and enhance social inclusion (Elder et al., 2021).

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[6] Better Cotton Initiative has been rebranded as simply Better Cotton.

Table 3. Degree of coverage of VSSs' requirements that contribute to SDG target 2.3

VSS Content criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage
Average coverage SDG2-T03	**42**	**42**	**-**	**33**	**77**	**43**	**83**	**58**	**33**	**8**	**62**	**25**	**25**	**44**
Living wage (1991)	20	0	-	0	20	0	100	100	0	0	100	0	**0**	28
Land title and legal use rights (4078)	100	100	-	100	100	100	100	100	100	0	100	0	**0**	75
Customary rights of tenure (700403)	0	0	-	100	0	100	100	100	0	0	100	0	**0**	42
IPM system (2106)	100	100	-	100	100	60	100	100	0	0	100	100	**0**	72
Access and selection of inputs and varieties (traditional versus improved/ engineered) (300467)	40	0	-	0	100	0	100	100	100	100	0	100	**100**	62
Diversification of business operations (700413)	40	0	-	0	100	0	100	0	0	0	20	0	**100**	30
Access to financial services (1973)	20	0	-	0	100	0	0	0	0	0	20	0	**0**	12
Distribution networks and access to markets/buyers (1959)	20	100	-	0	100	100	0	0	0	0	100	0	**100**	43

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VSS Content criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage
Access to financial services for women (payment, credit, savings, subsidies) (900036)	40	0	-	0	100	0	100	0	0	0	100	0	0	28
Access to technology and innovation (300471)	20	0	-	0	100	0	100	0	100	0	0	0	0	27
Traditional knowledge used for conservation and sustainable use of biodiversity (900003)	0	100	-	0	0	100	100	100	0	0	0	0	0	33
Staff training on sustainability issues (300451)	100	100	-	100	100	60	100	100	100	0	100	100	0	80

Moreover, the inclusion of women in land ownership and agricultural activities more broadly is now widely recognized as vital for improving household food security.[7]

Among the selected VSSs, nine (4C, ARSO, Better Cotton, CmiA, Fairtrade International – Small Producers Organizations, FSC, ISCC, Rainforest Alliance, and SRP) require IPM, eight as mandatory for compliance and one as a time-bound requirement. IPM provides alternative methods for farmers to protect their crops against harvest loss while better protecting

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[7] The role of women in achieving the SDGs and the important co-benefits that VSSs can deliver for women's empowerment are further addressed in Section 3, which highlights examples of good practices in this regard.

soil, water, and biodiversity. Consequently, farmers can increase their productivity and food security (Dara, 2019; Food and Agriculture Organization of the UN [FAO], n.d.; Shankar & Abrol, 2012).

2.2.2 VSSs Can Advance SDG 2 by Supporting Sustainability, Resilience in Agriculture, and Food Production

Target 2.4 focuses on sustainability and resilience in agriculture and food production. For this target, most VSSs include criteria aimed at improving soil conservation and quality, enhancing production efficiency, and protecting land with High Conservation Value. All the selected standards have some type of requirement calling for soil conservation and better soil conditions. Most address soil conservation—for instance, through intercropping and post-harvest processes, such as the use of cover crops—and crop rotation. These requirements can enable farmers to increase productivity while preserving soil health and biodiversity and ensuring food production in periods of drought.

In contrast, the 13 VSSs have fewer requirements related to access to financial services and ensuring a living wage for workers, which can also contribute to achieving SDG target 2.3. These measures are typically connected and examined in relation to reducing poverty, but they can make a difference in guaranteeing access to food for all. Research suggests that a higher minimum wage may encourage some households to purchase more healthy calories and help

households afford more calories overall (Palazzolo & Pattabhiramaiah, 2020). This means that if VSSs include living wages in their criteria, they can better support SDG 2. Among the standards assessed, only five (4C, CmiA, FSC, ISCC, and Rainforest Alliance) have requirements related to a living wage, and only three require immediate compliance.

This finding follows the extant literature, which argues that, so far, many VSSs have had a limited impact on living wages (Bennett, 2018; Blankenbach, 2020). Calculating a living wage can be challenging in some countries and regions, making it difficult to require it in practice. Nevertheless, some VSSs play an active role in defining living wage benchmarks and support putting them into practice to achieve a decent standard of living for working people and their families worldwide. This work is being led through the Global Living Wage Coalition, a collaboration among Anker Research Institute, Fairtrade International, ISEAL, Rainforest Alliance, and Social Accountability International.[8] Thus, to contribute effectively to achieving SDG 2, VSSs may need to go beyond requiring criteria related to minimum wage standards and benchmark wages with the local cost of living to calculate living wages.

The studied VSSs also show less coverage of criteria for emergency response plans or strategies for climate-related hazards (target 2.4). Climate change can affect the food system significantly, ranging from a direct impact on crop production due to conditions such as drought to changes in food supplies, markets, and supply chain infrastructure (Godde et al., 2021; Gregory, 2009; Mbow et al., 2019; Schmidhuber &

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[8] See https://www.globallivingwage.org/about/ for more information on the Global Living Wage Coalition.

Table 4. Degree of coverage of VSSs' requirements that contribute to SDG target 2.4

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Average Coverage SDG2-T04	**49**	**89**	**20**	**20**	**78**	**51**	**67**	**67**	**56**	**56**	**76**	**67**	**67**	**62**
Specific climate adaptation activities (701327)	20	100	20	100	100	60	100	0	0	0	100	0	0	**48**
Soil conservation (800000)	100	100	-	20	100	60	100	100	100	100	100	100	100	**90**
Soil quality, productivity, and biodiversity (2055)	60	100	-	20	100	60	100	100	100	100	100	100	100	**87**
Soil enhancement by use of cover crops (701332)	100	100	-	0	100	60	0	100	100	100	60	100	100	**77**
Soil enhancement by crop rotation or intercropping (300622)	0	100	-	20	100	60	0	100	100	100	100	100	100	**73**
Mix land-use system in agroforestry (1000003)	20	100	-	0	0	60	0	0	0	0	20	0	100	**25**
Prohibition of production on land with high conservation value with conversion cut-off date not later than December 2009 (700372)	100	0	-	0	100	100	100	0	100	100	0	100	100	**67**

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Production efficiency/ productivity (1971)	40	100	-	20	100	0	100	100	0	0	100	100	0	**55**
Emergency response plans or strategies for climate-related hazards (701326)	0	100	20	0	0	0	100	100	0	0	100	0	0	**33**
Average degree of coverage SDG 2	**45**	**62**	**20**	**28**	**77**	**47**	**76**	**62**	**43**	**29**	**68**	**43**	**43**	**52**

* Note: Excluding AWS.

Tubiello, 2007). While seven of the VSSs have requirements for specific activities on climate adaptation, only five (ARSO, AWS, FSC, ISCC, and Rainforest Alliance) have criteria for emergency response plans or strategies for climate-related hazards. Limited coverage on this issue may be because some of the VSSs examined target smallholders. Including requirements such as the availability of emergency response plans might make compliance with a standard more difficult, thereby excluding smallholders from participating in VSSs (e.g., Fairtrade International or CmiA).

Arguably, VSSs address climate change adaptation through requirements for sustainable farming practices (e.g., soil erosion control, agroforestry, input varieties,

water conservation, soil sequestration, and renewable energy). However, requiring VSS-compliant operations to develop an emergency response plan or specific strategies for climate-related hazards would better prepare and protect farmers against heavy loss and help advance SDG 2. Moreover, only five VSSs (4C, CmiA, FSC, Rainforest Alliance, and EAOPS) have requirements related to the diversification of businesses, which can serve as a climate change adaptation strategy by helping mitigate production losses due to reliance on a single commodity by supporting the production of a variety of crops or having other income-generating activities.

Although the AWS Standard is largely not applicable to SDG 2, given that its focus is solely on the sustainable use of water (see

Section 2.1 on Methodology), it does require producers to incorporate specific climate change adaptation activities. This stands to reason, as climate change impacts are often felt through water. Events such as floods, storms, heat waves, and droughts have caused an estimated 90% of all major weather-related disasters over the past decade (Fuller, 2021), affecting water availability.

VSSs appear to have an opportunity to increase their support for the achievement of SDG 2. Among the 13 selected VSSs, CmiA (77.14%) and FSC (76.19%) show the highest degree of immediate compliance coverage across SDG 2 criteria, including criteria on IPM; access to inputs and resources, including fertilizers and seeds; climate adaptation activities; and soil conservation measures. They are followed by Rainforest Alliance (67.62%), ARSO (61.90%), and ISCC (61.90%), suggesting the potential contribution of these standards to similar areas related to SDG 2.

In contrast, Better Cotton and NPOP show the smallest degree of coverage for immediate compliance with criteria related to SDG 2 at 27.62% and 28.57%, respectively, followed by IFOAM, SRP, and EAOPS—all with 42.86%—as they focus more on helping smallholder farmers comply with several related criteria within a time-bound framework. This stands to reason, as smallholders cannot be expected to comply with a standard as quickly as larger holdings that have more resources and capacity. Increasingly, VSSs have incorporated a continuous improvement approach (e.g., Better Cotton, 4C) by including requirements on which farmers must report progress within a set period of time. It bears noting that most of these standards have an international

scope, with the potential to reach a wide range of smallholder operations. This could be considered a good approach to support farmers in reaching SDG 2, as more small-scale farmers can progressively—rather than immediately—adopt agricultural practices that enhance soil health and boost productivity.

Our analysis further illustrates major differences between international and national VSSs with respect to immediate expectations for compliance with the criteria we selected to examine this SDG. Overall, coverage of criteria ranges from 77.14% (CmiA) and 76.19% (FSC) to 42.86% (EAOPS) and 28.57% (NPOP). This could be partly because national standards usually have a specific focus. For example, India Organic and EAOPS both concentrate solely on organic production and do not address criteria related to access to markets and finance, business operations, or training. They mirror the IFOAM organic standard, which also does not cover these issues. CmiA and FSC, however, broadly cover most of the criteria selected for SDG 2. For example, they include criteria that support training for workers on sustainability issues; access to finance, in particular, for women; and linkages with cotton buyers, which can all improve agricultural productivity and farmers' income.

In summary, sustainable agriculture is not just about farming practices. It involves a holistic approach that includes, among other things, training on good practices, climate change adaptation plans, business diversification, the use of technology, and the payment of living wages to workers. VSSs are most likely to help accelerate the achievement of SDG 2 by ensuring land rights and land tenure and improving crop production, pest

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management, soil conservation, and worker training on sustainability issues. While it is unreasonable to expect VSSs to cover a plethora of requirements that address everything related to sustainable agriculture, our analysis suggests they could nonetheless broaden their scope to better contribute to SDG 2 in areas relating to, among others, living wages, climate adaptation plans, and the diversification of income-generating activities.

2.3 Analysis for SDG 6

SDG 6 aims to "ensure availability and sustainable management of water and sanitation for all" (UN, 2015). Targets 6.3 and 6.4 were chosen to best illustrate how the selected VSSs contribute to achieving SDG 6. Target 6.3 prioritizes water quality, and target 6.4 focuses on water-use efficiency. We selected criteria focused on water quality, water resource monitoring, the impacts of water usage, and water conservation to assess the coverage of the 13 VSSs (see Tables 5 and 6). Generally, the VSSs show high to moderate coverage of criteria selected for SDG 6.

Figure 3. Average degree of coverage of SDG targets 6.3 and 6.4 by VSSs
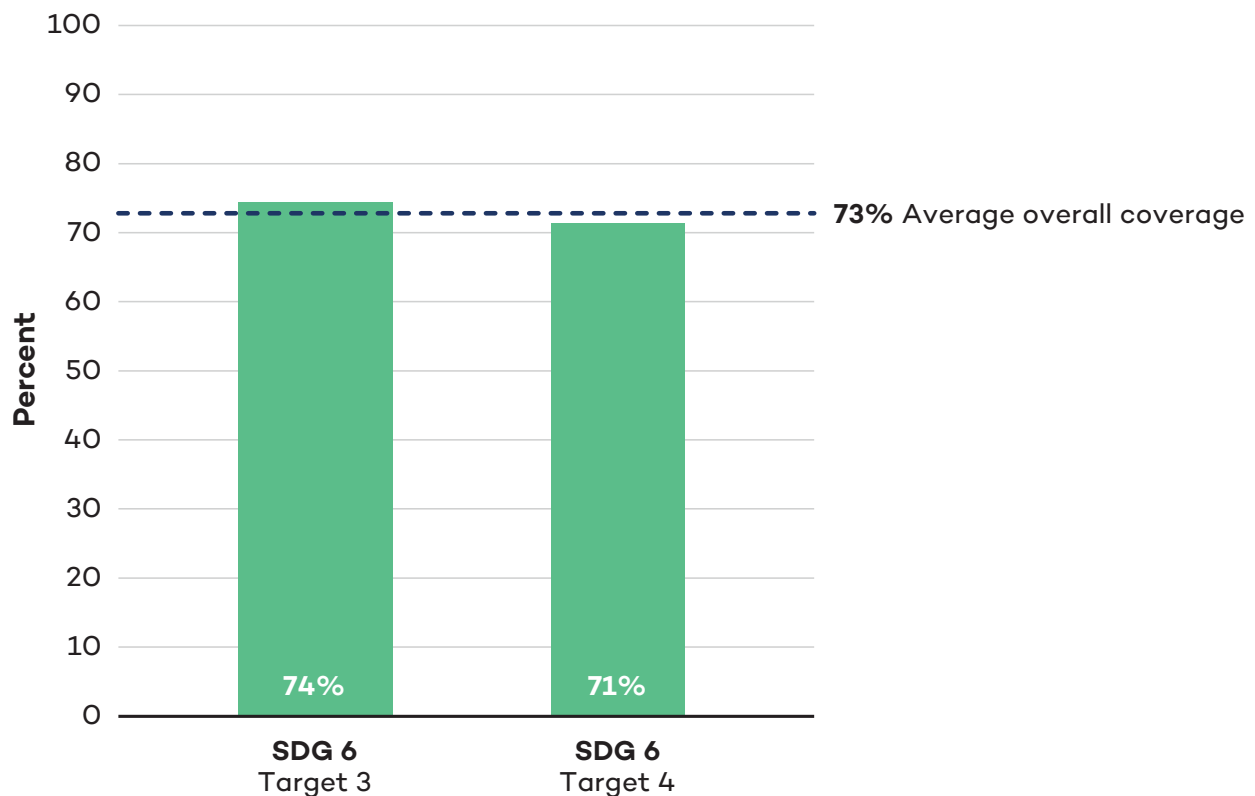
Source: Authors' analysis based on documents listed in Table 2.

2.3.1 VSSs Can Advance SDG 6 by Supporting Water Quality

Regarding target 6.3, almost all the VSSs examined cover criteria related to water quality and pollution. Ten of the 13 standards include immediate compliance requirements for criteria to prevent the runoff of waste chemicals, minerals, and organic substances. Ten also have immediate compliance requirements for indicators related to the quality of water used in production and criteria to prevent surface and groundwater contamination/pollution.

All the assessed VSSs except 4C and India Organic cover the quality of water used in production. On the one hand, agricultural production can negatively impact water quality downstream through farming inputs such as fertilizer. On the other hand, water is also an input into production processes through irrigation, and maintaining a sufficient level of quality irrigation water is also important—especially for commodities that are directly consumed. As such, water quality is generally an important consideration for VSSs in the context of water stewardship, environmental protection, and food safety.

Recycling, reusing, and recovering wastewater can mitigate water stress and contribute to the conservation of water sources and the overall achievement of SDG target 6.3 (UN-Water, n.d.). Seven of the 13 VSSs include requirements related to wastewater reuse. Although the volume of wastewater

Table 5. Degree of coverage of VSSs' requirements that advance SDG target 6.3

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Average Coverage SDG6-T03	63	100	100	57	83	57	83	83	50	33	100	100	83	**74**
Wastewater quality management and treatment (2031)	60	100	100	0	0	40	0	100	0	0	100	100	100	**42**
Surface and groundwater contamination/ pollution (10084)	60	100	100	20	100	40	100	100	100	100	100	100	100	**85**

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Quality of water used in production (4081)	0	100	100	100	100	60	100	100	100	0	100	100	100	**80**
Chemicals storage and labelling (60004)	60	100	-	100	100	60	100	100	0	0	100	100	100	**77**
Use and management of hazardous chemicals (800006)	100	100	-	20	100	60	100	0	0	0	100	100	100	**65**
Prevention of runoff of waste chemicals, minerals, and organic substances (300661)	100	100	-	100	100	80	100	100	100	100	100	100	100	**98**

* Note: Excluding AWS.

generated by each commodity varies, every production process generates wastewater in one form or another.

Monitoring water quality is a challenge, especially for non-point source pollution, as in agriculture, which is—by definition—diffused across a landscape. In many countries, the combination of limited capacity and techniques to monitor water quality paired with the challenge of attributing this pollution back to specific users means monitoring water quality at a national or local level is subpar. In this context, tackling

water pollution at its source is key. Through their requirements on agricultural inputs, the careful use of wastewater, and the need to consider water stewardship, VSSs can help achieve targets under SDG 6.

2.3.2 VSSs Can Advance SDG 6 by Supporting Water-Use Efficiency

For target 6.4 on water-use efficiency, 10 of the 13 VSSs have immediate compliance requirements for criteria related to the

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efficient use of water extracted for irrigation. Along with the AWS Standard, which shows full coverage of all applicable criteria related to sustainable water management, ARSO, CmiA, and ISCC show immediate coverage of all criteria selected for target 6.4. Given the importance of water reuse, recycling, and harvesting for water-use efficiency, as well as the potential benefits to be derived from the undervalued recoverable wastewater by-products (as explained above), 10 of the assessed VSSs cover this criterion, five for immediate coverage and two providing a timeline for compliance. 4C and Rainforest Alliance only recommend compliance, as, given the cost and struggle to access the technology needed for water reuse and recycling processes, farmers may struggle to adopt these measures without financial support.

All VSSs cover wastewater management plans except three: IFOAM, India Organic, and EAOPS. Better water management can improve the health of workers and surrounding communities by reducing their risk of pathogen exposure (UN-Water, n.d.). A water management plan is the foundation on which processes to improve water quality and increase water efficiency are built. It also sets out a strategy for optimizing water usage, availability, and quality. This strategy can include training and support to achieve desired outcomes. A risk and impact assessment on water usage could better inform a water management plan. Only four of the assessed VSSs (Better Cotton, Fairtrade International, India Organic, and EAOPS) do not require the unit of operation to conduct such an assessment.

Coverage of criteria related to SDG 6 is high for both international and national VSSs, with

ARSO and the AWS Standard showing 100% coverage, followed by SRP (98.46%), and ISCC and CmiA (both at 92.31%). NPOP (30.77%), FSPO (47.69%), and 4C (52.31%) show relatively lower coverage. Organic standards tend to focus on soil management and prohibit the use of synthetic fertilizers, reducing the risk of water contamination downstream. EAOPS, an organic standard, shows coverage of all the criteria related to chemical use and water quality, specifically proper storage, labelling, and use and management of hazardous chemicals. IFOAM and NPOP cover criteria preventing runoff of waste chemicals and mineral and organic substances but not criteria on the use, management, storage, and labelling of hazardous chemicals.

Fairtrade International requires compliance with all criteria associated with water quality (target 6.3) to be met within a specific time frame. Given the high costs of water treatment, giving small producer organizations reasonable timelines to have systems in place to improve water quality from and for production will likely result in sustainable processes in the long term. ARSO is the only regional standard that requires immediate compliance with all the criteria across the selected SDG 6 targets, including surface and groundwater sources, showcasing its potential to improve water quality and use. Time-bound criteria facilitate producers' ability to maintain compliance with the schemes over the long term, which might explain why 4C and Fairtrade International require time-bound compliance for most of their criteria.

In light of the issues involved with collecting and analyzing data on water use and water quality, as well as the high costs to comply

Table 6. Degree of coverage of VSSs' requirements that advance SDG target 6.4

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Average Coverage SDG6-T04	**43**	**100**	**100**	**60**	**100**	**40**	**86**	**100**	**71**	**29**	**74**	**97**	**57**	**71**
Water extraction/ irrigation (10086)	60	100	100	100	100	60	100	100	100	0	100	100	100	**85**
Water resources monitoring, use, and consumption (2037)	60	100	100	100	100	60	100	100	100	100	100	100	100	**93**
Water dependencies and water scarcity (2036)	20	100	100	100	100	40	100	100	0	0	0	100	0	**55**
Water reuse, recycling, and harvesting (2032)	20	100	100	0	100	60	0	100	100	0	20	80	100	**57**
Water management plan (300663)	60	100	100	100	100	60	100	100	0	0	100	100	0	**68**
Assessment of risks and impacts on water usage (300455)	20	100	100	0	100	0	100	100	100	0	100	100	0	**60**
Natural wetlands maintained in undrained conditions (800009)	60	100	-	20	100	0	100	100	100	100	100	100	100	**82**

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Average degree of coverage SDG 6	55	100	100	58	92	48	85	92	62	31	86	98	69	73

* Note: Excluding AWS.

with the criteria associated with SDG 6, VSSs have an important role to play in providing technical support and training and helping farmers to access the financial support needed to establish methods to reuse, recycle, and harvest water; treat wastewater; and improve water efficiency to avoid water scarcity. Emphasis should be placed on including criteria that support risk and impact assessments, as well as water management plans.

In summary, the assessed VSSs cover key issues related to SDG targets 6.3 and 6.4, including water quality, resource monitoring, water use, and consumption. However, they could increase their rigour in ensuring compliance with their criteria, given that more than 2 billion people worldwide use drinking water sources contaminated with feces, and more than that number live in countries experiencing high water stress (World Health Organization [WHO], 2022).

2.4 Analysis for SDG 8

SDG 8 aims to "promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all" (UN, 2015). For our analysis, we selected targets 8.7 and 8.8 to best inform how the selected VSSs help achieve SDG 8 (see Tables 7 and 8). Target 8.7 prioritizes the eradication of forced labour, modern slavery, human trafficking, and the worst forms of child labour. Target 8.8 focuses on labour rights and health and safety for all workers, particularly vulnerable workers.

Our analysis reveals overall high coverage of the selected VSSs' criteria for targets 8.7 and 8.8, which illustrates the significance of productive employment and decent work in achieving economic growth and using sustainable production practices—as well as the strong focus that standards have on this issue.

There are notable exceptions to this strong coverage. The criteria selected for SDG 8 do not fall under the purview of sustainable water use and are therefore marked as "not applicable" for the AWS Standard. Additionally, India Organic does not address any social criteria, possibly because, as an NPOP, it would leave national labour

Figure 4. Average degree of coverage of SDG targets 8.7 and 8.8 by VSSs
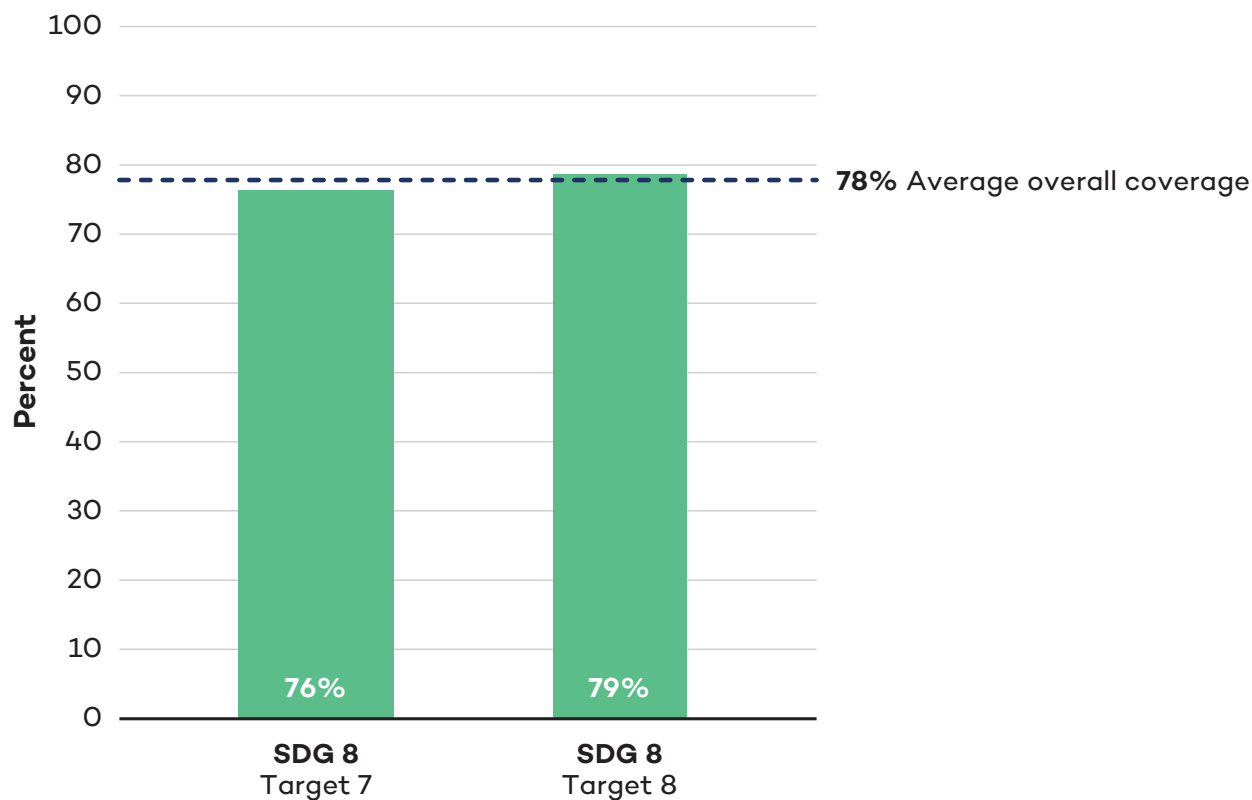
Source: Authors' analysis based on documents listed in Table 2.

laws and other national regulations to cover working conditions and other social criteria. It is worth noting, however, that as India Organic (along with the other VSSs assessed in this report) focuses on sustainable production practices, marking the criteria as "not applicable" would not be accurate, as good labour practices are relevant to organic production. Rather, India Organic has chosen not to focus on this specific criterion, and therefore the criterion is marked as "not covered" in our benchmarking.

2.4.1 VSSs Can Advance SDG 8 by Supporting Efforts to Eradicate Forced Labour and Child Labour

The ILO estimates that at any time in 2016, 24.9 million people were engaged in forced labour, and one in four victims of modern slavery was a child (Internationales Arbeitsamt et al., 2017). The agriculture sector is typically characterized by informal, seasonal, and underpaid employment (Mulder, 2021), and forced labour is a concern due to little and ineffective regulation. With regard to target 8.7, all the examined VSSs except for the AWS Standard

and NPOP have immediate requirements related to forced labour (ILO 29 and ILO 105). With the exception of the AWS Standard, India Organic, and ISCC, all of the assessed VSSs require immediate compliance to prohibit the worst forms of child labour as defined in ILO 182. This signals that many VSSs require compliance with core ILO conventions in their standard documents (Blankenbach, 2020).

Including criteria addressing the worst forms of child labour and forced labour in VSSs can help prevent these human rights infractions, as covered in target 8.7. One such example is a prohibition on retaining workers' personal documents (i.e., passports, ID cards). Employers retaining identity documents or

other valuable personal possessions is a sign of forced labour if workers cannot access these personal documents on request and feel they are unable to leave the job without them, according to the ILO. Without identity documents, workers cannot seek other forms of employment or access essential services (ILO, n.d.-b). The majority of VSSs assessed (nine of 13) require immediate compliance with this indicator.

Another indicator linked to forced labour is the provision of a legally binding work contract. Nine VSSs (4C, ARSO, Better Cotton, CmiA, FSC, ISCC, IFOAM, Rainforest Alliance, and SRP) require immediate compliance with the criterion "equality of workers' rights and benefits by

Table 7. Degree of coverage of VSSs' requirements that advance SDG target 8.7

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Average Coverage SDG8-T07	83	100	-	50	100	100	83	67	83	0	100	100	50	76
Voluntary employment – No forced labour (ILO 29 & 105) (1986)	100	100	-	100	100	100	100	100	100	0	100	100	100	92
Worst forms of child labour (ILO 182) (1979)	100	100	-	100	100	100	100	0	100	0	100	100	100	83

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Child labour and minimum age (ILO 138) (1989)	100	100	-	100	100	100	100	100	100	0	100	100	100	92
Young workers working hours (800019)	0	100	-	0	100	100	100	0	0	0	100	100	0	50
Children's attendance at school (2013)	100	100	-	0	100	100	0	100	100	0	100	100	0	67
Retention of workers' documentation and personal possessions (ID, passport) (10140)	100	100	-	0	100	100	100	100	100	0	100	100	0	75

* Note: Excluding AWS.

way of a legally binding written contract for employment" (UN, 2015). Criteria such as this are relatively easy to verify through a document review and present an opportunity for VSSs to ensure that this is a regular and enforceable practice across their certified units of operation.

2.4.2 VSSs Can Advance SDG 8 by Supporting Labour Rights, Health, and Safety at Work

All of the assessed VSSs except the AWS Standard and NPOP cover the other ILO core conventions on non-discrimination at work (ILO 111), freedom of association

(ILO 87), and collective bargaining (ILO 98) included in target 8.8. Freedom of association enables workers and employers to negotiate work relations effectively. Together with freedom of association, sound collective bargaining practices ensure that employers and workers have equality in negotiations and outcomes. Furthermore, research indicates that most standards have a non-discrimination policy and some also specify gender non-discrimination policies (Sexsmith, 2019). These processes advance anti-discrimination policies, support ILO 111, and promote inclusive and sustainable economic growth for all.

Recently, the ILO added health and safety to the ILO Fundamental Principles and Rights at Work (ILO, 2022). This means that all ILO member states now commit to respecting and promoting the fundamental right to a safe and healthy working environment, regardless of whether they have ratified the relevant ILO conventions. The ILO estimates that more than 3 million workers die each year due to work-related accidents, and tens of millions are injured. Consequently, having health and safety as an ILO fundamental principle will most likely mean increased uptake of this requirement across VSSs and, subsequently, a more effective contribution to SDG 8.

While their strong coverage of the ILO core conventions means that VSSs tend to contribute positively to SDG 8, there are areas for improvement. Fewer than half of the VSSs (SRP, Rainforest Alliance, FSC, Fairtrade International, CmiA, and ARSO) cover young workers' working hours. This could be partially due to perceived difficulties in enforcing compliance in light of the informal, seasonal, and underpaid nature of employment in the agriculture sector. One would expect to see a relatively consistent level of coverage of this issue across national/regional standards, as some labour laws in developing countries may not be that strict. Yet this is not always the case. For example, the Ethical Trading Initiative reports that Zimbabwe is one of the worst countries in terms of worker treatment, yet coverage of the criteria "good conditions of work for young workers" in the country by national/regional standards varies and, according to our analysis of the selected VSSs, they are not covered by ARSO, but they are covered by CmiA and EAOPS.

There is also room for improvement in addressing women's rights at work, with only seven of the assessed VSSs (ARSO, CmiA, Fairtrade International, FSC, ISCC, Rainforest Alliance, and SRP) expecting immediate compliance with this criterion. Women make up the majority of the global agricultural labour force and have historically been denied labour rights. Yet, VSSs still fall behind in adequately supporting gender equality and women's rights in sustainable development.

Although VSSs should not be examined in isolation when considering the potential they have to help achieve the SDGs, it is nevertheless important to look at the unique nature of each standard to determine why some address specific criteria while others do not. For example, IFOAM's low coverage of social criteria may be due in part to the fact that it is considered an "off-the-shelf certification standard" (IFOAM, n.d.) or an umbrella standard, with private and public organic standards endorsed by IFOAM focusing more on local social and/or environmental conditions (i.e., India Organic and EAOPS). Specific characteristics of local VSSs play a role in how they approach certain sustainability issues that are relevant to their communities and, by extension, the SDGs. Nevertheless, including additional social criteria in IFOAM and national organic standards (e.g., India Organic and EAOPS) to protect women and youth could further advance SDG 8.

The 13 selected VSSs, both international and national, generally show strong coverage of SDG 8. Three (CmiA, Rainforest Alliance, and SRP) show 100% immediate compliance coverage across SDG 8 criteria. They are closely followed by ARSO and FSC (with

Table 8. Degree of coverage of VSSs' requirements that advance SDG target 8.8

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Average Coverage SDG8-T08	**94**	**90**	**-**	**74**	**100**	**86**	**100**	**90**	**60**	**0**	**100**	**100**	**50**	**79**
Workers' rights and benefits applicable equally to all types of workers (1982)	100	100	-	100	100	0	100	100	100	0	100	100	0	**75**
Non-discrimination at work (ILO 111) (1987)	100	100	-	100	100	100	100	100	100	0	100	100	100	**92**
Sexual exploitation/ harassment (10090)	100	100	-	100	100	100	100	100	0	0	100	100	0	**75**
Migrant, seasonal, temporary and non-full-time workers' contract employment regarding the protection of their labour rights (800016)	100	100	-	20	100	100	100	100	100	0	100	100	0	**77**
Women's rights at work (2531)	40	100	-	0	100	100	100	100	0	0	100	100	0	**62**
Safety at work (ILO 184) (2001)	100	100	-	20	100	60	100	100	100	0	100	100	100	**82**

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Good conditions of work for young workers (800018)	100	0	-	100	100	100	100	100	0	0	100	100	100	**75**
Occupational health and safety, as defined in ILO 155 (740206)	100	100	-	100	100	100	100	0	0	0	100	100	0	**67**
Freedom of association (ILO 87) (1993)	100	100	-	100	100	100	100	100	100	0	100	100	100	**92**
Collective bargaining (ILO 98) (1996)	100	100	-	100	100	100	100	100	100	0	100	100	100	**92**
Average degree of coverage SDG 8	**89**	**94**	**-**	**68**	**100**	**91**	**93**	**79**	**68**	**0**	**100**	**100**	**53**	**78**

* Note: Excluding AWS.

93.75% and 92.71% coverage, respectively), Fairtrade International (91.25%), 4C (88.96%), and ISCC (79.17%). Leaving the AWS Standard and NPOP aside for reasons explained earlier, relatively lesser coverage is shown by IFOAM (67.71%), Better Cotton (68.13%), and EAOPS (53.13%), which, as already mentioned, focus more on organic agricultural practices and hence do not cover issues such as working hours for young workers, women's rights at work, and occupational health and safety.

To conclude, there is an opportunity for some VSSs to increase their social sustainability efforts in areas such as working hours for young workers, women's rights at work, and better occupational health and safety conditions (albeit with the ILO decision to add health and safety to its Fundamental Principles and Rights at Work, change in the latter area may already be underway [ILO, 2022]) to improve the advancement of SDG 8. Whether operating internationally or on a more localized level, VSSs could consider mainstreaming social requirements into their standards to help strengthen compliance

with ILO core conventions and make a more meaningful contribution to ensuring decent work for all.

2.5 Analysis for SDG 12

SDG 12 seeks to "ensure sustainable consumption and production patterns" (UN, 2015). Targets 12.4 and 12.5 were selected to best inform how the assessed VSSs contribute to the achievement of SDG 12. Target 12.4 aims to achieve environmentally sound management of chemicals and waste, while target 12.5 focuses on waste reduction. The

indicators selected to assess the coverage by VSSs are shown in Tables 9 and 10.

The VSSs assessed show a high degree of diverse coverage across the criteria selected for targets 12.4 and 12.5. Most coverage for target 12.4 is found in criteria on prohibited substances, such as having a list of banned chemicals and pesticides, maintenance of records of chemical use, and proper storage, disposal, and labelling of chemicals and/or waste.

Figure 5. Average degree of coverage of SDG targets 12.4 and 12.5 by VSSs
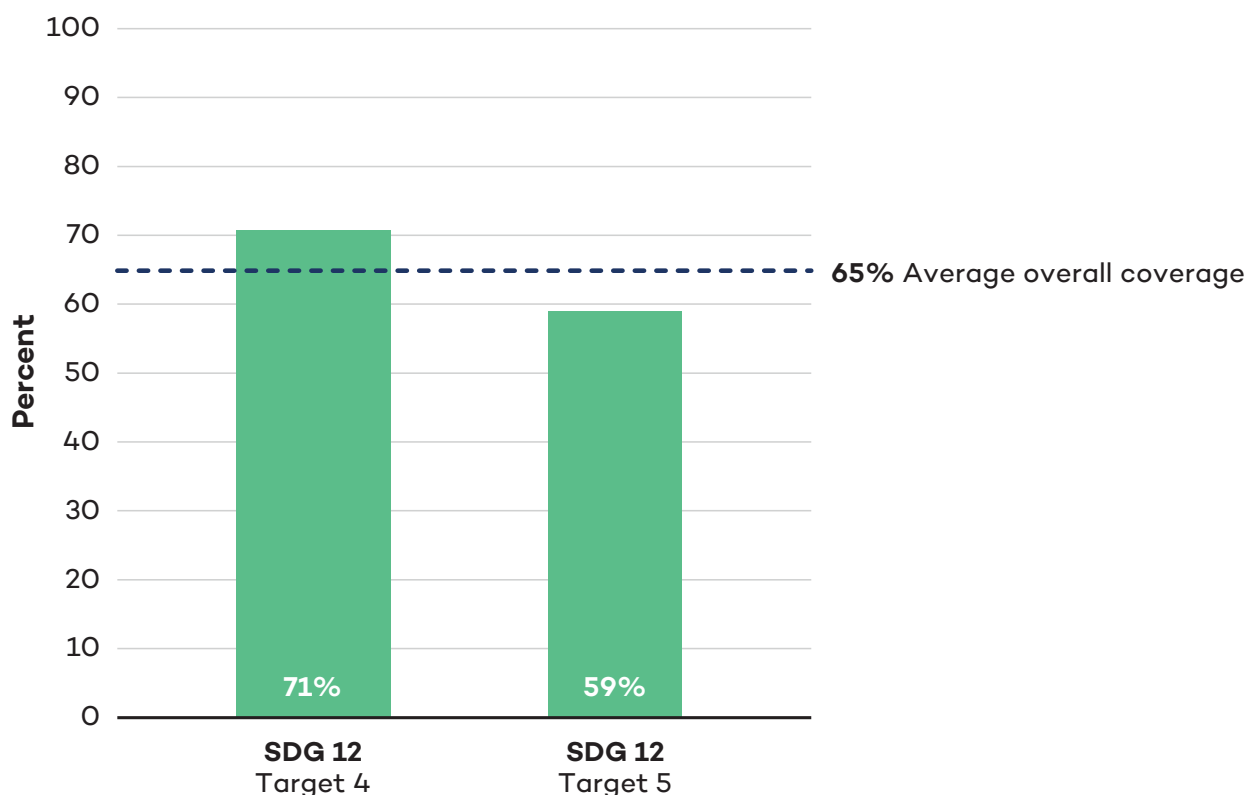
Source: Authors' analysis based on documents listed in Table 2.

2.5.1 VSSs Can Advance SDG 12 by Supporting Environmentally Sound Management of Chemicals and Waste

All VSSs except for the AWS Standard, which focuses on sustainable water use, have immediate compliance requirements pertaining to the prohibition of the use of hazardous chemicals (SDG 12.4) (as defined by WHO categories 1A, 1B, and 2,[9] the Stockholm Convention on Persistent Organic Pollutants,[10] and the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade[11]). However, only eight have immediate requirements for prohibiting the use of hazardous chemicals as defined in the European Regulation No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.[12] ARSO, Better Cotton, CmiA, and SRP do not cover this criterion. In light of increasing global chemical contamination, which threatens the Earth's ecosystems (Carrington, 2022; Naidu et al., 2021; UN Environment Programme, 2019; Wang et al., 2020), the lack of coverage by these schemes could be seen as surprising for the global VSSs, but less so for regional VSSs, given the possible lack of access to scientific information and resources for chemical assessment and reporting.

Eleven VSSs cover criteria related to the disposal of chemical substances or waste, with eight (ARSO, CmiA, FSC, ISCC, IFOAM, Rainforest Alliance, SRP, and EAOPS)

having immediate compliance requirements. Global chemical contamination, which damages the environment, human health, and genetic structures, is a continued concern across industries. Major investment and new techniques are needed to restore contaminated areas (DESA, n.d.-a). VSS requirements aimed at avoiding or minimizing the negative impacts of chemical use on human health and the environment through proper storage, disposal, and labelling of chemicals and/or waste can thus be beneficial not only to meeting SDG target 12.4 but also to improving human and environmental health.

Most of the VSSs assessed (excluding ARSO, Better Cotton, ISCC, and SRP) prohibit the use of genetically modified organisms (GMOs). Arguments have been made for the use of GMOs in agriculture to help achieve zero hunger by 2030 and to aid in food security and sustainability. However, GMO crops can disrupt ecosystems, contaminate water and food supplies, and harm soil microbiomes (Opoku Gakpo, n.d.).

Only IFOAM and NPOP require immediate compliance with the criterion addressing air quality and pollution monitoring, and eight VSSs (ARSO, 4C, Better Cotton, FSC, ISCC, EAOPS, SRP, and Rainforest Alliance) do not cover this issue at all. This may be partly because this criterion does not refer to greenhouse gas (GHG) emissions. Most of the standards in our sample are agricultural standards, and the agricultural sector is a

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[9] See the WHO Recommended Classification of Pesticides by Hazard and guidelines to classification, 2019 edition here: https://www.who.int/publications/i/item/9789240005662

[10] See: http://chm.pops.int/theconvention/overview/textoftheconvention/tabid/2232/default.aspx

[11] See: http://www.pic.int/TheConvention/Overview/TextoftheConvention/tabid/1048/language/en-US/Default.aspx

[12] See: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02006R1907-20221217

Table 9. Degree of coverage of VSSs' requirements that advance SDG target 12.4

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Average Coverage SDG 12-TO4	66	43	-	46	74	91	86	71	71	86	86	57	71	71
Prohibition of use of hazardous chemicals (as defined by WHO categories 1A and B, 2 and the Stockholm and Rotterdam conventions) (2100)	100	100	-	100	100	100	100	100	100	100	100	100	100	**100**
Prohibition of use of hazardous chemicals (as defined by PAN International List of Highly Hazardous Pesticides and REACH Convention) (700402)	100	0	-	0	0	100	100	100	100	100	100	0	100	**67**
Chemical application records and reduction (2098)	40	100	-	100	100	100	100	100	0	100	100	100	100	**87**
Selective and targeted application of chemicals (60024)	60	0	-	100	100	80	100	100	0	100	100	100	0	**70**

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VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Chemical substances disposal/waste (2099)	60	100	-	20	100	80	100	100	100	0	100	100	100	**80**
General prohibition of the use of GMOs/ genetically modified varieties (2655)	100	0	-	0	100	100	100	0	100	100	100	0	100	**67**
Air quality/ pollution monitoring (10076)	0	0	-	0	20	80	0	0	100	100	0	0	0	**25**

* Note: Excluding AWS.

major source of carbon dioxide, nitrous oxide, and methane emissions—all of which are GHGs (International Atomic Energy Agency, 2016; Russell, 2014).

2.5.2 VSSs Can Advance SDG 12 by Supporting Waste Reduction

Few VSSs include criteria for immediate compliance relating to target 12.5, which focuses on reducing waste generation. The highest coverage (10 standards out of 13) extends to the indicator related to the collection, treatment, and disposal of waste, though the degree of coverage varies across schemes. Seven VSSs (ARSO, AWS, CmiA, FSC, ISCC, Rainforest Alliance,

and IFOAM) have immediate compliance requirements for this indicator. Nine VSSs also cover criteria related to the treatment and use of solid waste, with seven (ARSO, CmiA, FSC, ISCC, IFOAM, Rainforest Alliance, and EAOPS) having immediate compliance requirements.

Fairtrade International and 4C are examples of VSSs that require compliance with almost all selected criteria for target 12.5 in a stipulated time period. 4C recognizes the importance of waste management while also acknowledging the time needed to establish effective systems. It requires compliance with all selected waste criteria over time, except for criteria on the treatment and use of non-solid

Table 10. Degree of coverage of VSSs' requirements that advance SDG target 12.5

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Average Coverage SDG12-T05	**63**	**86**	**67**	**20**	**63**	**40**	**100**	**71**	**86**	**14**	**80**	**43**	**43**	**59**
Waste disposal (including solid waste, non-solid waste, excluding hazardous waste) (2050)	60	100	100	20	100	60	100	100	100	0	100	0	0	**62**
Treatment and use of solid waste (22577)	60	100	-	0	100	60	100	100	100	0	100	0	100	**68**
Reducing solid waste volumes (700383)	60	0	-	0	20	0	100	100	100	0	0	0	0	**32**
Reducing/ reusing/ recycling solid waste (2042)	60	100	-	20	20	60	100	100	100	0	60	0	100	**60**
Principles and practices on composting (2051)	40	100	-	0	100	0	100	0	100	100	100	100	100	**70**
Treatment and use of non-solid waste (4084)	100	100	100	0	0	40	100	0	100	0	100	100	0	**53**
Disposal of hazardous waste (700389)	60	100	0	100	100	60	100	100	0	0	100	100	0	**68**
Average degree of coverage SDG 12	**64**	**64**	**67**	**33**	**69**	**66**	**93**	**71**	**79**	**50**	**83**	**50**	**57**	**65**

* Note: Excluding AWS.

waste, for which immediate compliance is required. Rainforest Alliance also recognizes that implementing waste management systems requires both time and compliance with criteria related to reducing, reusing, and recycling solid waste. Better Cotton, India Organic, and FSPO show the least coverage of the criteria selected for target 12.5 among the 13 VSSs.

Only three of the standards cover the reduction of solid waste volumes. The World Bank reports that annual waste generation is expected to climb by 73% to 3.88 billion tonnes in 2050 from 2.24 billion tonnes in 2020. Low-income countries, where 90% of waste is often disposed of in unregulated dumps or burned openly, will feel the greatest impact. Such unregulated practices harm the environment, human health, and safety; create breeding grounds for disease; and generate methane, which contributes to climate change (World Bank, 2022). This makes reducing solid waste one of the key issues on which VSSs could focus. Furthermore, nine out of the 13 VSSs include criteria that support composting, which can reduce farming waste while adding nutrients when applied to soil. Both international and regional standards include these criteria for immediate compliance (ARSO, CmiA, FSC, IFOAM, NPOP, Rainforest Alliance, SRP and EAOPS), suggesting the importance of composting for reducing waste, soil health, and productivity.

FSC and IFOAM have the highest coverage of immediate compliance across the selected criteria for SDG 12, at 92.86% and 82.86%, respectively. IFOAM and ISCC follow with 78.57% and 71.43% coverage, respectively. FSC covers all criteria selected for both targets under SDG 12, except the criteria

on air quality. Like all the VSSs in the sample, FSC prohibits the use of highly hazardous pesticides and has a clear pesticide policy that is updated alongside changing technologies and global circumstances (FSC, n.d.). IFOAM also covers all criteria apart from chemical application records and reduction, selective and targeted application of chemicals, and disposal of hazardous waste, most likely because this standard bans the use of synthetic pesticides. FSC and IFOAM are both well-established global schemes that have the resources needed to tackle the environmentally sound management of toxic chemicals. But this may not be the case for smaller schemes, particularly regional or national VSSs that may be less established and have limited resources at their disposal.

ARSO is a regional standard that shows a high degree of immediate coverage across all the indicators selected for target 12.5, except the reduction of solid waste volumes. Nevertheless, this scheme requires farmers to properly reduce waste, including solid and hazardous waste; treat and use solid waste; and reduce, recycle, and reuse solid waste. Hazardous waste is often mixed with other waste, posing certain management challenges (DESA, n.d.-a). At the World Summit on Sustainable Development in 2002, governments acknowledged the importance of preventing and minimizing waste, which involves the development of environmentally sound facilities for the disposal and conversion of waste into energy (DESA, n.d.-a). In this context, efforts by national VSSs such as ARSO might help improve waste reduction and management at the country level.

In summary, there is potential for VSSs to help accelerate the achievement of SDG

12, especially in relation to the proper use and disposal of chemicals, the prohibition of hazardous substances, supporting composting, and, to a lesser extent, waste reduction, disposal, and treatment.

2.6 Analysis for SDG 15

SDG 15 aims to "protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss" (UN, 2015). Target 15.2 prioritizes the sustainable management of forests, while

target 15.5 focuses on natural habitats, biodiversity, and the protection of threatened species. These two targets were selected to best inform how the VSSs examined contribute to achieving SDG 15 (see Tables 11 and 12).

The 13 VSSs show moderate-to-low coverage across the criteria selected for SDG 15. Higher coverage could have been expected in light of the fact that these standards certify or verify sustainable agricultural commodities provided by terrestrial ecosystems (with the AWS Standard as the notable exception). Most linkages are found with criteria for target 15.2 on enhancing the conservation

Figure 6. Average degree of coverage of SDG targets 15.2 and 15.5 by VSSs
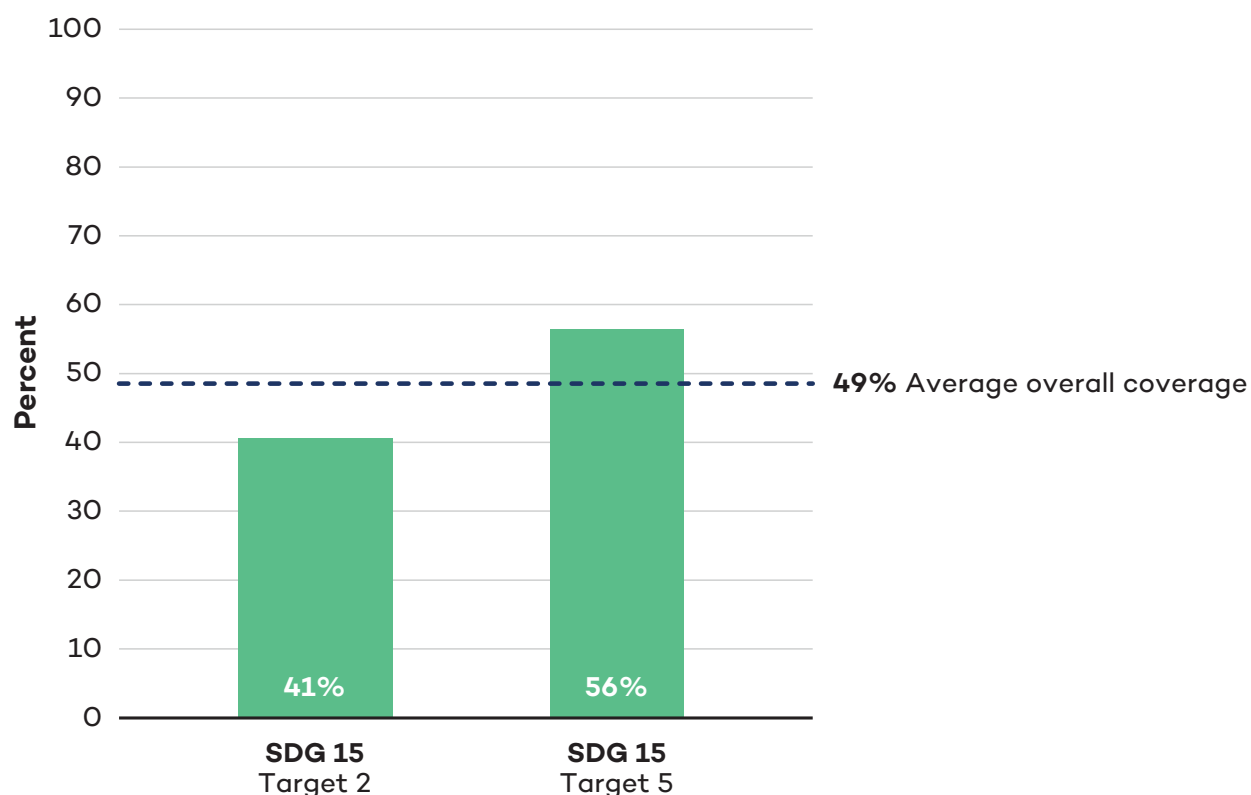
Source: Authors' analysis based on documents listed in Table 2.

of forests, the conversion of forests into production lands, and the prevention of deforestation. Ten VSSs have immediate compliance requirements for the conversion of forest land into agricultural land, and nine have immediate compliance requirements for the conservation of forests. Only two do not prohibit the conversion of forests into production lands: IFOAM and ARSO.

2.6.1 VSSs Can Advance SDG 15 by Supporting Sustainable Forest Management

With regards to target 15.2, only six VSSs (4C, FSC, NPOP, SRP, ISCC and EAOPS) have immediate compliance requirements to prevent deforestation. Two (Fairtrade International and Rainforest Alliance) have time-bound requirements, and one (Better Cotton) recommends compliance. It is worth

noting that a VSS's potential to prevent and reverse deforestation may also depend on the commodity sector in which it operates. It has been argued that Organic certification should elaborate on specific deforestation requirements to avoid leaving the assessment of land-use change up to auditors who may not have adequate information (Tayleur & Phalan, 2016). Rainforest Alliance offers more rigorous protection for forests and other habitats because it has immediate compliance requirements for criteria on converting forests into production lands. These criteria call for requirements against land conversion or requirements on environmental or biodiversity assessments prior to conversion.

In contrast, the VSSs examined have very low coverage of the forest remediation criterion. Only FSC has it as an immediate requirement; Rainforest Alliance has a time-

Table 11. Degree of coverage of VSSs' requirements that advance SDG target 15.2

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Average Coverage SDG15-T02	50	0	-	18	28	48	100	38	25	63	45	38	38	41
Prevent deforestation (2071)	100	0	-	20	0	80	100	100	0	100	80	100	100	65
Sustainable timber harvesting (700375)	0	0	-	0	0	0	100	0	100	100	0	0	0	25

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Enhance conservation of forests (2073)	100	0	-	0	100	100	100	0	100	100	100	100	100	75
Remediate deforestation (1000002)	0	0	-	20	20	0	100	0	0	0	80	0	0	18
Conversion of forests into production lands (2072)	100	0	-	100	100	100	100	100	0	100	100	100	100	83
Regeneration of tree cover after logging (2069)	0	0	-	0	0	0	100	0	0	0	0	0	0	8
High carbon stock area monitoring and management (700397)	100	0	-	0	0	100	100	100	0	0	0	0	0	33
Legal compliance: Harvest rights (740200)	0	0	-	0	0	0	100	0	0	100	0	0	0	17

* Note: Excluding AWS.

bound requirement, and Better Cotton and CmiA have a recommendation for improvement. The remaining VSSs do not cover this criterion. Further, FSC alone covers the criterion for regeneration of tree cover after logging. While global deforestation rates remain high, reforestation efforts can help combat the effects of deforestation. It is worth mentioning, however, that different VSSs deal with different commodities and,

as such, present varying opportunities for reforestation. Extant literature presents mixed results on the effectiveness of VSSs in preventing deforestation (Carlson et al., 2018; Larrea et al., 2021). Nonetheless, enabling reforestation practices could be a good tool for VSSs to boost forest cover and allow for biodiversity conservation.

Low coverage is also observed for the criterion on sustainable timber harvesting,

with only three VSSs (FSC, IFOAM, and NPOP) having immediate compliance requirements and nine not covering it at all. Nevertheless, IFOAM and NPOP do not refer to timber harvest specifically but rather to wild harvest products overall. Only FSC covers the criterion related to ensuring that timber is from a legal origin, even though most importing regions, such as the European Union, have provisions seeking to ensure the legality and traceability of timber back to its origin.

2.6.2 VSSs Can Advance SDG 15 by Supporting Biodiversity Protection

Coverage of the criteria selected for target 15.5 (natural habitats, biodiversity, and threatened species) varies across the VSSs assessed. The highest coverage is found with the criterion of monitoring and protection of High Biodiversity Value Areas, with 11 VSSs having immediate compliance requirements (only NPOP and SRP do not cover it). This is important as High Conservation Value Areas (HCVAs) are designated due to their high biological, ecological, social, or cultural values. Other criteria with high coverage among the VSSs examined concern spatial management, with eight of the VSSs having immediate compliance requirements. Requirements pertaining to spatial planning to avoid biodiversity loss may include the creation of designated conservation areas, buffer zones, designated wildlife corridors, or designated zonal areas—areas that keep two or more areas distant from one another to protect the environment, wildlife, and ecosystem. Including spatial management techniques could be important for implementing the recently adopted

Kunming–Montreal Global Biodiversity Framework, as well as a good opportunity for VSSs to contribute to the protection of biodiversity and SDG 15.

Only six of the VSSs examined include immediate compliance requirements to conduct an assessment of risks and impacts on biodiversity, which raises the question of how biodiversity loss can be mitigated/remediated if the degree of potential loss is unknown before operations. An environmental risk and impact assessment measures and prioritizes the risks and opportunities arising from identified impacts of agriculture operations in nature as well as their dependency on natural capital (Mazzacurati et al., 2021). Also worth noting is that only four of the VSSs examined require immediate adherence to international and national conventions on biodiversity and best practices, while 4C and Fairtrade International require this to be achieved over time. The lowest coverage is found with the criterion related to maintaining biodiversity hotspots as defined in the ITC Standards Map (ITC, n.d.). Only two of the assessed VSSs (CmiA and Rainforest Alliance) cover this criterion, while 10 do not cover it (not applicable for the AWS Standard). While the role of VSSs—especially those active in the agriculture sector—in biodiversity conservation has been broadly discussed in extant literature (e.g., Fransen et al., 2018; Potts et al., 2017; Tayleur et al., 2017), mixed results have been reported on their impacts. Expanding coverage of these issues can thus be a step for VSSs to advance their contributions to the protection of biodiversity.

SDG 15 coverage also has mixed results for international and national VSSs. FSC, at 93.75%, shows the highest degree of

Table 12. Degree of coverage of VSSs' requirements that advance SDG target 15.5

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Average Coverage SDG15-T05	**63**	**88**	**60**	**38**	**80**	**50**	**88**	**50**	**50**	**25**	**98**	**13**	**38**	**56**
Protection of rare, endangered, or threatened species and their habitats (700369)	100	100	-	0	20	60	100	0	0	100	100	0	0	**48**
Ensure adherence to international and national conventions on biodiversity and best practices (CITES, CBD, CMS, UNCCD, among others*) (700368)	40	100	-	0	100	60	100	0	0	0	100	0	0	**42**
Legally protected and internationally recognized areas for their biodiversity (30022)	100	100	-	0	100	100	100	0	0	0	100	100	100	**67**
Spatial management criteria (creating/ maintaining/ protecting set-asides, buffer zones, or conservation areas) (4091)	60	100	-	100	20	40	100	100	100	100	100	0	100	**77**

VSS Content Criteria (numeric code in ITC Standards Map)	4C	ARSO	AWS	Better Cotton	CmiA	FSPO	FSC	ISCC	IFOAM	NPOP	Rainforest Alliance	SRP	EAOPS	Average Coverage*
Assessment of risks and impacts on biodiversity in (as well as outside) management or production unit (300457)	60	100	-	0	100	0	100	100	100	0	100	0	0	55
Biodiversity hotspots (1000005)	0	0	-	0	100	0	0	0	0	0	100	0	0	17
Habitat/ ecosystem restoration/ rehabilitation (2124)	40	100	20	100	100	40	100	100	100	0	80	0	0	63
Criteria for the monitoring and protection of High Conservation Value Areas (4090)	100	100	100	100	100	100	100	100	100	0	100	0	100	83
Average SDG 15														49

* Note: Excluding AWS.

immediate compliance coverage for SDG 15 criteria, which can be attributed to its high coverage of criteria selected for this SDG, specifically forest management and protection of natural habitats. FSC is followed by Rainforest Alliance at 71.25%, and 4C and CmiA, at 56.25% and 53.75%, respectively. These standards cover criteria related to the conservation of forests and adherence to international and national conventions on biodiversity. Better Cotton and SRP show low coverage, with 27.5% and 25%

coverage, respectively. SRP and IFOAM come up short in monitoring and managing High Carbon Stock areas. Rice cultivation provides an opportunity for VSSs to consider increased monitoring and management of High Carbon Stock areas and to contribute to these areas through tree regeneration or spatial management (creating/maintaining set-asides, buffer zones, or conservation areas), which could greatly boost biodiversity in rice cultivation—yet SRP does not cover either of these two criteria. This means there is potential for SRP to increase efforts to advance SDG 15 targets.

The national VSSs assessed also have limited coverage of criteria, with ARSO at 43.75%, NPOP at 43.75%, and EAOPS at 37.50%. India Organic covers important criteria linked to both SDG targets, including the prevention of deforestation, sustainable timber harvesting, enhancing conservation of forests, protection of endangered species, and spatial management. However, it falls short on others, such as the regeneration of tree cover, the remediation of deforestation, and adherence to international and national conventions on biodiversity. EAOPS also does not cover many of these issues and does not require compliance with the criterion for sustainable timber harvesting. ARSO requires immediate compliance with almost all of the criteria under target 15.5 but does not cover any of the selected criteria for target 15.2. This indicates that there is room for national standards to increase work in the domain of sustainable management of forests and addressing the causes of deforestation.

With low and varied coverage of the selected criteria and a lack of impact reporting by some of the assessed VSSs (e.g., India Organic and EAOPS), it is challenging to

determine if standards contribute positively to the achievement of SDG 15. Based on the coverage of SDG 15 across the assessed VSSs, there are clearly ample opportunities for these standards to increase efforts to contribute to protecting, restoring, and promoting the sustainable use of terrestrial ecosystems, managing forests sustainably, and halting and reversing land degradation and biodiversity loss.

2.7 Concluding Remarks

Extant research on VSSs in the agricultural sector mainly focuses on their contribution to human rights, workers' wages, and biodiversity conservation. While most of these issues are tied to the SDGs, their alignment with the goals and their role in advancing them has not been deeply explored. The benchmarking exercise in this report highlights the links between a selected sample of VSSs (4C, ARSO, AWS, Better Cotton, CmiA, Fairtrade International, FSC, ISCC, IFOAM, NPOP, Rainforest Alliance, SRP, and EAOPS) and a selected set of SDGs (SDG 2, SDG 6, SDG 8, SDG 12, and SDG 15) and their targets (2.3, 2.4, 6.3, 6.4, 8.7, 8.8, 12.4, 12.5, 15.2, and 15.5).

Our analysis of these VSSs reveals that there are many areas in which they can advance the SDGs, including by promoting policy coherence and synergies in implementation. For SDG 2, for example, the 13 VSSs are strongly positioned to improve conditions for promoting land rights and land tenure, contribute to soil conservation, and have processes in place to ensure good soil performance based on its quality, productivity, and biodiversity. We also find that for SDG 6, most VSSs are aligned with

the requirements to ensure water quality, prevent water pollution, and support the efficient use of water extracted for irrigation. For SDG 8, we observe relatively higher linkages overall, with a strong focus on issues around forced labour, child labour, and discrimination at work.

VSSs' focus on sustainable consumption and production practices results in higher linkages with SDG 12. We find a strong focus on prohibiting the use of hazardous chemicals and GMOs; disposing of chemical substances or waste; collection, treatment, and disposal of waste; and composting. Lastly, for SDG 15, we observe more linkages around the issues of forest conservation, monitoring, and protection of HCVAs, and the use of spatial planning to avoid biodiversity loss.

Our analysis reveals a mixed trend of linkages with the SDGs for the international and regional/national VSSs assessed. For instance, for SDG 2, the international standards show more coverage of the selected indicators— such as customary rights and tenure and access to inputs, varieties, or technology— while the national VSSs, owing to their focus on specific issue areas, show overall less coverage. At the same time, for SDG 6 and SDG 8, we observe high linkages for both national and international standards. ARSO is the regional/national standard with the highest degree of coverage across the SDGs and targets examined.

VSSs are becoming increasingly popular. For agricultural commodities, the certified area grew by at least one third between 2015 and 2019 (Meier et al., 2021). The highest 4-year growth (2015 to 2019) was reported for sugarcane (+123.7%), followed by cotton (+99.9%) and cocoa (+53.2%). The highest 1-year growth (2018 to 2019) was reported for sugarcane (+14.8%), followed by cotton (+11.2%) and tea (+8.1%) (Meier et al., 2021). Given this kind of market influence, VSSs have an opportunity to contribute significantly to the achievement of the SDGs.

However, while our analysis offers an indication of the extent to which VSSs can potentially contribute to the SDGs, impact reporting, as noted earlier, is required to truly understand the degree to which a standard is contributing to the SDGs. If a standard does not report on its impacts, which is costly and resource intensive, then directing efforts effectively could prove challenging.

In the following chapter, we present evidence of VSSs' contributions to the SDGs, including case studies of the work that selected standards perform in Uganda, India, and Tanzania. The chapter offers examples of how countries could use such information to bolster government reporting on SDG progress to the HLPF. Section 4 offers guidelines for governments that might wish to do so.

3.0 Reporting Examples

This chapter provides three practical examples of how VSSs' content criteria and information about their performance on the ground can be leveraged to support SDG progress reporting in countries' VNRs. The examples cover Uganda, India, and Tanzania, which were selected[13] based on the presence and coverage of VSSs, the VNR reporting cycle (all three countries have reported to the HLPF at least once), past International Institute for Sustainable Development research, and data availability, and draw on the reporting elements contained in the UN Secretary-General's voluntary common reporting guidelines (DESA, 2022). The examples focus on a set of preselected SDG targets (see Section 2) but also highlight contributions to promote gender equality (SDG 5), which underpins the success of the entire 2030 Agenda. The case studies strengthen the analysis we conducted based on VSSs' content criteria, as they demonstrate the actual outcomes of compliance with VSS requirements on farmers, communities, and smallholders in terms of the delivery of social and environmental benefits and help inform the general guidelines for leveraging VSSs' work for impact-based reporting in VNRs (see Section 4).

The chapter highlights examples of good practice and lessons learned featured in green boxes (⚕), along with examples of positive contributions to women's empowerment and gender equality in purple boxes (⚕).

3.1 Uganda

3.1.1 Introduction

Uganda is a landlocked state in central East Africa that shares a border with the Democratic Republic of the Congo, Kenya, Rwanda, Sudan, and Tanzania. It has a population of almost 46 million people, and it is one of the fastest-growing populations in the world, including a significant refugee population (CmiA, n.d.-b). Three quarters of the population of Uganda live in rural areas.

Agriculture is Uganda's primary economic sector, making up 72% of total employment and contributing around 25% to the total GDP from 2016 to 2017 (Ministry of Agriculture, Animal Industry and Fisheries, n.d.; World Bank, n.d.). Uganda's agricultural potential is considered among the best in Africa, with low temperature variability, fertile soil, and two rainy seasons in much of the country—leading to multiple crop harvests every year (International Trade Administration, 2022). According to the FAO, Uganda's fertile agricultural land has the potential to feed 200 million people. Most of the working population is engaged in agriculture, forestry, and fishing (65%), according to the Uganda National Household Survey 2016/2017 (Uganda Bureau of Statistics, 2018). Some 70% of women are involved in agriculture, compared to 58% of men (Ministry of Agriculture, Animal Industry and Fisheries, n.d.), although crops managed by men tend to be larger and are more likely to be cash crops (Bowen et al., 2015). Subsistence farmers who produce primarily for their own needs dominate the sector (CmiA, n.d.-b).

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13 At least six researchers were consulted on the selection to minimize subjective bias.

⚥ Gender equality and the SDGs

All UN member states adopted the 2030 Agenda for Sustainable Development in 2015. The 17 SDGs were designed based on the notion that ending poverty and achieving equality can only be sustainable if no one is left behind (DESA, n.d.-b). Gender equality and the empowerment of women are both preconditions for—and one of the results of—sustainable development. The 2030 Agenda considers gender equality to be both a target requiring its own specific goal (SDG 5) and a central component to be incorporated across the whole 2030 Agenda (UN, 2019).

Incorporating gender equality and the empowerment of women and girls in VSSs' content criteria and activities can multiply their impacts. Including women in sustainable food production, for instance, can and will affect their exposure to poverty (SDG 1), access to food (SDG 2), capacity to make decisions for themselves (SDG 5), and access to decent work (SDG 8), among other impacts. This demonstrates that considering the specific needs and capacities of women across development efforts can multiply the effects of an intervention across the SDGs, creating a spillover effect (Organisation for Economic Co-operation and Development [OECD], n.d.).

Coffee, tea, and cotton are particularly significant as agricultural export commodities, and coffee contributes the highest revenue for Uganda (CmiA, n.d.-b). The ITC Standards Map highlights that around 69 agricultural VSSs operate in Uganda, including 4C, CmiA, Fairtrade International, FSC, GlobalGAP, Organic, and Rainforest Alliance. Together, these standards have around 1,016,973 ha of land under certification and engage 1,086,710 producers (ITC, n.d.). In addition, Uganda has 210,353 organic producers, the second highest globally after India (Willer et al., 2021). Uganda participates in the regional African Organisation for Standardisation sustainability and eco-labelling scheme.

3.1.2 Leveraging VSSs Operating in Uganda to Report on SDG Progress

Uganda's second VNR, submitted to the HLPF in 2020, covers all 17 SDGs. In it, Uganda notes that in 2019, the national SDG task force established a multi-institutional advisory committee to provide oversight to all processes leading to the VNR report (Office of the Prime Minister, 2020). The committee comprises representatives from ministries, departments, agencies, parliament, UN bodies, civil society organizations (CSOs), and the private sector. Online **consultations** were conducted with citizens, including young people and children, to identify areas where Uganda is making good progress on the SDGs and where it needs to do better; ways to mainstream the principle of leaving no one behind; a role for local governments

to accelerate the SDGs; local examples that have supported SDG implementation in the country; and opportunities government and non-state actors could leverage to accelerate progress toward achieving the 2030 Agenda.

The country's 2020 VNR further mentions that Uganda is "among the first four countries to roll out a new approach of voluntary reporting at the local level beginning with Ngora Local Government in Eastern region," whose review addressed the institutional frameworks and "leave no one behind" aspects in the district development agenda (Office of the Prime Minister, 2020, p. 4). With support from the UN Economic Commission for Africa, this approach was conceptualized as a tool for "**meaningful multistakeholder engagement and mobilization** to advance implementation of the 2030 Agenda and Agenda 2063" (Office of the Prime Minister, 2020, p. 4, emphasis added). Harnessing data from VSS applications could make a significant local contribution to SDG monitoring and reporting.

According to Uganda's 2020 VNR, diverse stakeholders, such as local governments, parliament, CSOs, and the private sector, have been actively involved in SDG implementation efforts (Office of the Prime Minister, 2020). The country's private sector promotes initiatives that support all 17 SDGs. For example, with support from the UN Development Programme, 45 firms are working to promote gender equality in the workplace through the Gender Equality Seal Certification Programme (SDG 5). The private sector invests in agricultural production (SDG 2), manufacturing (SDG 9), health care (SDG 3), education (SDG 4), and provisions for

employment and management of labour relations (SDG 8). The Nationally Determined Contributions Support Programme supports the private sector's climate change mitigation efforts by promoting green investments under SDG 13.

While Uganda's second VNR does not mention whether stakeholders brought up VSSs and their role in advancing SDG implementation and reporting during the consultations, leveraging VSS-related data could provide innovative opportunities for the government to document and report progress on SDG implementation. The **Private Sector SDG Platform** brings together stakeholders to discuss Uganda's private sector engagement in SDG implementation. VSS bodies typically work with many private companies (e.g., agribusinesses, cooperatives, processors, and manufacturers) to support advancing sustainable production and trade. Their involvement in the Private Sector SDG Platform could therefore provide useful insights and new data sources to report on SDG progress. The advanced level of stakeholder engagement and VSSs' representation in Uganda provides a good basis for incorporating VSS-related data in SDG reporting. Uganda could draw on VSSs' content criteria and related case studies of the activities that VSS bodies conduct with farmers on the ground to support compliance with the criteria, with corresponding results, to present examples of local contributions to the SDGs and related targets. It could also contribute to other relevant VNR sections, including methodology and process, institutional mechanisms, and means of implementation. For example, gathering VSS data and insights on local working conditions on coffee or cotton farms, the adoption of

sustainable production practices, or gender equality in agriculture could inform progress toward achieving the SDGs.

3.1.3 Reporting Example

The present reporting example considers Uganda's national context, as reported in its 2020 VNR. It covers sections from the Secretary-General's common reporting guidelines for VNRs contained in the 2022 *Handbook for the Preparation of Voluntary National Reviews* that we have deemed the most relevant for leveraging VSS-related information (DESA, 2022) (see also Section 4). The subheadings used in the reporting example correspond to the headings used in the relevant sections of the Secretary-General's common reporting guidelines. The selection of SDG targets for reporting is determined by the scope of the present study and case study availability (e.g., if no case studies have been identified for one of the selected SDG targets, the reporting example does not cover that target).

3.1.3.1 Methodology and Process for Preparing the Review

In this section, the government could reiterate that the online consultative processes underpinning its 2020 VNR development have not only enabled marginalized groups to participate but also "cost much less than traditional approaches, making more resources available for other budget-constrained national processes" (Office of the Prime Minister, 2020). In line with plans outlined in the VNR to "build on these experiences in **future consultative processes across sectors**" (Office of the Prime Minister, 2020, emphasis added), the government could undertake efforts to

invite VSS certification bodies and VSS-certified entities in the country to engage in such consultative processes to harness opportunities for incorporating VSS-related data in SDG reporting.

The government could emphasize that Uganda's VNR preparation process involves a broad range of stakeholders, including various government departments, parliament, UN agencies, CSOs, and the private sector, and that many of these actors are also stakeholders in VSS bodies, which could help facilitate the process of data gathering and management, particularly at the local level.

3.1.3.2 Institutional Mechanisms

In this section, the government could reiterate that a **multistakeholder National SDG Coordination Framework** established in 2016 guides institutional delivery on the SDGs in Uganda. Its five working groups include representatives from relevant ministries, civil society, the private sector, academia, and development organizations. The government could rely on these institutional structures to facilitate the mobilization of VSS-related data and any input from VSS bodies and VSS-certified entities.

The government could also mention Uganda's efforts to roll out the SDG process at the **subnational level** through a "**collaborative and multistakeholder approach**" (Office of the Prime Minister, 2020, emphasis added). It could note that while many local government leaders have limited information on localizing the SDGs and have difficulty relating the 2030 Agenda to their everyday work, efforts to "contextualize the SDGs and mobilize communities to own their development

agenda" have been made, with limited resources (Office of the Prime Minister, 2020, p. 7). One example is the implementation of the Local Government Councils' Scorecard by an independent think tank, the Advocates Coalition on Development and Environment, which disseminates research findings on numerous topics and policy recommendations to local governments. The government could suggest that, in this context and in light of limited resources, leveraging information on the implementation of VSSs in Uganda from case studies or aggregated data from VSS-compliant producers could provide a valuable contribution to understanding, tracking, and reporting SDG progress at the local level.

3.1.3.3 Progress on Goals and Targets and the Evaluation of Policies and Measures

In this section, Uganda could illustrate how VSSs' content criteria can help assess where to target data collection on VSSs' activities, in order to gather information to report on SDG progress. Based on our review of literature on VSSs' activities in Uganda,[14] we find that VSSs can help in advancing SDG target 2.3 the most, with multiple examples given below on how standards are ensuring more robust livelihoods and reliable incomes. There is also considerable VSS support for SDG targets 8.7 and 8.8 on eliminating child labour and establishing safe working conditions, respectively. Finally, we have identified case studies on how VSSs are advancing target 2.4 on sustainable food production systems, target 12.4 on the responsible use of agricultural chemicals, and target 15.2 on reducing deforestation. No case

studies have been found documenting direct contributions by VSSs to targets 6.3 and 6.4, 12.5, and 15.5.

SDG 2 (Zero Hunger)

Uganda's 2020 VNR reporting on SDG 2 mainly focuses on nutrition and does not address the targets of interest to the present study. To report progress on SDG targets 2.3 and 2.4 in future VNRs, the government could highlight several case studies, as illustrated below, where VSSs help: **improve incomes** (VSS content criteria 1991) by **providing diversification opportunities** (VSS content criteria 700413) and **promoting access to markets** and **financial services** (VSS content criteria 1959 and 1973); advance women's **land-title and legal-use rights** (VSS content criteria 4078); and achieve benefits across multiple goals and targets through **training programs on sustainability issues** (VSS content criteria 300451), including improved agricultural **production efficiency and productivity** (VSS content criteria 1971) and gender equality (SDG 5).

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[14]   Resources consulted include VSS impact reports, country case studies published as news stories, and other types of data produced by VSSs, e.g., *Data Sheet for Child Labor and Forced Labor Risk Maps* by Rainforest Alliance (2021a).

SDG target 2.3:

"By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment." (UN, 2015)

In this section, the government could note that VSSs in Uganda help **improve the incomes of farmers** in diverse ways (VSS content criteria 1991), such as by ensuring a premium for certified products, lowering production costs for farmers, and providing more reliable prices in global markets. For example, nearly all Gumutindo Coffee Cooperative's 7,000+ members are Fairtrade certified. Fairtrade certification helps provide fair prices for farmers during market shocks when world prices for coffee are low. To maintain certification and the higher prices they can fetch, the cooperative focuses on maintaining good-quality, high-grade products so farmers can maintain this competitive advantage (Irish Aid, 2014).

4C assessed the impact of production costs in Uganda from 2008 to 2015. The study found that 4C-certified farmers, which numbered about 24,500 in 2015, had lower production costs per unit of land and per unit of green coffee compared to non-certified farmers. As a result, 4C-verified farmers showed a major improvement in net income per million tonnes of green coffee. Self-reported dietary improvements in terms of quality and protein intake were also noted, which contribute to better health and well-being (SDG 3). These improvements align with the 4C standard requiring farmers to collect information so they can make informed decisions on inputs (4C Association, 2016).

Another, more general study on Fairtrade International, Organic, and UTZ in Uganda found that smallholder coffee farmers who are VSS-certified have higher incomes, better nutrition and diets, and higher levels of gender equity overall, as women have greater control over production and monetary revenues from sales (Chiputwa & Qaim, 2016), helping to advance several SDGs, including SDGs 2, 3, and 5.

Several coffee farming cooperatives in Uganda use the Fairtrade Premium to alleviate poverty in their communities. The Central Coffee Farmers Association, for example, is a farmer-owned organization growing Robusta coffee near the shores of Lake Victoria. Nearly half of its 36,664 farmer members are 4C and Fairtrade certified. They use the Fairtrade Premium to invest in community infrastructure such as wells, latrines, health care centres, and electricity infrastructure. Fairtrade International has also encouraged farmers from the association to diversify their agricultural activity to generate side incomes, including poultry farming (The Belgian Development Corporation, n.d.). Similarly, farmers of the Kibinge Coffee Farmers Cooperative Society growing Robusta coffee in the Kibinge region have used the Fairtrade Premium to invest in repairing roads, which can be impassable during the rainy season; to source new seeds and appropriate varieties; and to set up a farming supply shop, establish a credit union, build a factory for processing coffee on-

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site, and open a visitor's centre (Fairtrade Foundation, n.d.-b). Joining Fairtrade International has opened up new and reliable international markets for the Kibinge Coffee Farmers' Cooperative Society, a third of whose members are women, and built up extensive international networks of buyers and roasters (Fairtrade Foundation, n.d.-b).

These examples show how VSSs can help **improve incomes** (VSS content criteria 1991) by **diversifying business operations** (VSS content criteria 700413), promoting **access to improved varieties** (VSS content criteria 300467), and providing **access to markets** and **financial services** (VSS

content criteria 1959 and 1973). By boosting incomes, standards enable investments that can help address **water scarcity** (VSS content criteria 2036), promote access to health care (SDG 3), and improve infrastructure, with co-benefits for SDGs 7 (affordable and clean energy) and 9 (industry, innovation, and infrastructure), among others.

The government could point out that some VSSs in Uganda focus their efforts on improving the farming and business practices for women farmers in particular, which is having a positive effect on incomes in many cases. CmiA in Uganda, for instance, tailors its educational programs to women. So-

⚥ Gendered access to financial services, markets, and land rights

Women's participation in agriculture, and especially in cash crops, hinges on their access to financial services and markets. Women face historical and structural barriers to accessing financial services, which affects their capacity to open bank accounts and save, as well as to obtain credit, loans, and insurance. Although there is no legal provision prohibiting women from accessing financial institutions in Uganda, many require women to furnish proof of consent from their husbands to open a personal bank account (OECD, 2015). Additionally, access to credit and loans is often tied to ownership of and access to assets. Uganda's land rights governed by customary law make it difficult for women to own land, affecting their capacity to access financial services (OECD, 2015).

Another major constraint on women's economic empowerment in agriculture is related to their access to land rights, which include land ownership and land use. While women are responsible for more than half of crop production in the country, it is estimated that they own about 30% of land, formally or informally (LANDnet Uganda, 2020) The reasons for this gender gap are varied and mostly entrenched in the customary laws governing land tenure.

VSSs' training targeting women and men has improved women's access to land titles, which, in turn, has enabled better access to financial services. Along with further training in business, leadership, and financial literacy among women, such training can help change the structural inequalities that keep women from benefiting from income-generating activities.

✪ Good practice example

Fairtrade International has been delivering business and leadership skills training and support to the Gumutindo Coffee Cooperative. The training of more than 1,200 women has delivered two notable outcomes. First, the training informed farmers about the importance of diversifying sources of income beyond coffee, even if that remains the main source of earning, into other crops or enterprises. Women farmers are now also selling vegetables, kerosene, and other products, earning extra income of their own (Women in Informal Employment: Globalizing and Organizing, n.d.). Second, an important outcome of the training has been informing women about the land tenure system and how to obtain the legal title for their land. As women became aware that they could own land alongside their husbands, more joint legal titles were being issued, or women received land holdings in their own names from their husbands. This is an example of how VSS-supported educational efforts can promote gender equality (SDG 5) in accessing land titles and income improvements under SDG 2, among other benefits.

called Farmer Business Schools teach women to manage the farm like a business, assess market and production risks, and manage budgets and savings. Improvements in yields and income are noted following these training sessions (CmiA, 2019a). Similarly, Fairtrade International has been delivering training and support on business and leadership skills to the Gumutindo Coffee Cooperative. The training of more than 1,200 women has delivered two notable outcomes. First, the training informed farmers about the importance of diversifying sources of income beyond coffee, even if it remains the main source of earning, into other crops or enterprises. Women farmers now also sell vegetables, kerosene, and other products, earning extra income of their own (Women in Informal Employment: Globalizing and Organizing, n.d.). Second, an important outcome of the training has been teaching women about the land tenure system and how to obtain the legal title for their land. As

women became aware that they could own land alongside their husbands, more joint legal titles were being issued, and women increasingly had land holdings in their name that they had received from their husbands (WIEGO, n.d.). Women accounted for just 13% of Gumutindo's membership at the outset of the project; afterward, women's membership in the cooperative surpassed 21% (WIEGO, n.d.).

These efforts demonstrate how VSS-enabled **training programs on sustainability issues** (VSS content criteria 300451) can advance women's **land-title and legal-use rights** (VSS content criteria 4078), help **improve incomes** (VSS content criteria 1991) by **diversifying business operations** (VSS content criteria 700413), and deliver multiple benefits for gender equality (SDG 5).

The government could also note that VSS certification can contribute to opening new

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⚧ Kyagalanyi's coffee game

Kyagalanyi began a gender program in 2017 to complement its sustainability programs. The trading group uses a range of gender tools, including the "coffee game," to increase financial transparency, collaboration, and decision making between couples at the household level. Kyagalanyi has 70 gender clusters aligned with farmer groups. Each cluster has its own village savings and loan association. Kyagalanyi has reached 1,400 households through its gender program. Preliminary findings show that households participating in the program produce higher yields and have greater loyalty to Kyagalanyi as their buyer. This initiative contributes to SDG 5 on gender equality and the empowerment of women and girls (AgriProFocus, n.d.).

markets, at home and abroad. An example is the Ngong Organic Farmers Association, a community-based organization whose members find that third-party certification is not an economically viable option. Instead, they have developed a simplified version of the EAOPS, with 1,010 requirements and a participatory guarantee system to certify farmers. They market their organic produce through organic farmers' markets, shops, and restaurants. This shows how VSS certification can facilitate **access to distribution networks and markets** (VSS content criteria 1959) while verification schemes, such as a participatory guarantee system, can reduce the costs of VSS compliance.

SDG target 2.4:

"By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality." (UN, 2015)

Here, the government could note that VSSs advance sustainable agricultural production methods, and in Uganda, many VSS-certified farmers receive training and specialized information on production methods. In cotton farming, for example, CmiA has certified the Western Uganda Cotton Company, which brings together more than 5,000 cotton farmers (Ecotextile News, 2015). Farmers working with the company get regular "training in modern, efficient, and environmentally friendly cultivation methods that allow them to increase the quality of their

cotton as well as their crop yields, and thereby generate higher incomes" (Ecotextile News, 2015). Training topics include using "gentle pest control," using natural rainfall instead of irrigation, and rotating crops to promote soil fertility. Farmers attest to improved agricultural planning since the training, such as "early land preparation, early planting, proper plant population, early weed control, and proper pest control," leading to improved yields (CmiA, 2019b). Coffee companies such as Kyagalanyi Coffee Ltd., part of the Volcafe Group and one of the world's largest traders of Arabica and Robusta coffee varieties, underline farmer training for more sustainable practices. Working with UTZ (which has since merged with Rainforest Alliance), Kyagalanyi has sent agronomists and other specialists on farm visits, offering agronomy training to farmers and projects dedicated to **youth employment** (VSS content criteria 800018), **climate resilience** (VSS content criteria 701327), and gender equality (SDG 5) (Stop Child Labour, 2022).

These examples show how **sustainability training programs** (VSS content criteria 300451), among other benefits, can help improve agricultural **production efficiency and productivity** (VSS content criteria 1971) through practices such as **soil enhancement by crop rotation** (VSS content criteria 300622), **IPM** (VSS content criteria 2106), and using rainwater for **irrigation** (VSS content criteria 10086), thereby also delivering **improvements in income** (VSS content criteria 1991).

SDG 8 (Decent Work and Economic Growth)

Uganda reported high levels of child labour in the country in its 2020 VNR: 15.1%

overall (13.5% for girls and 16.8% for boys), with regional variations. In the Busoga subregion, for example, where children work on sugarcane plantations, child labour is as high as 53% (Office of the Prime Minister, 2020). Uganda seeks to eliminate child labour by implementing its National Child Labour Policy and other interventions. The government could use the case studies described below to illustrate the challenges and achievements in the implementation of SDG 8 targets of interest and how VSSs complement government efforts through the practical application of their content criteria.

SDG target 8.7:

"Take immediate and effective measures to eradicate forced labor, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labor, including recruitment and use of child soldiers, and by 2025 end child labor in all its forms." (UN, 2015)

The Rainforest Alliance published a report in 2021 that found child labour is rampant in Uganda, with only half of all children completing primary school and most child labourers working in the agricultural sector, such as on coffee and cotton plantations (Newsom et al., 2021). The report shares the results of a study undertaken with Uganda's Kyagalanyi Coffee to compare different approaches to prevent or reduce child labour. The most effective method was found to be establishing child labour-free zones— geographical areas where all children go to school, thus ensuring that support given to families in the field promotes children's development. This approach requires that

Rainforest Alliance certificate holders collaborate with local partners, including schools, communities, and local governments, to tackle the root causes of child labour and send a clear message: "All children must be in school" (Newsom et al., 2021). Rainforest Alliance is working with many partners to identify cases, raise awareness of the risks of child labour, and change family behaviour. Where possible, Child Labor Free Zones are established, which is considered a best practice (Stop Child Labour, 2022). These initiatives complement the government's efforts to reduce **child labour** (VSS content criteria 1979 and 1989) by encouraging **children's school attendance** (VSS content criteria 2013).

SDG target 8.8:

"Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment." (UN, 2015)

The COVID-19 pandemic has presented challenges for Uganda's horticulture sector, as sales in cut flower exports to Europe declined by as much as 90% due to lockdowns of shops, restaurants, and hotels. In spite of these tough conditions, farmers working on any of Uganda's six Fairtrade-certified flower and plant farms—accounting for about half of Uganda's sector—have benefited from strong employment protection. As the right to unionize is guaranteed under Fairtrade International, farmers have worked together under Uganda's Horticultural, Industrial, Service Providers and Allied Workers' Union to engage in discussions with employers

and, ultimately, to raise wages, in spite of the pandemic and the unsold volumes of flowers. Salary increases, in addition to the Fairtrade International floor wage, have meant that workers are protected from falling into poverty and hunger (Fairtrade International, 2020). Furthermore, Fairtrade International let certified farms use "up to 100% of their Fairtrade Premium to [give] workers cash or in-kind benefits to help them through the pandemic" (Fairtrade International, 2020). These efforts demonstrate how, by ensuring the workers' **right to unionize** and **bargain collectively** (VSS content criteria 1993 and 1996), VSSs ensure **good working conditions** (VSS content criteria 800018) and **better wages** (VSS content criteria 1991) and protect workers against poverty (SDG 1) and hunger (SDG 2) during shocks such as pandemics.

In addition to steps taken to raise awareness among Ugandan women about their right to hold land title (see SDG target 2.3), Fairtrade International has been working to ensure women's right to join farming cooperatives and the Fairtrade International scheme. Training and "training the trainer" programs have taken place through the Gumutindo Coffee Cooperative, which has more than 10,000 smallholder coffee farmer members, potentially reaching thousands of women. This is an example of how VSSs promote **freedom of association** among women (VSS content criteria 1993) and help ensure **women's rights at work** (VSS content criteria 2531) and that **women benefit from workers' rights equally** (VSS content criteria 1982). These efforts also deliver far-reaching benefits for SDG 5.

SDG 12 (Responsible Consumption and Production)

Uganda's 2020 VNR contains limited reporting on the SDG 12 targets of interest. While the review does not reference environmentally sound chemical management, it notes, as an example of good practice, that "the government has supported the private sector to ensure environmental compliance and sustainability through compliance assistance and enforcement" (Office of the Prime Minister, 2020, p. 60). We have identified a case study the government could use to enhance its reporting on environmentally sound chemical management (SDG target 12.4), enabled by VSSs on the ground.

SDG target 12.4:

"By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment."
(UN, 2015)

Ugandan farms and cooperatives that are certified under the CmiA standard are allowed to use pesticides, but only under strictly regulated conditions. CmiA bans all pesticides that are listed under the Rotterdam and/or Stockholm conventions and/or classified as "extremely hazardous" by the WHO. Any violation of these restrictions leads to exclusion from the CmiA program (CmiA, 2018b). Through farmer training,

CmiA farmers learn that using pesticides is not always necessary, there are alternatives to fight pests, and several precautions must be taken when handling pesticides. Farmers also learn about the threshold principle and maximum loads, limiting pesticide use, beneficial pests, and alternative methods to protect fields (such as the use of traps). These methods also keep production costs down (CmiA, 2018b). This case study shows that by **prohibiting the use of hazardous chemicals as defined by the WHO and the Stockholm and Rotterdam conventions** (VSS content criteria 2100), VSSs can help **reduce the use of these chemicals** by farmers and **promote their selective and targeted application** (VSS content criteria 2098 and 60024), as prescribed by **IPM**, which CmiA also promotes (VSS content criteria 2106).

SDG 15 (Life on Land)

Uganda's 2020 VNR reports that forest cover in the country had shrunk to 9%, or 1.83 million ha, in 2018, from 24%, or 4.9 million ha, in 1990, meaning a loss of 3 million ha in only 25 years (Office of the Prime Minister, 2020). The government seeks to avert deforestation and forest degradation through policies and measures such as reforestation and forest restoration. However, restoration has not been able to keep up with annual deforestation rates, largely due to overreliance on biomass for energy. We have identified a case study that the government could highlight to illustrate VSSs' potential to contribute to multiple SDGs in an integrated manner, such as by reconciling the need to promote sustainable forest management (SDG 15.2) with farmers' energy needs.

SDG target 15.2:

"By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally." (UN, 2015)

Farmers working with Kyagalanyi Coffee have provided feedback to Rainforest Alliance to improve its 2020 standard. One insight was that farmers in the region were planting trees to cut wood as a type of pension scheme. This means that if the standard prohibited harvesting trees, these farmers would not have an incentive to plant them, as they would not be able to harvest wood as a future income-generating activity. As this would be considered counterproductive to Rainforest Alliance's goals to increase forest cover and biodiversity, Rainforest Alliance adjusted this requirement prior to the release of the 2020 standard. According to the updated requirements, farmers can plant and harvest trees "in a sustainable way." Cutting is permitted within limits, as natural forests, natural ecosystems, and protected areas and their buffer zones need to be preserved. By allowing farmers to cut some trees as part of a sustainable management plan, Rainforest Alliance encourages tree planting and ecosystem regeneration for future use (Rainforest Alliance, 2021b). This case study shows that by cooperating with certified farms, VSSs can be better equipped to address Uganda's unique challenges and seek to **prevent deforestation** by promoting **sustainable timber harvesting** (VSS content criteria 2071 and 700375) without

compromising communities' access to energy (SDG 7).

3.1.3.4 Means of Implementation

In this section, the government could mention that it has already been **using data** to plan and formulate policy, and its national data production is well developed and coordinated. However, it could note that information contained in VSSs' criteria requirements and case studies on their implementation could help fill data gaps and facilitate reporting on local contributions to the SDGs. Also, as Uganda's **parliament** "has been proactive in supporting Government efforts to implement the SDGs on several fronts" (Office of the Prime Minister, 2020, p. 2), the government could explore parliament's potential role in supporting the gathering of VSS-related data to report on SDG implementation progress.

With respect to **finance**, Uganda could reiterate that it needs additional development finance, which, in the medium term, will probably come from a combination of domestic and international sources, including official development assistance, the private sector, and civil society, among others. It could note that VSSs operating in Uganda can potentially mobilize additional financial resources, which should be explored (Voora et al., 2022).

On **partnerships**, the government could note that VSSs "can be catalysts for public–private collaboration" (Bermúdez, 2021) and briefly discuss their role in achieving sustainable development outcomes by promoting partnerships with local actors, including buyers, producers, investors, and local authorities. The government could point out that Uganda "has built a robust system of coordination that includes the

⚕ Lessons learned

Through partnerships with certificate holders, VSSs can adjust their criteria requirements to the unique needs of countries and communities where they operate to reflect the integrated and indivisible nature of the SDGs. Farmers working with Kyagalanyi Coffee, who have provided feedback to Rainforest Alliance to improve its 2020 standard, have noted that Ugandan farmers plant trees to cut wood as a type of pension scheme. This means that if the standard prohibited harvesting trees, these farmers would not have an incentive to plant them as they would not be able to harvest wood as a future income-generating activity. As this would be considered to work against Rainforest Alliance's goals to increase forest cover and biodiversity, Rainforest Alliance adjusted this requirement prior to the release of the 2020 standard. According to the updated requirements, farmers can plant and harvest trees "in a sustainable way" (Rainforest Alliance, 2021b), which reconciles the need to protect forests (SDG 15) with communities' energy needs (SDG 7).

political and technical arms of government," as well as stakeholders in civil society and business (Office of the Prime Minister, 2020, p. 82). It could reiterate that Uganda wishes to ensure deeper collaboration with all partners to enable the government to gather input from diverse sources. The government could further note that collaboration with stakeholders involved in SDG implementation and the VNR preparation process—most of which are also partners and stakeholders in VSS bodies (e.g., private sector growers, producers, and processors, as well as government departments and agencies, UN bodies, and civil society)—could help facilitate the gathering and use of VSS-related data for government reporting on SDG progress. This could lead to stronger partnerships with stakeholders for better SDG implementation, especially if women are equally represented in stakeholder engagement.

To illustrate specifically how multistakeholder partnerships contribute to the SDGs, the government could note the case study where Irish Aid works with Fairtrade International to help ensure that farmers in the Gumutindo Coffee Cooperative can keep getting a fair price for their crops while maintaining high quality to remain competitive (see also SDG target 2.3) (Irish Aid, 2014). Similarly, in light of the growing global demand for high-quality bird's eye chilies, which are grown by many small-scale farmers in the Lira District in northern Uganda, GLOBALG.A.P. has worked with a non-governmental organization called Farm Africa and the North-Eastern Chili Producers Association to help chili growers meet international buyers' quality standards. GLOBALG.A.P. trains the association and Farm Africa staff on its Integrated Farm Assurance standard for fruits and vegetables so they have the skills to train farmers to comply with GLOBALG.A.P. (GLOBALG.A.P., n.d.-b).

3.1.4 Further Resources

For further information to facilitate government reporting on VSSs' contribution to the SDGs, Uganda could consult VSS-related resources and/or reach out to local VSS offices, VSS-certified bodies listed as contacts, or VSS international offices when in-country representation is unavailable. Contact details and helpful resources are listed in Appendix C, which contains guidelines for governments on how to use VSS-related information to report on the SDGs.

3.2 India

3.2.1 Introduction

India is home to 1.4 billion people. After China, it is the world's second-most populous country. Given the presence of large areas of arable land, a variety of weather conditions, and fertile soils, India's economy is largely agrarian. More than half of its workforce, which amounts to 482 million, works in agriculture; of these, upwards of 45% are farmer cultivators, and the rest are landless agricultural labourers (Singh, 2021). Almost a third of cultivators were women, who owned only around 10% of agricultural lands and 12.8% of operational holdings, according to the Agriculture Census of 2010–2011 (Ministry of Agriculture and Farmers Welfare, 2015). Around 70% of the country's rural households rely on agriculture for their livelihoods, and 84% of farmers are smallholders that own less than 2 ha of land (FAO, 2019; Singh, 2021).

India is the "second-largest producer of rice, wheat, oilseeds, fruits and vegetables, sugarcane, and cotton" in the world (FAO, 2019). The ITC Standards Map indicates that around 76 VSSs are active in the Indian agricultural sector, including 4C, Better Cotton, Bonsucro, Fairtrade International, FSC, GLOBALG.A.P., Organic, Round Table on Responsible Soy, and Rainforest Alliance. Combined, these VSSs have around 1,550,963 hectares of land under VSS-compliant cultivation and engage about 1,975,636 producers (ITC, n.d.). In 2018, there were 2.8 million reported organic producers across the globe. India has the most organic producers (1,366,226), followed by Uganda (210,353) and Ethiopia (203,602), and ranks fifth in the world in land under organic agriculture (Willer et al., 2021). In addition to international standards, India has developed its own voluntary standards, such as trustea, INDGAP, Voluntary Certification Scheme for AYUSH Products, and the NPOP.

3.2.2 Leveraging VSSs Operating in India to Report on SDG Progress

In its second VNR, submitted to the HLPF in 2020, India reported on all 17 SDGs, noting that its VNR preparation and drafting process was highly inclusive (NITI Aayog, 2020). Among other elements, it involved a VNR forum that facilitated consultations with different stakeholder groups and an SDG taskforce that comprised staff from NITI Aayog—the Indian government's public policy arm—as well as key central ministries, state governments, and think tanks, who commented on VNR drafts. Stakeholder engagement underpinning the entire VNR preparation process involved **the mapping of all the key stakeholders**, including CSOs, non-governmental organizations, and the private sector. The VNR also mentions government consultations conducted in the northeastern region among national and regional government representatives and stakeholders from civil society, industry, and academia.

India's 2020 VNR says the adoption, implementation, and monitoring of the SDGs rely on a "**participatory and bottom-up approach**," with the involvement of central ministries, state/union territory governments, the UN, international development organizations, think tanks, and CSOs (NITI Aayog, 2020).

� Good practice example

India's 2020 VNR acknowledges institutionalized "voluntary sustainability and responsibility frameworks will play a vital role in the next decade in terms of informing producer and consumer behaviour" (NITI Aayog, 2020, p. 155). It explicitly recognizes the role of VSSs in promulgating the commitment of businesses to the SDGs in their operations to promote sustainable sourcing, production, and trade. "The success of voluntary guidelines, principles, and standards," the VNR notes, will depend on "the impact of these disclosures on consumer choice" (NITI Aayog, 2020, p. 155). However, the review does not discuss VSSs' potential contribution to SDG reporting.

In accordance with its engagement of stakeholders in the VNR development process, the Indian government could also leverage VSS information for direct reporting on SDG progress, as VSSs, including Fairtrade International, Better Cotton, and Rainforest Alliance, work with farmers, development partners, buyers, and other actors to advance sustainable production and consumption practices, which can contribute to several SDGs.

India could draw on VSSs' content criteria and related case studies of the activities that VSS bodies conduct with farmers on the ground to support compliance with the criteria, with correspondent results, to present examples of local contributions to the SDGs and related targets. It could also contribute to other relevant VNR sections, including methodology and process, institutional mechanisms, and means of implementation.

3.2.3 Reporting Example

The present reporting example takes into account India's national context, as reported in its 2020 VNR, and covers sections from the Secretary-General's common reporting

guidelines for VNRs, contained in the 2022 *Handbook for the Preparation of Voluntary National Reviews*, which we have deemed the most relevant for leveraging VSS-related information (DESA, 2022) (see also Section 4). As above, the subheadings used in the reporting example correspond to the headings used in the relevant sections of the Secretary-General's common reporting guidelines. And again, the selection of SDG targets for reporting is determined by the scope of the present study and case study availability (e.g., if no case studies have been identified for one of the selected SDG targets, the reporting example does not cover that target).

3.2.3.1 Methodology and Process to Prepare the Review

In this section, the government could reiterate its ongoing efforts to report on SDG progress, building on other actors' work, including through the VNR Forum, the SDG task force, and other forms of stakeholder engagement. These efforts provide **opportunities to leverage information** in VSSs' criteria requirements and in case studies of how VSSs' practical application leads to advancements toward specific SDGs and targets to report on

progress. The government could underscore that India's VNR preparation process involves a broad range of stakeholders, including key central ministries, state governments, and think tanks, and that many of these actors are also partners in VSS-related initiatives, such as the Sustainable Palm Oil Coalition of India, which could help facilitate the process of data gathering and management.

The government could also reference its ongoing efforts to customize national SDG indicators to the subnational level by developing specific state and district indicator frameworks to enable state- and district-level data gathering and reporting, along with efforts to explore the possibility of using citizen-generated data. It could note that data leveraged from VSSs' criteria requirements and case studies of VSSs' practical application in various regions of India contribute to this work by helping track progress in a more granular and district-specific way.

3.2.3.2 Institutional Mechanisms

In this section, the government could note that NITI Aayog serves as a platform to bring together key central ministries, state governments, and union territories to work toward the achievement of India's national development goals and the implementation of the 2030 Agenda in partnership with relevant stakeholders, in support of **inclusive development**. The government could emphasize that in adopting, implementing, and monitoring the SDGs, India relies on a "**participatory and bottom-up approach**," with the involvement of central ministries, state and union territory governments, the

UN, international development organizations, think tanks, and CSOs. It could further reiterate that India's SDG implementation efforts are characterized by "**horizontal and vertical convergence of multiple government agencies at different levels**," including expansive institutional structures at the national and subnational levels. Additionally, India's parliament "has been proactive in championing and exercising legislative oversight on the SDGs" (NITI Aayog, 2020, p. 18).

The government could note that India's rich institutional landscape facilitates the roles that different stakeholders can play in SDG implementation by achieving VSS certification and following VSS requirements for production and trade—and that many businesses in India use VSSs and thus contribute to achieving the SDGs. The government could also briefly discuss the role of VSSs in achieving sustainable development outcomes by promoting partnerships with local actors, including buyers, producers, investors, and local authorities. Finally, the government could explore the potential role of parliament in supporting the gathering of VSS-related data to report on SDG implementation progress.

3.2.3.4 Progress on Goals and Targets and the Evaluation of Policies and Measures

In this section, India could illustrate how VSSs' content criteria can help assess where to target data collection on VSSs' activities, in order to gather information to report on SDG progress. Based on our review of

literature on numerous VSS activities in India,[15] we conclude that the implementation of standards in India advances SDG target 2.3 the most, with multiple examples given below on how VSSs are ensuring more robust livelihoods and reliable incomes. There is significant VSS support for SDG target 2.4, with many observed production efficiency and productivity improvements achieved through sustainable agricultural production practices. SDG targets 8.7 and 8.8 on eliminating child labour and establishing safe working conditions, respectively, also benefit from VSSs' activities in the country. Further, we have identified case studies on how standards are advancing target 6.4 on water-use efficiency, target 12.2 on the sustainable management and efficient use of natural resources, and target 12.4 on the responsible use of agricultural chemicals. There is evidence that VSSs implemented in India also support SDG target 15.2 on reducing deforestation. Case studies documenting direct VSS support for SDG targets 6.3, 12.5, and 15.5 have not been found.

SDG 2 (Zero Hunger)

India's 2020 VNR outlines the country's "strategy for doubling farmers' income [by 2022 by] focusing on … improved crop productivity, increased livestock productivity, cost-effective production processes, increased cropping intensity, crop diversification favouring high-value crops, access to better prices, and shifting to non-farm occupations" (NITI Aayog, 2020, p. 41). In this context, the government could highlight several case studies, as illustrated below, where VSSs

help **promote principles and practices to secure a living wage** (VSS content criteria 1991); improve **production efficiency and productivity** (VSS content criteria 1971); **improve soil quality, productivity, and biodiversity** (VSS content criteria 2055); **provide diversification opportunities** (VSS content criteria 700413); and **adapt** agricultural production **to climate change** (VSS content criteria 701327), among other benefits.

SDG target 2.3:

"By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment." (UN, 2015)

Fairtrade certification has helped improve the incomes of small-scale coffee producers who are members of a coffee cooperative in Araku, in southern India, that was founded in 2007. It became certified by Fairtrade International standards in 2008, accompanied by a simultaneous conversion to organic standards. A study showed that in a comparison of gross margins earned from coffee per hectare of land, certified farmers earned 66% more than non-certified farmers due to a strong price advantage in the certified value chain.

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[15] Resources consulted include VSS impact reports, country case studies published as news stories, and other types of data produced by VSSs, e.g., *Data Sheet for Child Labor and Forced Labor Risk Maps* by Rainforest Alliance (2021a).

Major differences were also observed in total household income between the two groups, with the certified group earning more than the non-certified group. The study reported that the cooperative invested the social premium obtained due to Fairtrade certification to provide public goods, such as installing clean drinking water facilities, providing school uniforms to girls, building sports facilities for school children, and putting up vermicompost tanks in the village (Jena & Grote, 2017). This case study shows how Fairtrade certification can help farmers **improve their income** (VSS content criteria 1991) while also delivering other benefits, such as preventing **water scarcity** (VSS content criteria 2036) and **improving soil quality, productivity, and biodiversity** through composting (VSS content criteria 2055). Fairtrade certification can also enable activities that benefit other SDGs. In this case, efforts to support school education for children, especially girls, contribute to SDGs 4 (quality education) and 5 (gender equality).

A 2012–2016 comparison of yield and profitability of the main rotation crops among organic and non-organic farmers in northern India provides another example. Smallholders interested in switching to organic farming of basmati rice joined Fair Farming Foundation, Ramnagar and signed a production agreement with the processing company Nature Bio-Foods Ltd., agreeing to implement organic practices on their farms. The study reported that organic farmers had "the same yields in cereals and pulses as conventional farmers, with considerably lower external inputs." It found that "due to 45% lower production costs and higher sales prices, organic basmati cultivation was 105% more profitable than cultivating rice under

⚧ Women tea workers in India

A 2013 study found that work on tea plantations in India is divided across gender lines (Lalitha et al., 2013). Women tend to pluck tea leaves while men are more likely to have factory roles or work in security, pruning, or spraying. To contribute to living wages for tea workers, the Rainforest Alliance co-founded the Global Living Wage Coalition, which aims to determine living wages per region. This provides certified farms with benchmarks for better employee salaries, including women tea pluckers (Rainforest Alliance, 2021c).

Other VSSs report their impact on women's quality of life. In India, almost half of tea production is verified under a VSS developed specifically for the Indian context, the trustea label. Launched in 2013, it has helped smallholders, tea estates, and leaf factories better the working conditions and wages for smallholder farmers. In 2019, the program estimated that it had reached 619,000 tea workers, or about 26% of smallholder farmers, of whom 56% were women. It reports seeing better working environments for women achieved through, among other things, maternity benefits and the availability and quality of creche facilities for women. Training on agrochemicals and protective equipment increased health awareness among pregnant women and nursing mothers (trustea, 2020).

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conventional management" (Eyhorn et al., 2018). A wide range of improvements ensued in terms of **income** (VSS content criteria 1991), **better production efficiency and productivity** (VSS content criteria 1971), and environmental benefits.

Workers on Rainforest Alliance-certified tea farms in India—most of whom are women—enjoy decent wages, housing, and access to safe water, health care, and child education. In Assam, where tea production is challenging due to entrenched poverty, inadequate infrastructure, and extreme weather events such as floods and droughts, Rainforest Alliance introduced an action plan targeting "housing, [labour] issues, and access to water and sanitation, and includes increased training for local certification bodies, for instance on social auditing skills" (Rainforest Alliance, 2018). In addition, if issues are reported on a Rainforest Alliance-certified plantation that violate the Rainforest Alliance Sustainable Agriculture Standard, the plantation's certification could be suspended or rescinded (Rainforest Alliance, 2018). The action plan is expected to help workers **secure a living wage** (VSS content criteria 1991) while improving their living conditions, preventing **water scarcity** (VSS content criteria 2036), and ensuring access to sanitation.

Living wages also rose in Tiruppur—India's major textile hub—where the Fairtrade Textile Standard and program were launched in 2016. Fairtrade International and partners have been working to improve production processes for textile workers in the region. The Fairtrade Textile Standard requires that companies "improve wages [gradually] to living wage level within six years after certification" (Fairtrade

International, 2017). In this region, a living wage is INR 14,250 (USD 172), per the Global Living Wage Coalition (Barge et al., 2018). The Global Living Wage Coalition comprises seven sustainability organizations: Fairtrade International, FSC, GoodWeave International, Rainforest Alliance, UTZ (until 2020, when it merged with Rainforest Alliance), Social Accountability International, and the Sustainable Agriculture Network.

Another example of standards helping farmers **secure a living wage** (VSS content criteria 1991) is in the state of Gujarat, a major peanut-producing region, where the Somnath Farmer Producer Organisation has supported Better Cotton farmers in developing an additional source of revenue through the growth and sale of Fairtrade-certified peanuts. Better Cotton and Ambuja Cement Foundation have been promoting soil health by encouraging Better Cotton farmers to grow peanuts. Crop alternation between cotton and peanuts helps soil to recover nutrients (BCI, n.d.-a). In this case, benefits generated from Better Cotton certification range from additional income due to the **diversification of business operations** (VSS content criteria 700413) to improved **soil quality** as a result of **intercropping** (VSS content criteria 2055 and 300622).

SDG target 2.4:

"By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality." (UN, 2015)

Some 1,000 Fairtrade farmers in Kerala's Manarcadu Social Services Society rely on an experienced plant doctor's support. Late summer's monsoons make drying and processing spices challenging. Climate change has altered weather patterns and exacerbated farmers' problems. As a result, spices such as ginger and cocoa, which are normally harvested between May and September, are harvested a month late, and in some places, as late as December. The resident plant doctors are appointed in vulnerable regions to serve Manarcadu Social Services Society farmers and assist them with solutions to sustaining crop growth and, thus, their income (Fairtrade India, 2014). These efforts help maintain **production efficiency and productivity** (VSS content criteria 1971) while **responding to climate change-related hazards** through **adaptation activities** (VSS content criteria 701326 and 701327).

Another widespread problem that is worsening due to climate change is pest attacks in the cotton fields. To promote the effective use of pesticides among Better Cotton farmers, Better Cotton and its partners carried out awareness-raising campaigns around the country on cotton pests, including pink bollworms and white flies. They provided training sessions on more sustainable practices aimed at preventing further infestations. These sessions helped Better Cotton farmers "achieve on average 11% higher yields than comparison farmers," while phasing out Monocrotophos (a toxic insecticide) (BCI, n.d.-b). Better Cotton partners' "field facilitators" educated farmers on IPM and sustainable, less-toxic alternatives, resulting in their wider use (BCI, n.d.-b). In this case, **adaptation activities** (VSS content criteria 701327) to maintain **production efficiency and productivity** (VSS content criteria 1971) go hand in hand with efforts to **reduce the application of chemicals** in the cotton fields (VSS content criteria 2098), moving toward **IPM** (VSS content criteria 2106).

Indian sugar producer E.I.D. Parry Ltd. Improved production by using sustainable agriculture practices. It is also the first company in Asia to source from a sugar mill certified under the Bonsucro Production Standard—Pugalur, in Tamil Nadu. Working in collaboration with the Dutch non-profit Solidaridad and the International Finance Corporation, the company's agricultural extension team supported some 350 farmers in achieving sustainable practices. The company's modern lab analyzes soil samples to help fine-tune fertilizer use, and its agricultural extension officers educate farmers about composting, intercropping, and other sustainable practices that can help to increase production affordably.

The company's R&D department has also come up with pest-resistant sugarcane varieties. In addition, its lab raised several parasitoid species that prey on major

♛ Good practice example

Climate change and extreme weather events in rural Gujarat on India's coast are causing water scarcity while increasing salinity in the soil, which makes crop cultivation more difficult. Cotton farmers' livelihoods are further strained by the high costs of agricultural inputs (e.g., fertilizers) and low yields. By participating in Better Cotton and adopting sustainable practices, cotton farmers are building resilience, which leads to better livelihoods. In the 2017–2018 growing season, Better Cotton farmers in the Somnath Farmer Producer Organisation (SFPO) in Gujarat "achieved 24% higher profits while using 19% less pesticide and 15% less synthetic [fertilizer]" (BCI, n.d.-a). To help Better Cotton farmers earn fairer prices for their cotton, SFPO registered with India's online commodity trading platform Multi Commodity Exchange (MCX) in 2018 to sell cotton. In 2019, MCX sold 100 bales of lint. "Improving fibre quality is one of BCI's key principles and a fundamental condition of MCX trading" (BCI, n.d.-a). Farmers worked to improve fibre quality through new techniques, such as storing cotton in indoor spaces, where it is protected from the elements. The high quality of cotton helped the SFPO achieve a bonus of INR 15,000 (USD 181), which its members shared (BCI, n.d.-a). This approach has helped advance multiple goals, including SDG 1 (no poverty), SDG target 2.4 (resilient agricultural practices that increase productivity and production), SDG 12 (responsible consumption and production), and SDG 13 (climate action)..

sugarcane pests on farms. Following the introduction of these bio-control interventions, sugarcane yields saw significant improvements, with investment in bio-control resulting in returns 15 times greater than the cost. E.I.D. Parry also developed an effective pesticide made from neem trees, which it now sells worldwide. E.I.D. Parry extension officers have also persuaded farmers to mix shredded organic matter into the soil, which makes for better productivity over the long term. It also helps with soil water retention, which leads to a lesser need for irrigation during the dry season (ISEAL, n.d.). In this example, VSS certification helps farmers achieve better **production efficiency and productivity** (VSS content criteria 1971)—with associated benefits for **living wages**

(VSS content criteria 1991)—due, in part, to **training on sustainability practices**, such as composting and **intercropping** (VSS content criteria 300451 and 300622). At the same time, **soil quality and productivity** (VSS content criteria 2055) are improved, the **application of chemicals** is reduced (VSS content criteria 2098), **IPM** is promoted (VSS content criteria 2106), and the **need for irrigation** is minimized (VSS content criteria 10086).

SDG 6 (Clean Water and Sanitation)

India's 2020 VNR references a comprehensive, multi-pronged strategy implemented by the Central Water Commission to monitor and remedy water quality (NITI Aayog, 2020). It includes the

identification of polluting industries and the monitoring of effluents, as well as the implementation of control and compliance measures. Under this goal, the government could highlight the case study below, which describes how certification can lead to multiple benefits across numerous water-related VSS content criteria.

SDG target 6.4:

"By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity." (UN, 2015)

ITC Ltd., a leading private sector company in India, has been engaged with the Alliance for Water Stewardship since the company's inception. The Paperboards & Specialty Papers Division factory in Coimbatore, Tamil Nadu, is one of ITC Ltd.'s sites with high water risk. It gets water from a stream in the Upper Bhawani River Basin, which experiences high levels of water risk due to a changing climate, unsustainable water use, water-intensive agricultural practices, and a water table that is rapidly declining.

The company took several measures to address water-related business risks while following the AWS Standard. These include improving water-use efficiency by reducing water consumption by 5% year on year, increasing effluent treatment plant water recycling from 40% to 60%, improving water governance, and providing safe drinking water, sanitation, and hygiene services for its workers.

Following AWS Standard criteria, the company commissioned detailed stakeholder mapping in the catchment area and stakeholder engagement processes, along with a hydrogeological study to identify water risks. These studies resulted in a water stewardship plan for the site to improve water security. Based on this plan, the company initiated supply- and demand-side interventions in the catchment area's 29 micro-watersheds. Capacity-building activities on the demand side included the creation of water user groups and self-help groups, training sessions on how to save water, awareness raising about the state of the area's groundwater, "farmer field schools" and demonstrations, and the showcasing of more sustainable agricultural practices. To improve overall water security, supply-side interventions included the introduction of water harvesting and recharge structures, farm ponds and open wells, and the "rejuvenation of traditional water harvesting structures" (Bhardwaj, 2020). In this example, an **assessment of risks and impacts on water usage** (VSS content criteria 300455) and interventions under the **water management plan** (VSS content criteria 300663) relating to the **monitoring, use, and consumption of water resources**; the **quality of water used in production**; and **water reuse and recycling** (VSS content criteria 2037, 4081, and 2032) help reduce **water dependencies and water scarcity** (VSS content criteria 2036) in the region and improve **water extraction for irrigation** practices (VSS content criteria 10086). These benefits are facilitated through farmer **training on sustainability issues** (VSS content criteria 300451).

SDG 8 (Decent Work and Economic Growth)

India's 2020 VNR mentions that although human trafficking per million people fell to 1.86 in 2018 from 5.48 in 2015, conviction rates in reported cases remain difficult. It lists legislation prohibiting forced labour and child labour and identifies awareness gaps, the lack of comprehensive data, and unsafe migration as challenges. The case studies described below could help the government address some data challenges to comprehensive SDG 8 reporting.

SDG target 8.7:

"Take immediate and effective measures to eradicate forced labor, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labor, including recruitment and use of child soldiers, and by 2025 end child labor in all its forms." (UN, 2015)

The risk of child labour and trafficking in India remains high, especially in rural communities and migrant worker families (UN Children's Fund, 2019). Better Cotton has maintained a focus on providing training on this topic. Through the 2018 to 2019 cotton season, Better Cotton's implementing partners engaged with schools in farming communities to understand the reasons behind children's absence from school. By promoting the value of children's education, they also helped to increase school enrolment and retention rates. For instance, Better Cotton's partner Welspun Foundation

undertook child labour awareness-raising activities among 8- to 14-year-old children, "using videos, games, and fun activities" (BCI, n.d.-b). Over 2,400 children from 21 villages participated in these activities (BCI, n.d.-b). These efforts seek to prevent child labour by promoting **children's school attendance** (VSS content criteria 2013) by raising awareness.

Standards are also working to **promote children's education**, not only for certified members but for surrounding communities as well. For instance, the family-owned Rainforest Alliance-certified Havukal Tea Estate, located in the Nilgiris Hills, ensures that "children from the Havukal and Warwick estates have free access to a school run by teachers whose salaries are paid by the government" (Rainforest Alliance, 2015). Fifty children, including a third from the local community and not from the tea estate, attend the school (Rainforest Alliance, 2015).[16]

The garment industry in Indian cities increasingly relies on child labour. In 2016, GoodWeave, with funding support from C&A Foundation, initiated a pilot project "to transfer GoodWeave's model for ending forced and child labour from the handmade carpet sector to the apparel and jewelry sector" (Traidcraft, 2018, p. 1). For the past 20 years, "GoodWeave has worked in the informal supply chain in the carpet sector … to address the issues of child labour and forced labour" (Traidcraft, 2018, p. 7). As a result of its efforts, child labour in the carpet industry has dropped by 80% since 1995, when it began operations. GoodWeave's model sought "to increase access to education

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[16]   In the absence of more recent data, the authors were unable to verify whether this is still the case.

⚧ Women's economic empowerment and the gender dimensions of child labour

According to the ILO, there were around 160 million child labourers in 2020 (ILO & United Nations Children's Fund, 2021). Sixty percent of those children are boys, and 40% are girls, and it is estimated that more than 70% of all child labour is found in agriculture, forestry, fisheries, and aquaculture (FAO, 2021). While girls often face a double burden of performing household chores and agricultural activities, it is often boys' responsibility to operate machinery, use sharp tools, or spray chemicals. That gendered division of labour exposes girls and boys to different health and safety risks and prevents them from attending school (ILO, n.d.-a).

The economic and social empowerment of women is a critical tool to reduce child labour, especially in rural areas. When women earn income and have equal access to resources, including land and financial services, it can reduce the household's economic dependence on child labour and enable youngsters to go to school instead. Educated girls are then more likely to be more economically empowered and earn wages, which often leads to a greater capacity for women to participate in household decision making. Women making decisions about their households often translates into higher enrolment rates for their children, boys and girls alike (FAO, 2021). VSS initiatives that address women's economic inclusion and empowerment are thus likely to have an impact on child labour, as these issues are interconnected.

to prevent and remediate child labour, as well as reduce forced labour, and improve working conditions for adult workers" (Traidcraft, 2018, p. 1).

GoodWeave also engages on forced and child labour in supply chains with other VSSs. For example, by partnering with the Sustainable Agriculture Network (SAN), it strengthened responses to child labour in India's tea sector. While child labour is a problem in Assam state, most tea estates in the region were certified by the SAN standard at that time. Through such collaborations, GoodWeave "applies its robust monitoring system to the tea sector while SAN reinforces the social auditing skills of local partners to use during

farm certification" (One Planet Network, 2018). Efforts by GoodWeave and SAN show how **VSS partnerships** can help reduce **forced labour** and child labour (VSS content criteria 1986) by promoting children's access to **education** (VSS content criteria 2013) and **improving working conditions** for adult workers (VSS content criteria 800018).

SDG target 8.8:

"Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment." (UN, 2015)

According to Better Cotton, women's attendance at training sessions given by standard organizations is a challenge in the cotton sector. Many women are either prevented from attending by their families or husbands or are only allowed to attend between domestic tasks. As a result of these cultural challenges, Better Cotton reports that only 20% of participants at training sessions were women in 2018 and 2019. The standard is working with its implementing partners "to build their capacity to provide high-quality training to both men and women at times [that] are convenient for them" (BCI, n.d.-b). This is an example of how a VSS can seek to ensure that **workers' rights and benefits are equally applicable to all types of workers**, in particular **women** (VSS content criteria 1982 and 2531), with important co-benefits for SDG 5.

Rainforest Alliance works with more than 850 estates that produce about 15% of India's tea. Rainforest Alliance seeks to improve livelihoods as well as the conditions of working environments. On the Rainforest Alliance-certified Kairbetta Estates, for example, workers enjoy tea breaks between plucking. Pluckers and workers, as well as their family members, receive free medical aid, as do community members who do not have access to health care otherwise. A nurse who is permanently on-site can quickly attend to any injury or illness (Rainforest Alliance, 2015). These efforts aim to promote **good working conditions** (VSS content criteria 800018), **safety at work** (VSS content criteria 2001), and **occupational health and safety** (VSS content criteria 740206). It will also deliver cross-benefits for SDG 3 (good health and well-being) by providing health care access to those who would not have it otherwise and for SDG 5, as most tea pluckers are women, who experience specific health challenges, including osteoporosis and other bone-related issues after prolonged work (LeBaron, 2018).

SDG 12 (Responsible Consumption and Production)

With respect to our SDG 12 focus targets, India's 2020 VNR mentions the Draft National Resource Efficiency Policy, which focuses on "sustainable consumption of virgin resources, high material productivity with an emphasis on efficient circular approaches, minimization of waste, and creation of employment opportunities and business models conducive to environmental protection and conservation" (NITI Aayog, 2020). The government could enhance its reporting on some SDG 12 targets by outlining how the VSS case studies below enable the sustainable management and efficient use of natural resources such as soil and water and promote the environmentally sound management of chemicals through reduced and/or selective application.

SDG target 12.2:

"By 2030, achieve the sustainable management and efficient use of natural resources." (UN, 2015)

Traditional farming practices in many regions of India have resulted in declining soil fertility, increased soil erosion, and lower yields, particularly for smaller estates and small tea growers. All trustea-verified estates in northeastern and southern India are conducting soil tests for adopting scientific farming practices, which has become customary for most of the small tea growers under the standard. In the northeast region, verified participants have adopted soil management practices that have enhanced soil fertility at their plantations, such as recycling organic matter into vermicompost. Small tea growers in northeast India have adopted agricultural practices recommended by the trustea standard, such as soil testing, shade-tree planting, green-leaf plucking, and trapping. Those in south India have adopted soil conservation methods to protect topsoil and improve soil retention. Trenches are made between alternate rows to hold rainwater and avoid erosion, and the soil is tested regularly before applying fertilizers. In West Bengal, the use of vermicompost has helped improve soil fertility and soil health and has been beneficial for maintaining the soil ecosystem (trustea, 2020). This case study shows how trustea-supported resource management practices on verified plantations help promote **production efficiency and productivity** (VSS content criteria 1971) while **improving soil quality, productivity, and biodiversity** (VSS content criteria 2055); minimizing the **need for irrigation** (VSS content criteria 10086); and **reducing the application of**

chemicals through regular soil tests (VSS content criteria 2098).

Another example of sustainable management of resources is the Budlabeta Tea Estate Factory. After joining trustea, the estate made changes to comply with the trustea code and standards. It adopted good agricultural practices, selected an appropriate irrigation method, and started to monitor water usage through water management practices. This resulted in reduced and sustainable water use, an improved water footprint, and better yields and productivity (trustea, 2020). These water management efforts show how **a water management plan** (VSS content criteria 300663), combined with **monitoring water resources** (VSS content criteria 2037), can help reduce **water extraction for irrigation** and **water scarcity** (VSS content criteria 10086 and 2036) while delivering improvements in **production efficiency and productivity** (VSS content criteria 1971).

SDG target 12.4:

"By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment." (UN, 2015)

In 2012, a group of Better Cotton farmers in Kanakya village established a committee to assist other farmers in their community with pesticide and fertilizer use by promoting greater efficiency and better access to plant-

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based alternatives at reasonable prices. The Better Cotton farmer committee was entrusted with buying bio-pesticides such as neem oil and beauveria bassiana—"a fungus used as a biological insecticide"—on their behalf from a trader in a nearby village (BCI, n.d.-a). Because farmers purchased these inputs collectively, they paid about 25% less than if they had bought individually. Drawing from this experience, a further 10 new committees in local villages helped farmers access "healthier, plant-based natural pesticides at prices they could afford," while improving soil health and minimizing impacts on the environment (BCI, n.d.-a). Ambuja Cement Foundation provided Better Cotton training sessions that advised members of the SFPO on when, based on regular pest monitoring, the time was right to spray. They informed members about healthier alternatives, such as plant-based pesticides that are also more sustainable. Additionally, "the growing understanding of health benefits" associated with "using fewer synthetic pesticides and opting for healthier alternatives has extended beyond SFPO members, creating greater awareness of public health issues among cotton-farming communities" (BCI, n.d.-a). These efforts led to the **reduced, selective, and more targeted application of chemicals** (VSS content criteria 2098 and 60024) for **IPM** (VSS content criteria 2106) and associated **soil quality improvements** (VSS content criteria 2055) without compromising **production efficiency and productivity** (VSS content criteria 1971). The health benefits delivered through better chemical management by Better Cotton farmers also contribute to SDG 3.

SDG 15 (Life on Land)

In its 2020 VNR, India reports progress on, among other things, managing forests, conserving wetlands and water bodies, protecting wildlife, combating desertification, and conserving biodiversity. With respect to forests, the VNR highlights the government's efforts on sustainable forest management, such as the afforestation of degraded forest lands "through natural and artificial regeneration, protection, and management" (NITI Aayog, 2020). The government aims to improve the quality and spread of forest areas by, for example, preventing and managing forest fires and designating protected areas. The VNR references a multistakeholder-oriented and participatory approach to forest management adopted by the government that allows for better protection and management of forests and "improved livelihoods of forest-dependent people" (NITI Aayog, 2020). We have identified a case study the government could use to illustrate how VSS-supported efforts on the ground reflect these approaches.

SDG target 15.2:

"By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally." (UN, 2015)

Rich forests cover 21,720 km² of Uttar Pradesh in northern India—around 9% of the state's area. These forests are highly diverse and "include high-quality timber-yielding trees [such as] teak and sal, along with fruit and indigenous medicinal plants

used in Ayurveda therapy" (FSC, 2017b). Through certification, FSC has helped the Uttar Pradesh government "to make plans to boost its revenue from forest products while ensuring that the forests remain healthy and vibrant." FSC has been working with the Uttar Pradesh Forest Corporation to certify its timber plantations (FSC, 2017b). The standard also works to protect the rights of forest-dependent Indigenous Peoples, as many studies have shown this to be effective in halting deforestation. FSC also partnered with the Tripura Forest Development and Plantation Corporation to create "tangible long-term benefits for the people and the forest" for many generations to come (FSC, 2017a). These initiatives help **prevent deforestation** (VSS content criteria 2071) through efforts such as **sustainable timber harvesting** (VSS content criteria 700375) and **enhanced forest conservation** (VSS content criteria 2073).

3.2.3.5 Means of Implementation

India's 2020 VNR notes challenges inherent in monitoring and measuring progress on the 2030 Agenda due to the large number of targets and indicators for which reports are necessary, particularly for India, due to its vast geographical, economic,

demographic, and social diversity. To track and report progress, India has developed a National SDG Indicator Framework, "with 297 indicators across all 17 goals and a coordinated system for generating and managing data through a process of multi-layered and iterative consultations" (NITI Aayog, 2020) involving ministries, state and local governments, research institutions, the UN and other international organizations, and civil society. The VNR also mentions efforts to customize the indicators to the subnational level by developing specific state and district indicator frameworks to enable state- and district-level data gathering and reporting, as well as efforts to explore the possibility of using citizen-generated data.

Bonsucro's work to improve data availability at four Bonsucro-certified sugar mills— Baramati Agro Ltd., Dalmia Bharat Sugar and Industries Ltd., E.I.D. Parry Ltd., and Olam International—offers an example of how VSSs can help **address data-availability challenges** and enable decision making. Before adopting Bonsucro standards, the mills did not maintain data on their water use, GHG emissions, fertilizers, or workers' ages, among other sustainability and labour practices. For those that did, the data were

scattered across different departments, so they were of limited use for decision making. Bonsucro requires that the mills provide these data for the "Bonsucro calculator," which is related to sustainability and labour practices. The data can be used to view the benefits accrued and assess gaps in the system, thus aiding in decision making more broadly. For example, the data "may be used to assess training needs and develop focused interventions in that particular area," with other benefits emanating from reduced water and fertilizer use and the implementation of other efficient practices. The mills have also "reported benefits in terms of higher energy conservation, more focused training programs," and improvements in reputation (Bonsucro, 2021). This information could also be used for state- and district-level reporting, as envisioned in India's 2020 VNR.

The VNR also highlights the role of international cooperation, partnerships, and coalitions in delivering on the SDGs. With respect to finance, the review recognizes the increasingly important role of domestic resource mobilization, including promoting entrepreneurship and supporting the private sector, which, it says, should be augmented by official development assistance and other international assistance.

Better Cotton set up the Growth and Innovation Fund (GIF) in 2016 to enhance capacity building among cotton farmers around the world to apply Better Cotton practices. Training is available to "farmers of all sizes and not restricted to specific supply chains" (One Planet Network, 2018). Around 60 organizations—including institutional actors and companies such as Adidas, H&M, IKEA, Levi Strauss, Marks & Spencer, and Nike—finance the GIF.

The fund "complements BCI's strategy to engage governments on adopting Better Cotton principles into regulation." The GIF's investments in its first year amounted to more than EUR 8.9 million and covered seven countries—one of which was India. IDH, the Sustainable Trade Initiative—the GIF's strategic partner and co-investor—manages the fund. The government could use the case of Better Cotton's GIF to show how VSSs can **mobilize investment** in various ways and **finance capacity building** at scale across VSS-compliant supply chains (One Planet Network, 2018).

The government could note that "VSSs can be catalysts for public–private collaboration" (Bermúdez, 2021). India's 2020 VNR suggests that VNR preparation, as well as SDG implementation, monitoring, and reporting, is already a highly inclusive process in India. The government's use of VSSs' data to report on SDG progress could enable **stronger partnerships with stakeholders** and a way to take SDG action "from global to local."

3.2.4 Further Resources

For further information to facilitate government reporting on VSSs' contribution to the SDGs, India could consult VSS-related resources and/or reach out to VSS offices in the country, VSS-certified bodies listed as contacts, or VSS international offices when no in-country representation is available. Contact details and helpful resources are listed in Appendix C, containing guidelines for governments on how to use VSS-related information to report on the SDGs.

3.3 Tanzania

3.3.1 Introduction

Located in East Africa, the United Republic of Tanzania borders Uganda and Kenya to the north, shares its western border with Rwanda, Burundi, and the Democratic Republic of the Congo, and borders Zambia, Malawi, and Mozambique to the south. It is an emerging economy, with a population of 58 million people spread across the mainland and Zanzibar Island. Agriculture is a vital sector of the economy, contributing about a quarter of GDP and employing three quarters of the workforce (International Fund for Agricultural Development, 2021). More than half of the agricultural workforce is women who do mostly subsistence agriculture and work on small plots (UN Women, 2021). Growth in the agricultural sector is slow, however, and most people working in agriculture are smallholders engaged in subsistence farming. Around 14 million Tanzanians live below the national poverty line, and "poverty is more prevalent in rural areas, among young people and [in] women-headed households" (Federal Department of Foreign Affairs, 2021).

Tanzania has more types of soil than any other country, which also explains why the country's economy is largely agricultural. Around two fifths of the country's population is engaged in farming (CmiA, n.d.-a). Around 53 agricultural VSSs are active in Tanzania (ITC, n.d.). These include 4C, Organic, Fairtrade International, Rainforest Alliance, GLOBALG.A.P., FSC, and CmiA. Together, these seven standards have approximately 465,000 ha of land under VSS-compliant cultivation and engage upwards of 350,000 farmers in more sustainable agricultural

practices (ITC, n.d.). The main agricultural commodities certified by VSSs in Tanzania are export crops, such as coffee, tea, cotton, cocoa, bananas, and some forest products. Tanzania also engages with the regional ARSO sustainability and eco-labelling scheme for agriculture.

3.3.2 Leveraging VSSs Operating in Tanzania to Report on SDG Progress

In its first VNR submitted to the HLPF in 2019, Tanzania reported on the goals reviewed by the HLPF that year, namely SDGs 4 (quality education), 8 (decent work and economic growth), 10 (reduced inequalities), 13 (climate action), 16 (peace, justice and strong institutions), and 17 (partnerships for the goals) (United Republic of Tanzania, 2019). The present study's focus on selected targets under SDGs 2, 6, 8, 12, and 15 can help facilitate future progress reporting on the remaining goals and support further reporting on SDG 8.

The VNR notes that the government "has adopted a '**Whole of Society**' **approach** for implementation and attainment of the Goals," inclusive of a broad range of stakeholders (United Republic of Tanzania, 2019, p. i). It also notes that the 2019 **VNR preparation process involved stakeholders** from, among others, the private sector, research institutions, and civil society through an Inter-Sectoral and Multi-Stakeholder Working Group on the SDGs, data collection, and consultations (United Republic of Tanzania, 2019). The government could rely on the existing mechanisms for stakeholder involvement in SDG implementation and VNR preparation processes in its subsequent VNR. It could draw on VSS content criteria

and related case studies of the activities that VSS bodies conduct with farmers on the ground to support compliance with the criteria, with correspondent results, to present examples of local contributions to the SDGs and related targets. It also contributes to other relevant VNR sections, including methodology and process, institutional mechanisms, and means of implementation.

3.3.3 Reporting Example

As in our sections on Uganda and India, above, the present reporting example takes into account Tanzania's national context, as reported in its 2019 VNR, and covers sections from the Secretary-General's common reporting guidelines contained in the 2022 *Handbook for the Preparation of Voluntary National Reviews* that we have deemed the most relevant for leveraging VSS-related information (DESA, 2022) (see also Section 4). The subheadings used in the reporting example correspond to the headings used in the relevant sections of the Secretary-General's common reporting guidelines. Again, the selection of SDG targets for reporting is determined by the scope of the present study and case study availability (e.g., if no case studies have been identified for one of the selected SDG targets, the reporting example does not cover that target).

3.3.3.1 Methodology and Process to Prepare the Review

In its 2019 VNR, the government cited the need for a "stepped-up capacity in meeting the data requirements and ensuring disaggregation, as well as inclusiveness where all stakeholders can be included in all issues related to data production and data management" (United Republic of

Tanzania, 2019, p. 104). In this section, the government could outline its plans to report on SDG progress by leveraging other actors' work by using information in VSSs' criteria requirements and their implementation case studies. Similar to its 2019 VNR, the government could reiterate that Tanzania's VNR preparation process involves a broad range of stakeholders, including ministries, departments, agencies, private sector organizations, academic and research institutions, and CSOs. It could point out that many of these actors are also stakeholders in VSS bodies, which could aid in gathering and using information on the impacts of implementing VSSs on SDG progress reporting.

Tanzania could further note that collecting VSS-related impact information to report on SDG progress enables the country to **engage stakeholders in data production and management**. It also helps address data-availability challenges, as information on VSS requirements and implementation can help **fill data gaps** in reporting progress on SDGs and related targets and indicators, such as SDG targets 2.3, 2.4, 6.4, 8.7, 8.8, 15.2, and 15.5.

For example, in its 2019 VNR, Tanzania highlights SDG 8 as a challenge in terms of progress monitoring due to the "absence of baseline data and/or limited data for some of the indicators" (United Republic of Tanzania, 2019, p. 8). Rainforest Alliance's recently launched *Data Sheet for Child Labor and Forced Labor Risk Maps* (Rainforest Alliance, 2021a) identifies Tanzania as a medium-risk country in terms of child labour and forced labour in the tea sector (see also Progress on Goals and Targets, SDG target 8.7, below). To address these risks, Rainforest Alliance,

CmiA, and 4C have mandatory criteria related to the prohibition of child labour that compliant tea plantations and factories must observe.

Finally, in this section, Tanzania could provide VSS case studies on how VSS implementation is **aiding in tracking progress** on the SDGs.

3.3.3.2 Institutional Mechanisms

In this section, Tanzania could note that VSS initiatives operating in the country contribute to SDG implementation through a **whole-of-society approach** adopted by the government. It could report on any efforts undertaken through existing institutional mechanisms, to build awareness of the roles different stakeholders can play and on their engagement in SDG implementation, monitoring, and review, including, for example, by achieving VSS certification and following VSSs' requirements for production and trade. The government could also briefly discuss the role of VSSs in achieving sustainable development outcomes by building partnerships with local actors, including buyers, producers, investors, and local authorities.

In the context of stakeholder engagement in SDG implementation and reporting, and particularly in light of the leading role it envisions for the private sector, Tanzania could highlight VSSs as tools for sustainable development, along with **any government efforts to leverage VSSs for SDG reporting**, undertaken pursuant to the present report. Tanzania could also highlight such efforts as an example of good practice.

3.3.3.3 Progress on Goals and Targets and the Evaluation of Policies and Measures

In this section, Tanzania could illustrate how VSSs' content criteria can help assess where to target data collection on VSS activities, in order to gather information to report on SDG progress. Overall, based on our review of literature on VSS activities in Tanzania,[17] we find that these activities advance SDG target 2.3 the most, with multiple examples discussed below on how VSSs are ensuring more robust livelihoods and reliable incomes through sustainability training and diversification opportunities. VSSs also support SDG targets 8.7 and 8.8 on eliminating child labour and establishing safe working conditions, respectively. Additionally, we have identified case studies on how VSSs are promoting SDG target 2.4 on sustainable food production systems, SDG target 6.4 on water-use efficiency, SDG target 15.2 on reducing deforestation, and SDG target 15.5 on halting the loss of biodiversity. No case studies have been found to demonstrate direct VSS support for SDG targets 6.3, 12.4, and 12.5.

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[17] Resources consulted include VSS impact reports, country case studies published as news stories, and other types of data produced by VSSs, e.g., *Data Sheet for Child Labor and Forced Labor Risk Maps* by Rainforest Alliance (2021a).

SDG 2 (Zero Hunger)

SDG target 2.3:

"By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment." (UN, 2015)

For this target, the government could highlight several case studies, as illustrated below, where VSSs help **promote principles and practices to secure a living wage** (VSS content criteria 1991), **provide diversification opportunities** (VSS content criteria 700413), and **train workers on sustainable production practices** (VSS content criteria 300451), among other contributions.

Fairtrade-certified coffee producers in Tanzania benefit from the additional income provided through the Fairtrade Premium. Kaderes Peasants Development Plc (KPD), for instance, is a coffee cooperative in Karagwe that sells to Fairtrade buyers. KPD coffee is Fairtrade and Organic certified and has engaged farmers in higher-income-generating activities since its establishment in 2007 (Kaderes, n.d.). KPD is paid the minimum Fairtrade price plus the additional Fairtrade Premium, which it invests in business and community improvements approved by its members. Investments are made to improve quality, productivity,

and community infrastructure, as well as to create alternative income-generating schemes (Fairtrade Foundation, n.d.-c), with concomitant benefits for SDG 1 (no poverty). Most KPD peasants are also members of a microcredit bank that supports investments in equipment and seeds (Kaderes, n.d.).

Farmers from a nearby cooperative that is also Fairtrade certified, the Karagwe District Cooperative Union, have been investing in their long-term business viability by improving the quality of coffee seedlings, financing new membership registrations, and paying for training programs for workers. The cooperative has also used the additional revenue from the Fairtrade Premium to improve local school facilities and launch reforestation and water conservation projects (Fairtrade Foundation, n.d.-a), delivering additional benefits for SDGs 4 (quality education), 15 (life on land), and 6 (clean water and sanitation). In these ways and others, the Fairtrade Premium associated with this model of VSS supports building up farmer and community resilience to economic shocks by providing stable prices even when there is fluctuation (high or low) in international coffee markets. Similarly, in 2010, the GLOBALG.A.P standard provided Tanzanian coffee farmers with economic diversification opportunities, by certifying the Muviwapasi Association's Africado Ltd. to grow certified avocados as an alternative cash crop to coffee (GLOBALG.A.P., n.d.-a).

Agricultural incomes have also improved on Fairtrade-certified rose plantations. In 2017, Fairtrade International improved farmer incomes by affirming higher minimum wages than the Tanzanian standard of TZS 100,000 per month (about USD 43) by applying this in its social criteria. All plantations had to

🏅 Good practice example

Incomes at Fairtrade-certified rose plantations have increased, with notable contributions to SDG target 2.3. In 2017, Fairtrade International affirmed higher minimum wages than the Tanzanian standard of TZS 100,000 per month (about USD 43), applying this in its social criteria. All plantations had 1 or 2 years to comply. This was a major change for women, as the Tanzanian flower industry has a largely female workforce. Fairtrade certification often means that women and men working on those farms get the same rights, regulated work hours, improved safety regulations, and better and equal wages through the introduction of a minimum base wage, as in Mount Meru.

Following these changes, employees' incomes at the Mount Meru Flowers rose plantation increased by 30%, in addition to supplemental payments for different roles taken at the plantation. The Fairtrade Premium at Mount Meru—about 10% of each flower stalk sold—is reinvested in health care or education projects selected by workers at the plantation (Fairtrade International, 2019b). Higher incomes also helped pay school fees for workers' children, as well as members of their families and themselves. In addition to contributing to SDG 1 on reducing poverty, these efforts deliver co-benefits for SDGs 3 (good health and well-being), 4 (quality education), 5 (gender equality), and 8 (decent work for all).

comply with adaptation periods of 1 or 2 years. Following these changes, the incomes of workers at the Mount Meru Flowers rose plantation increased by 30%, in addition to supplemental payments for different roles taken at the plantation. At Mount Meru, the Fairtrade Premium—about 10% of each flower stalk sold—is reinvested in health care or education projects selected by plantation workers (Fairtrade International, 2019b). In addition to also contributing to SDG 1, these efforts deliver co-benefits for SDGs 3 (good health and well-being) and 4 (quality education).

In the Miombo woodlands of Kilwa District, the certification of wood products through FSC has also had a generally positive impact on worker incomes, at least in the short term, with average household incomes higher for FSC-certified forests than for non-FSC-certified forests (Kalonga et al., 2015). FSC tends to hire residents from surrounding villages for work at the certified sawmills, providing training and paying a wage above the national minimum rate.

Finally, though not exhaustively, small-scale organic farmers in Tanzania are increasingly getting certified through participatory guarantee systems. These organic production quality assurance systems are locally focused and work to improve access to Organic certification and make it more affordable for smallholders. Through these systems, smallholders can obtain certification under EAOPS and use the Killimohai label (which at least 1,000 farmers have done to date). With Organic certification, farmers can obtain a premium "between 20% and 50% above the conventional price for fruits and vegetables," according to Sustainable

Agriculture Tanzania, a Morogoro-based non-profit (European Commission, 2018). Organic certification also applies to coffee, cotton, cocoa, and tea production in Tanzania (European Commission, 2018).

SDG target 2.4:

"By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality." (UN, 2015)

4C is actively working to mitigate GHG emissions from its Tanzanian Robusta coffee production. Working with coffee company JDE Peet, 4C measures and assesses the carbon footprint of its production chain, implements mitigation measures, and supports the market uptake of climate-friendly coffee. In Tanzania, this initiative will quantify the carbon footprint of green coffee bean production in the Kagera region and identify reduction measures, which can help maintain healthy ecosystems in the long run. 4C will pilot its 4C Climate Friendly Coffee Add-On with farmers of the region, helping companies work toward climate neutrality goals (4C, n.d.). These efforts **improve production efficiency** (VSS content criteria 1971) and deliver significant benefits for SDG 13 (climate action).

SDG 6 (Clean Water and Sanitation)

SDG target 6.4:

"By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity." (UN, 2015)

A coffee plantation owned by Olam International Ltd. in southern Tanzania's upper Ruvuma Basin became certified in 2015 under the AWS Standard in collaboration with Water Witness International, which tracked and monitored the costs and benefits of implementing the standard. The coffee plantation irrigates more than 2,000 ha and employs 1,250 people and 1,100 outgrowers. Complying with the AWS Standard improved water-use efficiency by starting a water-use monitoring system on-site, setting efficiency targets, and situating Olam's plantation in the basin vis-à-vis other users, ensuring water use corresponded with its permit of allowable water volume and did not jeopardize environmental flows (VSS content criteria 10086 on **water extraction and irrigation** and 2037 on **water resources monitoring, use, and consumption**). A review of the water permit led to negotiations for Olam to use less water than allowed under its 2015 permit, which will help prevent conflicts with other users and build local water security for a subbasin population of nearly 300,000 people (Hepworth & Farrow, 2015) (VSS content criteria 2036 on **water dependencies and water scarcity**). This case illustrates how the AWS Standard, in partnership with Olam

and Water Witness International, contributes to advancing SDG target 6.4 by enabling **water monitoring, use, and consumption** (VSS content criteria 2037), planning **water extraction and irrigation** (VSS content criteria 10086), and preventing **water scarcity** in neighbouring communities (VSS content criteria 2036).

SDG 8 (Decent Work and Economic Growth)

In its 2019 VNR, Tanzania primarily focuses on the aspects of SDG 8 related to economic growth, employment, industrialization, access to financial services, infrastructure improvements, and tourism. The review notes Tanzania's progress in eliminating child labour, especially in agriculture, mining, and construction, though it only refers to 2014 data, according to which "about 29 percent of children aged 5 – 17 years were engaged in some form of child labour" (United Republic of Tanzania, 2019).

SDG target 8.7:

"Take immediate and effective measures to eradicate forced labor, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labor, including recruitment and use of child soldiers, and by 2025 end child labor in all its forms." (UN, 2015)

In the Simiyu region of northern Tanzania, the CmiA standard is active in cotton production. Through its community partnership program, CmiA has been working to ensure that rural living standards improve and that local youth attend school. In 2018, in collaboration with CmiA-verified cotton

company Alliance Tanzania, this program invested in building "11 new classrooms, 21 latrines, as well as [a] dormitory for secondary school girls" (CmiA, 2018a). The standard says that "this created better learning conditions for more than 500 pupils in the region," lowering drop-out rates and improving examination results (CmiA, 2018a). In 2020, Alliance Tanzania collaborated in the founding of a vocational training centre in Bariadi District, offering classes in carpentry, bricklaying, sewing, and food science and processing (CmiA, 2020a). This is one way that CmiA helps provide youth with work and meaningful activity, delivering impacts that can help prevent the worst forms of child labour by supporting **children's school attendance** (VSS content criteria 2013). The program also declared its support for the training of young women and people with disabilities in all four trades.

Rainforest Alliance, active in Tanzania in coffee, tea, cocoa, and bananas, has tailored its standard to make sure that farms in areas that are at more risk of human rights abuses such as child labour and forced labour pay extra attention to these issues. Rainforest Alliance's Child Labor and Forced Labor Sector Risk Maps collect data on topics such as school enrolment, cases of child labour, remediation, and mitigation (Rainforest Alliance, 2021d), with potential impacts on a range of relevant indicators on **forced labour and child labour** (ILO 29 & 105/1986, ILO 182/1979, and ILO 138/1989).

SDG target 8.8:

"Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment." (UN, 2015)

Rainforest Alliance certified Unilever's tea plantation in Mufundi in 2012. In line with Rainforest Alliance requirements, Unilever offers to pay and provide benefits to workers (medical care, education, and housing) that exceed Tanzania's legal requirements. Seeking to improve further, Rainforest Alliance has introduced mechanisms to raise the living wage of agricultural workers by allowing them to assess their living wage gap and measure progress toward reducing it. They will also develop a shared responsibility approach with the companies they work with (Pillon, 2021). These efforts have the potential to deliver cross-cutting benefits for SDG target 8.8 by enabling **good working conditions** (VSS content criteria 800018) and SDG target 2.3 by supporting workers in **securing a living wage** (VSS content criteria 1991).

SDG 15 (Life on Land)

SDG target 15.2:

"By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally." (UN, 2015)

FSC activities in the Miombo woodlands, Kilwa District, have been studied by

comparing "FSC-certified forests to non-certified forests. It was found that FSC-certified forests have better forest structure, appropriate regeneration, and [fewer] fire incidences than open access forests and state forest reserves" (Kalonga et al., 2015, p. 182).

SDG target 15.5:

"Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species." (UN, 2015)

Tanzania has the third most certified organic farms in Africa. The largest organic certified cash crops by volume are coffee, cotton, cocoa, and tea. These are frequently produced by farmer cooperatives that "work with third-party certification bodies to certify their produce to international standards, before bulking their harvests and forging trade routes abroad" (European Commission, 2018). The Kagera Cooperative Union is one such cooperative that is gaining ground in Tanzania's organic sector. Initially, it "got involved with organic producers because of [its interest in] environmentally friendly farming as well as the quality requirements of [its] buyers" (European Commission, 2018). Organic production turned out to be a good investment, as the organic premium price for coffee is around USD 1/kg more than the conventional price and demand for organic coffee has been on the rise (European Commission, 2018). Another example is the Maendeleo Group in eastern Tanzania's Towelo village. Maendeleo brings together very small producers from the Morogoro hills who mostly produce vegetables. The participatory guarantee system carries out

⚧ Women and biodiversity conservation

Gender roles often influence the division of labour, interactions with and knowledge of the environment, and decision-making power. Biodiversity loss also affects women and girls in unique ways. They must spend more time and travel longer distances to access water and wood for fuel, which, in turn, exposes them to greater risks of harassment and violence, while also affecting their capacity to receive an education or engage in waged labour (International Union for Conservation of Nature, 2020).

Initiatives aimed at empowering women in the management of natural resources can deliver positive impacts on the sustainability of agricultural practices, protection of biodiversity, and restoration of soil while contributing to women's access to education and economic empowerment. VSSs that make specific efforts to include women in their programs for better management of forests, soil, water sources, and biodiversity have a multiplying effect on gender equality across the SDGs, including SDG 15.

capacity building through a "farmer field school" where members can share challenges and best practices (IFOAM, 2013).

Farmers can become certified under EAOPS and through participatory guarantee schemes (European Commission, 2018). Principles of organic farming support SDG target 15.5 by prohibiting the use of harmful pesticides, which can lead to groundwater pollution, soil contamination, and a loss of biodiversity. Using barrier plants and pest predators can help maintain healthy and biodiverse soils and preserve ecosystems. Good soil management can also lead to significant carbon absorption, with major benefits for climate change mitigation (SDG 13). Thus, Organic certification can create the necessary preconditions to achieve target 15.5 by, for instance, helping to **protect species and their habitats** (VSS content criteria 700369) and enabling **spatial management** for identifying areas for conservation (VSS content criteria 4091). It also promotes **IPM**

(VSS content criteria 2106), which delivers co-benefits for SDG target 2.3 on doubling agricultural productivity.

3.3.3.4 Means of Implementation

In this section, Tanzania could reference its 2019 VNR, which states that the SDGs "are all about doing things differently" and that their implementation "creates demand for new thinking" (United Republic of Tanzania, 2019, p. 103). It could note that by leveraging VSSs' information for SDG reporting, Tanzania is responding to this demand. The use of VSSs to aid in SDG progress reporting also represents **progress made since its last VNR**, which is key to government reporting to the HLPF (DESA, 2022).

Tanzania could note that leveraging VSS-related data to report on SDG progress in the country helps **address data-availability challenges**. It could mention support received in this context, including the present report.

Tanzania could also note that "VSSs can be catalysts for public–private collaboration" (Bermúdez, 2021) and that, in the Tanzanian context, they help enhance **multistakeholder partnerships** for sustainable development among government, the private sector, CSOs, and others. It could mention that there are stakeholders, including private sector actors, that increasingly see the SDGs as a business opportunity, as evidenced by their participation in VSSs, which are aligned with a number of SDGs and targets.

An example of a VSS partnership for sustainable development is the Global Coffee Platform, which organizes in-country platforms in the coffee sectors of Brazil, Colombia, Honduras, Indonesia, Tanzania, Uganda, and Vietnam. The Tanzanian platform is the National Coffee Stakeholders Committee, established in 2009, with 250 current members who cover the entire coffee value chain, including producers, processors, millers, exporters, roasters, service providers, and regulators (Global Coffee Platform, n.d.-a). The committee coordinates various activities in the sector, organizes the National Coffee Conference, and holds dialogues in partnership with the Tanzania Coffee Board (Global Coffee Platform, n.d.-a). By facilitating dialogue, promoting public and private sector engagement, and supporting knowledge development, the platform thus supports and manages activities that are crucial to developing a shared vision for stakeholders in the Tanzanian coffee sector. These activities also strengthen "the platform's functional capabilities to effectively guide a country's key coffee stakeholders" to develop and collaborate on "**a shared vision and strategy for sustainable development of their coffee sector**" (One Planet Network, 2018, emphasis added).

As an additional illustration, Solidaridad East and Central Africa, in partnership with the Tanzania Coffee Research Institute, the Tea Research Institute of Tanzania, and the Horticultural Research and Training Institute, is working on a project to increase "market access for sustainable coffee, horticulture, and tea from Tanzania" (European Union Delegation to the United Republic of Tanzania and the East African Community, 2020). They aim to address the effective use of certification schemes and VSSs to drive market opportunities for Tanzanian-branded sustainable products, including tea, coffee, and horticulture. Collectively, they work to train smallholder farmers, cooperatives, and tea factories on issues around agronomy and primary processing, labour standards, digital solutions, and gender inclusivity, thus also contributing to SDG 5. To increase market access, they initiate matchmaking sessions through meetings and publicity activities between producers and buyers and traders in Tanzania. A key benefit of this partnership is that they are collectively promoting the "institutional strengthening of farmer associations, cooperatives, and tea factories" and training extension workers from ministries, local governments, and partners on VSS principles. The project has been allocated a budget of nearly EUR 3.03 million with a contribution of EUR 2.68 million from the European Union. Thus, in addition to fostering partnerships, the project also shows the **capacity of VSSs**, in partnership with other actors, **to attract financing** for undertaking activities that promote sustainability in relevant sectors (European Union Delegation to the United Republic of Tanzania and the East African Community, 2020).

> **� Lessons learned**
>
> In addition to fostering partnerships for the goals (SDG 17), VSSs have the capacity to attract financing for sustainable development interventions in relevant sectors. For example, Solidaridad East and Central Africa, in partnership with the Tanzania Coffee Research Institute, the Tea Research Institute of Tanzania, and the Horticultural Research and Training Institute, is working on a project to increase market access for sustainable products from Tanzania through training, institutional strengthening, and matchmaking activities. The project secured nearly EUR 303 million in initial funding and an additional EUR 2,680,000 from the European Union.

Tanzania could also highlight a **partnership between the government and VSS stakeholders** that has had a substantial impact on Tanzanian coffee farmers' financial situation, also contributing to SDG 1 (no poverty). Kaderes Plc is a coffee producer organization that is Fairtrade certified. Working with the Fair Trade Country Network Tanzania and the Agricultural Non-State Actors Forum, Kaderes was successful in influencing the Ministry of Agriculture through the Tanzanian parliament to drop coffee tax charges on Fairtrade-certified coffee producers to 17% from 26%. The advocacy activities resulted in a common lobby position paper that was published by the Tanzanian parliament in late 2018, where it abolished the 8% tax that coffee farmers used to bear in full (Vasileva & Reynaud, 2021).

Tanzania's 2019 VNR notes that the **financial demands** associated with SDG implementation mean that private sector financing must be addressed comprehensively "to capacitate the sector to take a lead in the SDGs implementation" (United Republic of Tanzania, 2019, p. 102). Tanzania could

note that VSSs operating in the country have the potential to provide innovative sources of resource mobilization and that such potential should be explored (see the India reporting example).

3.3.4 Further Resources

For additional information to facilitate government reporting on VSSs' contribution to the SDGs, Tanzania could consult VSS-related resources and/or reach out to VSS offices in the country, VSS-certified bodies listed as contacts, or VSS international offices when no in-country representation is available. Contact details and helpful resources are listed in Appendix C, containing guidelines for governments on how to use VSS-related information to report on the SDGs.

4.0 Guidelines for Governments on Using VSS-Related Information to Report on the SDGs

4.1 Introduction

The 2030 Agenda encourages states and stakeholders, including UN entities, the private sector, and CSOs, to report on their efforts to achieve the SDGs (UN, 2015). While stakeholder reporting can help track progress, the role of national governments in this process remains key. Through VNRs, governments can integrate efforts and initiatives undertaken in their jurisdictions by all actors and provide a more unified vision of progress.

The 2030 Agenda requires that "all implementation and follow-up processes be participatory" and include "all levels and sectors of government, civil society, and the private sector" (DESA, 2022, p. 11), among others. With "a revitalized partnership for sustainable development at its core," the 2030 Agenda recognizes stakeholders as valuable partners in implementing the SDGs, and many countries, including developing countries, have benefited from stakeholder involvement in the "design, implementation, monitoring and review of the 2030 Agenda at all levels" (DESA, 2022, p. 11). SDG 17 calls explicitly for "multistakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources" to support sustainable development "in all countries, in particular developing countries" (target 17.6) (UN, 2015).

VSSs are an example of such partnerships. They unite various stakeholders, including producers, buyers, investors, technical assistance providers, and development organizations, in pursuit of the common goal of sustainable development by "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" (UNFSS, 2013, p. 4). Examples of popular VSSs include Fairtrade International, GLOBALG.A.P., and Rainforest Alliance.

High-quality, timely, and reliable data are critical to monitoring, measuring, and reporting SDG progress (UN, 2015). However, many countries struggle to produce and access such data. Alongside monitoring, data availability was the top challenge in 2020, highlighted in 20 of the 47 VNRs submitted to the HLPF that year (De Oliveira & Kindornay, 2021). While data availability improved the following year, data constraints and monitoring progress continued to present difficulties for some 2021 reporters (De Oliveira, 2022). Using VSSs' data to report on SDG progress could address some data-availability challenges and complement ongoing government reporting efforts by providing examples of localized contributions to the SDGs and aid in the VNR reporting process more generally.

To facilitate government reporting by using VSSs' data, we have developed guidelines that governments could use to leverage information contained in standards' content criteria requirements, as well as case studies from their practical application in their countries to report on SDG progress. These guidelines build on our experience with developing the reporting examples found in Section 3, where we illustrate how governments in Uganda, India, and Tanzania could use VSS-related data in VNR reporting with clear illustrations regarding VSSs' content criteria, activities conducted

in the countries, and their results for achieving the SDGs.

4.2 Reporting Structure

To facilitate and support government VNR reporting, DESA publishes an annual *Handbook for the Preparation of Voluntary National Reviews*. This handbook includes the UN Secretary-General's voluntary common reporting guidelines (DESA, 2022). The guidelines have been updated regularly since they were originally developed in 2015. The guidelines invite countries to follow a recommended structure and outline content for inclusion in the VNRs countries present to the HLPF.

The common reporting guidelines say that meaningful VNRs benefit from "an inclusive, participatory, transparent and thorough review process at the national and subnational levels" (DESA, 2022, p. 1). They are "evidence-based, and produce tangible lessons, solutions and commitments … followed by concrete action and collaboration that drives implementation of the [SDGs]" (DESA, 2022, p. 59). The following 10 sections are suggested for inclusion in VNRs:

1. An opening statement
2. Highlights
3. An introduction
4. Methodology and process to prepare the review
5. Policy and enabling environment, including:
    a. Information on ensuring ownership of the SDGs and the VNRs
    b. Integration of the SDGs in national frameworks
    c. Integration of the economic, social, and environmental dimensions
    d. Leaving no one behind
    e. Institutional mechanisms
    f. Systemic issues and transformative actions
6. Progress on goals and targets and evaluation of policies and measures
7. New and emerging challenges
8. Means of implementation
9. Conclusion and next steps
10. Annexes with statistical data and additional information, such as a list of actors consulted and comments from stakeholders.

The guidelines also encourage governments to highlight "[t]wo or three examples of good practices and lessons learned that may be relevant for other countries" (DESA, 2022, p. 16).

We have assessed the extent to which each of these sections could benefit from the inclusion of VSS-related data and concluded that while governments could enhance their reporting efforts by incorporating VSS information throughout their VNRs, VSS data would be particularly valuable for reporting on sections 4 (methodology and process for the preparation of the review), 5(e) (institutional mechanisms), 6 (progress on goals and targets and evaluation of policies and measures), and 8 (means of implementation). Information to be included in these sections would be based on previous VNRs, if any, as well as country context, the presence and operation of VSSs in the country, and the availability of information from implementing VSSs and case studies of

implementation. Below, we explain in more detail how governments can leverage data from the VSSs operating in their countries to support reporting on these VNR sections.

4.2.1 Methodology and Process to Prepare the Review

The UN Secretary-General's guidelines recommend that governments highlight, among other aspects, information about the methodology used for the review, along with its "scope, depth, and limitations" (DESA, 2022, p. 62). Governments are also encouraged to include information on the extent of stakeholder engagement in the VNR preparation process, whether the whole-of-government approach was used, and whether and how civil society was engaged.

Engaging stakeholders on VNR preparation through existing or specially created mechanisms can provide opportunities to leverage information in VSSs' content criteria, VSS sustainability impact measurements, and case studies of how VSSs' practical application helps advance specific SDGs and targets, in order to report on progress. Specifically, such engagement can facilitate the process of VSSs' data collection, production, and management, and thus help address data-availability challenges in VNR reporting.

For example, the reporting example for Tanzania suggests that the government engage with stakeholders through Global Compact Network Tanzania or the Tanzania Sustainable Development Platform to encourage producers, operators, and other VSS stakeholders to play a more active role in enabling government reporting by gathering and making VSSs' data available. The coordinator of the Tanzania Sustainable

Development Platform signalled that it would be open to facilitating VSS data collection to aid government reporting to the HLPF, subject to funding being available to support such endeavours.

Stakeholder involvement in VNR preparation could provide opportunities for governments to encourage producers, operators, and other VSS stakeholders to play a more active role in enabling government reporting by gathering and making available VSS data, among other efforts. For example, during consultations/workshops on VNR drafts, governments could ask stakeholders for specific inputs on how VSSs help them achieve the SDGs on the ground. In its first VNR, for instance, Uganda said it planned to engage in consultative processes across sectors to help with VNR development. The government could invite VSS certification bodies and VSS-certified entities in the country to engage in such consultative processes to harness opportunities to incorporate VSS-related data in SDG reporting and include information on these efforts in its next VNR. Such engagement would also enable VSSs to learn from government initiatives on the SDGs, making this a mutually beneficial process.

4.2.2 Institutional Mechanisms

The UN Secretary-General's guidelines encourage governments to include "information on [how] the country's institutional framework has evolved in light of the 2030 Agenda" (DESA, 2022, p. 63) and how existing and new institutional structures support SDG implementation. The guidelines urge governments to analyze, among other areas, collaboration among institutions, including data gathering; how they support

SDG implementation; and national efforts to monitor, evaluate, and review progress.

In this section, governments could discuss how existing or new institutional structures, arrangements, and approaches to SDG implementation could facilitate, or are already facilitating, VSS-related information gathering and use in order to advance the SDGs and report on progress. Our reporting example for Tanzania, for instance, suggests that the government report on any efforts undertaken through institutional mechanisms to build awareness of the roles different stakeholders could play and of their engagement in SDG implementation, monitoring, and review. Activities to report could include, for example, achieving VSS certification and following VSSs' requirements for production and trade. Similarly, our reporting example for India notes that the country's rich institutional landscape could facilitate the roles different stakeholders play in SDG implementation by becoming VSS-certified and following VSSs' requirements and recognizes that many businesses in India use VSSs to inform their production and trade practices, thus contributing to the SDGs.

4.2.3 Progress on Goals and Targets and the Evaluation of Policies and Measures

The UN Secretary-General's guidelines encourage countries to briefly outline progress on all the SDGs, highlighting "trends, successes, challenges, emerging issues, and lessons learned" (DESA, 2022, p. 34) and evaluating "actions taken to address gaps and challenges" (DESA, 2022, p. 64). The guidelines suggest that some SDGs and targets could be addressed in greater detail,

particularly those related to leaving no one behind (e.g., efforts to include women in sustainable development), which could also "support the identification of solutions, best practices, synergies, trade-offs and spillovers and areas requiring advice and support from other countries or institutions" (DESA, 2022, p. 64). Countries that have previously submitted VNRs are encouraged to highlight progress since the last VNR.

VSS-related data, such as VSSs' content criteria, case studies from their practical application, and evidence of gender mainstreaming by VSSs, could support and enhance government efforts to report on progress on specific SDGs and targets and advance policy coherence in implementation by leveraging synergies and minimizing trade-offs. Our reporting examples for India, Tanzania, and Uganda (Section 3) focus on a set of preselected SDG targets (for the list of targets, see Section 2), and governments can leverage this selection based on the benchmarking done in Section 2. Our reporting examples provide concrete suggestions for what governments could include in this VNR section.

To identify examples of VSSs' practical application that further SDG targets, governments can rely on a variety of resources, including the ITC Standards Map, the Evidensia platform, International Institute for Sustainable Development State of Sustainability Initiatives reviews, UNFSS flagship reports, VSS impact reports, and other related documents (see Appendix C). As case studies often further multiple SDGs and targets, governments can opt for the target deemed the most relevant in deciding under what target to include a particular case study.

4.2.4 Means of Implementation

The UN Secretary-General's guidelines suggest that governments discuss "the full range of financing sources," including public and private, domestic and international, along with non-financing means of implementation, such as technology, capacity building, data, and multistakeholder partnerships (DESA, 2022, p. 37). In this context, countries are encouraged to discuss their experiences, challenges, and needs. It should be noted here that countries may include information on means of implementation in stand-alone sections and under SDG 17 (partnerships for the goals).

In this section, governments could talk about how information in VSSs' criteria requirements and case studies from their practical application could help fill potential **data** gaps at the regional and local levels and facilitate reporting on localized contributions to the SDGs. In India, for example, Bonsucro-certified sugar mills are required to maintain data related to sustainability and labour practices for the Bonsucro calculator. This information could be used for state- and district-level reporting, as envisioned in India's 2020 VNR, as well as for the country's SDG progress reporting, as we recommend in our reporting example.

With respect to VSSs' capacity to mobilize **investment and finance** through the work they do, governments could note that standards operating in their jurisdictions have the potential to provide additional sources of resource mobilization. For instance, our reporting example for India mentions the case of Better Cotton's GIF, which seeks to enhance the capacity building of cotton farmers around the world to use Better

Cotton practices. The reporting example notes that in its first year, the GIF invested more than EUR 8.9 million in seven countries, including India.

On **multistakeholder partnerships** for SDG implementation, governments could note that "VSSs can be catalysts for public–private collaboration" (Bermúdez, 2021) and briefly discuss their role in achieving sustainable development outcomes by promoting partnerships with local actors, including buyers, producers, investors, and local authorities. In Tanzania, for instance, VSS stakeholders' partnership with the government resulted in a reduction in coffee tax charges on Fairtrade coffee producers from 26% to 17%, improving farmers' financial situation. Other examples of VSS partnerships that contribute to sustainable development include the Global Coffee Platform, referenced in the reporting example for Tanzania, and the collaboration between Irish Aid and Fairtrade to help ensure that coffee farmers in Uganda's Gumutindo Coffee Cooperative keep getting a fair price for their crops.

4.2.5 Good Practices and Lessons Learned

As recommended in the voluntary common reporting guidelines, governments could highlight good practice examples and lessons learned from using VSSs' information for SDG reporting or to illustrate how VSSs can serve as effective tools to advance the goals and targets on the ground. We have highlighted several examples for India, Tanzania, and Uganda in boxes throughout Section 3.

4.3 Reporting Guidelines

Based on the above structure, the benchmarking of VSSs against the selected SDGs conducted in Section 2, and our experience elaborating the reporting examples for India, Tanzania, and Uganda, we have developed a set of guidelines for governments that might wish to leverage VSSs' information for their VNR reporting to promote policy coherence in implementation by building on synergies and minimizing trade-offs.

1. **Identify and describe processes for stakeholder engagement in the preparation of the VNR that could help the government solicit inputs from VSS stakeholders.**
VSS stakeholders, such as ministries, government agencies, civil society, research institutions, international organizations, buyers, producers, investors, and local authorities, could be involved in the VNR preparation process through institutional mechanisms, structures, and platforms, as well as VNR preparation workshops, online or in-person consultations, and other modes of engagement. The government could ask stakeholders for specific inputs on how VSSs, through their content criteria requirements and practical application, help them achieve the SDGs on the ground. This information could be included in the section "Methodology and process for preparation of the review."

2. **Identify the existing or new institutional structures, arrangements, and approaches for SDG implementation that can also facilitate VSSs' information gathering and use in support of the**

SDGs and reporting on progress.
These could include capacity building and awareness-raising efforts on the roles different stakeholders can play in SDG implementation, monitoring, and review, including, for example, by achieving VSS certification and following VSSs' requirements for production and trade. Other examples include promoting partnerships with VSS bodies and local actors, such as buyers, producers, investors, and local authorities, to jointly advance the achievement of the SDGs. Depending on the national context, governments can also explore the role of parliament in supporting the gathering of VSS-related data to report on SDG progress. This information could be included in the section "Institutional mechanisms."

3. **Identify relevant VSS content criteria and gather evidence from VSSs' activities to support reporting on progress toward achieving specific SDG targets.**
The government could rely on our benchmarking of VSSs' content criteria against a set of selected targets in Section 2. The government could use case studies of VSS implementation to provide evidence of the work done in accordance with specific VSSs' content criteria. Such case studies could refer to activities VSSs carry out, results they have achieved, or initiatives they plan to advance in partnership with other stakeholders. These examples could support multiple targets and SDGs and could be included in the section "Progress on goals and targets." The government could use them to report on the SDG target to which the case studies contribute the most, with

any cross-references, as appropriate. Appendix C provides an indicative list of resources that could be used to identify case studies.

4. **Describe how VSSs help address data-availability challenges, promote multistakeholder partnerships for SDG implementation, and mobilize investment and finance. Use case studies to substantiate, as appropriate.** In the section "Means of implementation," governments could report on how VSSs operating in their jurisdictions help promote partnerships with local actors, such as buyers, producers, investors, and local authorities, as well as how they can provide additional financial resources. They could also describe how information from VSSs' content criteria requirements and case studies from their implementation can help fill data gaps.

5. **Select case studies from VSSs' activities in the country to highlight examples of good practices for achieving the SDGs and/or lessons learned.** Good practice examples could show how implementing VSSs helps advance multiple SDGs or provides a particularly valuable and/or original contribution to a specific goal or target Examples of lessons learned could highlight innovative ways in which VSS activities help overcome specific challenges or VSS initiatives worth replicating. This information could be included in the section "Progress on goals and targets."

These guidelines are intended to help governments leverage partnerships to report on SDG progress, making the most of limited resources. Our goal is to highlight opportunities to alleviate some of the burdens of SDG progress reporting and VNR preparation. Additional work may be needed to facilitate reporting on SDG targets beyond the subset analyzed in the present report.

5.0 Conclusions

Alignment between VSSs and the SDGs is widely recognized, and the potential for a mutually supportive relationship is beyond dispute. VSSs are voluntary, private, multistakeholder initiatives that are widely acknowledged for their critical role in enabling collaboration across sectors and levels of governance to achieve the SDGs. The present report's focus on VSSs as stakeholders and key partners in SDG implementation thus provides additional evidence of standards' contribution to sustainable development.

In this report, we have explored how to better identify and leverage the links between VSSs and the SDGs in support of the 2030 Agenda for Sustainable Development. Through a benchmarking exercise (Section 2), we assessed the environmental, economic, and social requirements of 13 VSSs in terms of their potential to contribute to the achievement of select targets for SDGs 2 (zero hunger), 6 (clean water and sanitation), 8 (decent work and economic growth), 12 (responsible consumption and production), and 15 (life on land). Unlike other VSS–SDG benchmarking exercises, our assessment included the degree of coverage of VSS requirements as immediate, time-bound, or recommended. This allowed for a better understanding of the potential for VSSs to contribute to the fulfillment of the SDGs, in accordance with the 2030 deadline.

In addition to benchmarking requirements in standard documents, measuring the sustainability impacts realized through compliance with these requirements is essential. VSSs' impact reporting can also provide case studies on their contributions to fulfilling the SDGs, which were leveraged to examine how they could be used for

national SDG progress reporting to the HLPF. As VSSs are increasingly expected to monitor and report on the impacts of their implementation, their role in supporting national SDG reporting is gaining more significance. To demonstrate this potential, we examined three national SDG reporting examples for Uganda, India, and Tanzania to assess how these countries could use VSS-related information (VSSs' content criteria and case studies from their jurisdictions) to document and report on SDG progress in their VNRs (Section 3).

Based on the lessons learned from the Ugandan, Indian, and Tanzanian reporting examples, as well as insights from the common reporting guidelines for VNR reporting, we have formulated guidelines that national governments could use to bolster their SDG reporting efforts (Section 4). The recommendations provide practical suggestions to national agencies on how to improve coordination and build synergies between governments and VSSs to advance the SDGs.

5.1 Key Takeaways

Government action to achieve the 2030 Agenda is paramount. Yet, the success of the SDGs depends on multisectoral cooperation and partnerships, including public bodies, private actors, and civil society. Below are some key takeaways that highlight the value and significance of collaboration among governments and VSSs for SDG implementation and VNR reporting.

1. **When VSSs have mandatory, time-bound commitments to sustainability issues, progress toward the SDGs will be greater.** When farmers implement VSS requirements, we see meaningful progress toward the SDGs. The VSSs examined show a high degree of coverage of issues, including the conservation of soil, water, and forests; the protection of HCVAs; the prohibition of hazardous chemicals and prevention of runoff; voluntary employment; non-discrimination at work; and training on sustainability issues for workers.

2. **VSSs' content criteria and case studies of their implementation can serve as useful resources that can support SDG progress reporting and promote policy coherence while building on synergies and minimizing trade-offs.** The information contained in VSSs' content criteria can indicate the relevant type of case studies of in-country VSS activities that support farmers complying with production requirements. Such case studies can also support the gathering of data for SDG progress reporting, for example, in VNRs and national SDG reports. In addition, they can serve as a training resource for the development of SDG reports both for domestic and international progress reporting.

3. **VSSs can support participatory reporting on SDG progress by sharing impact data, and governments could benefit from collaborating with VSSs in this regard.** The process of meaningful VNR development at the national and subnational levels is meant to be inclusive, participatory, and transparent. As our case study analysis suggests, some VSSs already collect data on their implementation, and national governments could better collaborate with them to gather and share relevant data on tracking progress toward achieving the SDGs. Nevertheless, VSS could further expand the systematic collection of impact data in the countries where they operate.

4. **There are opportunities for increased efforts by regional and national VSSs to boost their contributions to the SDGs.** Although VSSs are oriented toward moving us toward sustainability, they do not have to be explicitly aligned with the SDGs to support them. Some of the impacts that VSSs have on farmers, producers, and local communities may not be explicitly linked to SDG targets, but they can create enabling conditions for their achievement.

5. **Governments can use work already being done and data already being gathered by VSSs operating in their jurisdictions to report on progress toward achieving the SDGs.** Governments could enhance their SDG reporting by using relevant data from VSS monitoring and evaluation or sustainability impact measurement documents.

6. **VSSs have the potential to deliver benefits beyond the areas their criteria cover, providing additional contributions to the 2030 Agenda and the SDGs.** While the VSSs

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examined have been found to have less coverage related to access to financial services and ensuring a living wage for workers, our case studies revealed evidence of major improvements in workers' wages, which enable productive and decent employment (SDG 8).

7. **VSSs can play a role in supporting sustainable development post-2030.** The world has reached the midpoint on the road toward fulfilling the 2030 Agenda. However, the international community is not on track to meet the SDGs, and progress has been pushed back due to the COVID-19 pandemic, conflicts, and the food, energy, and financial crises. As the world community devises new strategies to accelerate progress toward 2030, the question of what happens after 2030—regardless of whether the SDGs are achieved—looms large. VSSs, which involve actors ranging from farmers and buyers to extension services and investors, offer promise and potential to improve the lives of those they affect in ways that not only promote the 2030 Agenda but support sustainability post-2030.

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Appendix A. International Trade Centre Criteria Chosen for Each Sustainable Development Goal and Target

Below is a list of International Trade Centre (ITC) criteria chosen for determining the degree of contribution each voluntary sustainability standard makes toward the selected Sustainability Development Goals (SDGs) and their targets. The name of the criteria (numeric code) and definitions come from Data Entry Tool Version 10 of ITC.

Table A1. SDG 2 targets 3 and 4 with selected ITC criteria and their descriptions

SDG 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
SDG-Target 2.3	"By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment." (UN, 2015)
Criteria on principles and practices to secure a living wage based on sector or region specificities (1991)	Refers to a wage based on the amount an individual needs to earn to cover the basic costs of living. Basic costs include housing, nutrition, transport, health care and savings. Currently, there is no internationally accepted way of calculating or defining a living wage. Therefore, this criterion looks at a scheme's promotion of payment of wages sufficient for a decent scheme of living and recognizes those schemes that use and thereby actively promote the living wage concept.
Criteria on land title and legal use rights (4078)	Refers to the requirement that the unit of operation possess legal land tenure or title and valid user rights according to formal and customary laws, and that acquiring the land involved free, prior, and informed consent without involuntary resettlement and/or coercion.

SDG 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Criteria on customary rights of tenure (700403)	Refers to the systems under which many rural communities operate to express and order ownership, possession, and access, and to regulate use and transfer. The norms of customary tenure derive from and are sustained by the community itself rather than the state or state law (statutory land tenure). Although the rules that a particular local community follows are known as customary law, they are rarely binding beyond that community. In a formal legal setting, information on rights, whether held by individuals, families, communities, the state, or commercial and other organizations, is often recorded in some form of land registration and cadastre system. In a customary tenure environment, information may be held, unwritten, within a community through collective memory and the use of witnesses. In a number of communities, those holding informal rights may have "informal proofs" of rights, i.e., documents accepted by the community but not by the formal state administration.
Criteria on implementation of an integrated pest management (IPM) system (2106)	Refers to an IPM/integrated crop management system as an ecological approach to reducing the need for chemicals using a variety of complementary strategies, including mechanical and physical devices and genetic, biological, cultural, and chemical management. These methods are done in three stages: prevention, observation, and intervention. If a scheme completely prohibits the use of hazardous chemicals and synthetic pesticides, this criterion is not relevant and therefore positively assessed.
Criteria on access and selection of inputs and varieties (traditional versus improved/ engineered) (300467)	Refers to avoiding policies or practices of conditional access to/ subordinating status to get inputs (e.g., seeds, feed, fertilizers, packaging materials and products, transportation companies and other related services).
Criteria on diversification of business operations (700413)	Refers to diversification as a strategy to cover risk management strategies of producing a range of different types of products and services.
Criteria on access to financial services (1973)	Refers to requiring access to financial products, which traditionally presents barriers to entry for the most precarious and isolated populations (such as women). The scheme organization may play a role in facilitating access.
Criteria on distribution networks and access to markets/buyers (1959)	Refers to market access mechanisms for producers.

SDG 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Criteria on access to financial services for women (payment, credit, savings, subsidies) (900036)	Refers to requiring specific access to payment, credit, savings, and subsidies for women. The scheme organization may play a role in facilitating access to financial products that traditionally have barriers to entry for the most precarious and isolated populations, such as women.
Criteria on access to technology and innovation (300471)	Refers to requirements for the unit of operation to promote/develop/implement an open innovation strategy along the supply chain, which encourages access to technology for suppliers.
Criteria on traditional knowledge used for conservation and sustainable use of biodiversity (900003)	Refers to efforts on biodiversity conservation, learning from local knowledge, which is often intergenerationally transmitted. Most Indigenous and local communities are situated in areas where the vast majority of the world's genetic resources are found and can be consulted on biodiversity conservation policies and practices.
Staff training on sustainability issues (300451)	Refers to training sessions that cover sustainability-related topics (e.g., environment, social, economic, quality, culture, health, and safety). Companies shall provide regular and recorded training sessions to workers and management, and such training shall be repeated for all new or reassigned workers and management.
SDG target 2.4	**"By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality." (UN, 2015)**
Criteria on specific climate adaptation activities (701327)	Refers to relevant adaptation activities that may be captured in other sections of a scheme, e.g., relating to biodiversity, water or soil. This criterion refers to such specific activities that are relevant adaptation options (e.g., water harvesting) and are explicitly specified as such in the scheme.
Criteria on soil conservation (800000)	Refers to managements strategies in place to prevent the decline of soil fertility, development of acidity, salinization, alkalization, deterioration of soil structure, accelerated wind and water erosion, and loss of organic matter and diversity. Provide evidence (criterion number and URL) of requirements for management strategies on soil conservation.
Criteria on soil quality, productivity, and biodiversity (2055)	Refers to processes in place to determine how well a soil performs the functions of maintaining biodiversity and productivity, partitioning water and solute flow, filtering and buffering, nutrient cycling, and providing support for plants and other structures. Provide evidence (criterion number and URL) of requirements for management strategies on soil quality, productivity, and biodiversity.

SDG 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Criteria on soil enhancement by use of cover crops (701332)	Refers to processes in place to grow cover crops in order to prevent soil erosion and maintain soil organic matter and soil nutrients, increase nitrogen availability, suppress weed growth, and attract beneficial insects.
Criteria on soil enhancement by crop rotation or intercropping (300622)	Refers to any practices in place for alternating the species or families of annual and/or biannual crops grown on a specific field in a planned pattern or sequence to break weed, pest, and disease cycles and to maintain or improve soil fertility and organic matter content. Provide evidence (criterion number and URL) of requirements for crop rotation or intercropping.
Criteria on mixed land-use system in agroforestry (1000003)	Refers to agroforestry practices, integrating management, and use of forest and agricultural resources. Mixing land-use systems and shifting cultivation or periodic agriculture within a natural forest environment contributes to the regeneration of soils and ecosystems.
Criteria on prohibition of production on land with High Conservation Value (HCV) with conversion cut-off date not later than December 2010 (700372)	Refers to the conversion of HCV/High Ecological Value/High Carbon Stock areas (forests, grasslands, or wetlands) to farmland. The cut-off date for certified production established by conversion is December 2010.
Criteria on production efficiency/productivity (1971)	Refers to processes to improve the production efficiency/ productivity (economic output per unit of input) of a unit of operation (e.g., investment in new technologies, improved labour relations, apprenticeships, increased automation, and skills training). An increase in productivity must not go along with a reduction in workers' well-being. For agricultural schemes, the primary productivity focus should be placed on physical outputs or ratios of outputs to inputs.
Criteria on emergency response plans or strategies to climate related hazards (701326)	Refers to requirements to have specific emergency responses to climate related hazards (caused by extreme weather events) in place.

Table A2. SDG 6 targets 3 and 4 with selected ITC criteria and their description

SDG 6	Ensure availability and sustainable management of water and sanitation for all
SDG target 6.3	**"By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally." (UN, 2015)**
Criteria on wastewater quality management and treatment (2031)	Refers to any precautions on the quality of wastewater or water discharge, such as treatment of wastewater and minimizing the discharged load of contaminants.
Criteria on surface and ground water contamination/ pollution (10084)	Refers to methods used to prevent surface and groundwater contamination/pollution from agrochemicals, wastewater, contaminated soil (e.g., split applications, incorporation or direct injection, using slow-release or stabilized fertilizers, the use of animal manure in soil, non-application on fallow land).
Criteria on quality of water used in production (4081)	Refers to any precaution relating to the quality of water being used (e.g., do not use contaminated water for irrigation).
Criteria on chemicals storage and labelling (60004)	Refers to requirements to safely store and appropriately label chemicals. If a scheme completely prohibits the use of hazardous chemicals and synthetic pesticides, this criterion is not relevant and therefore positively assessed.
Criteria on use and management of hazardous chemicals (800006)	Refers to the identification of all chemicals stored or used, identification of hazards, assessment of risks and control of exposure to hazardous chemicals through good management and application procedures.
Criteria on prevention of runoff of waste chemicals, minerals, and organic substances (300661)	Refers to runoff of nutrients that leads to eutrophication causing taste and odour in public water supply, excess algae growth leading to the deoxygenation of water, and the leaching of nitrate to groundwater. Excessive levels are a threat to public health.
SDG target 6.4	**"By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity." (UN, 2015)**
Criteria on water extraction/irrigation (10086)	Refers to efficient use of water extracted for irrigation (e.g., monitoring on-farm water-efficiency levels; high-efficiency delivery mechanisms; new technologies like soil moisture and canopy sensors; conservation tillage; management of soil fertility and water retention capacity; scheduling of irrigation during night to reduce evaporation).

SDG 6	Ensure availability and sustainable management of water and sanitation for all
Criteria on water resources monitoring, use, and consumption (2037)	Refers to efficient use of water extracted for irrigation (e.g., monitoring on-farm water-efficiency levels; high-efficiency delivery mechanisms; new technologies like soil moisture and canopy sensors; conservation tillage; management of soil fertility and water retention capacity; scheduling of irrigation during night to reduce evaporation).
Criteria on water dependencies and water scarcity (2036)	Refers to efforts to avoid creating or aggravating situations of water scarcity.
Criteria on water reuse, recycling, and harvesting (2032)	Refers to water that is used multiple times (either treated or non-treated, by the same user or by different users) or water that is stored through practices such as rainwater harvesting and later used, e.g., for irrigation agriculture.
Criteria on water management plan (300663)	Refers to a water management plan to optimize water usage, water quality, and water availability and to reduce wastewater (e.g., for irrigation). The plan can, for instance, include training on the more efficient use of water.
Criteria on assessment of risks and impacts on water usage (300455)	Refers to factors such as defining unique water-related risks; integrating a water strategy into operational plans; assessing, in detail, the degree of dependence on water and its potential implications; identifying policy and governance gaps that fuel risks; seeking solutions with policy-makers and local partners; stakeholder engagement; setting specific schemes for operational water use.
Criteria on natural wetlands maintained in undrained conditions (800009)	Refers to the protection of wetlands due to their species-rich habitats, which play a valuable role in flood protection, water quality enhancement, food chain support, and carbon sequestration.

Table A3. SDG 8 targets 7 and 8 with selected ITC criteria and their description

SDG 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
SDG target 8.7	**"Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms." (UN, 2015)**
Criteria on voluntary employment – No forced labour (ILO 29 & 105) (1986)	Refers to a prohibition against imposing or permitting the imposition of forced or compulsory labour for the benefit of private individuals, companies, or associations (ILO 29) as well as to suppress and not to make use of any form of forced or compulsory labour (ILO 105). This applies to any type of forced and compulsory labour, including bonded labour and slavery, as defined in both ILO conventions. Criteria covering the prevention of employees ending their employment, withholding of payment, deposit or loans, or withholding of papers or identification documents are not sufficient alone to comply with this criterion.
Criteria related to worst forms of child labour (ILO 182) (1979)	Refers to the prohibition of the worst forms of child labour as defined in ILO 182: (a) all forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage and serfdom, and forced or compulsory labour, including forced or compulsory recruitment of children for use in armed conflict; (b) the use, procuring, or offering of a child for prostitution, for the production of pornography or for pornographic performances; (c) the use, procuring or offering of a child for illicit activities, in particular for the production and trafficking of drugs as defined in the relevant international treaties; (d) work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety, or morals of children.
Criteria related to child labour and minimum age (ILO 138) (1989)	Refers to the general minimum age for employment as set at 15 years (13 for light work) and the minimum age for hazardous work at 18 (16 under certain strict conditions). ILO 138 provides for the possibility of initially setting the general minimum age at 14 (12 for light work) where the economy and educational facilities are insufficiently developed. In cases where the ILO norm and national law differ, the stricter rule shall apply. Only schemes that include the requirements set out by ILO convention 138 will be recognized. For agriculture schemes: Where children work on their family's farm, Article 32(1) of the Convention on the Rights of the Child (1989) needs to be respected, making sure that children are protected from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development.

SDG 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Criteria on young workers working hours (800019)	Refers to working hours not affecting young workers' attendance at school or their participation in vocational orientation approved by the competent authority. There should also be provisions for night work, rest periods, annual leave, and rest breaks.
Criteria on children attendance to school (2013)	Refers to requirements stating that all children under 15 years of age living on the premises should attend school or receive schooling at home.
Criteria on retention of workers' documentation and personal possessions (ID, passport) (10140)	Refers to the detention of workers' personal documents, such as ID card, passport, and other important personal documents and possessions (documents issued by appropriate authorities necessary for the worker to prove his/her identity, grants permission to work or his/her movement).
SDG target 8.8	**"Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment." (UN, 2015)**
Criteria on scope of workers' rights and benefits applicable equally to all types of workers (1982)	Refers to the provision of a legally binding written contract of employment for all (permanent, seasonal, part-time, seasonal, migratory, piecework, etc.) workers that includes at least the following: the job duties related to the position; compensation for illness/injury; termination policies, remuneration, leave, working hours, overtime policy, insurance benefits. A copy of the signed contract must be provided to the worker.
Criteria on non-discrimination at work (ILO 111) (1987)	Refers to (a) any distinction, exclusion or preference made on the basis of race, colour, sex, religion, political opinion, national extraction or social origin, health condition (HIV testing) that has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation; (b) such other distinction, exclusion, or preference that has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation as may be determined by the Member concerned after consultation with representative employers'and workers' organizations, where such exist, and with other appropriate bodies (ILO, 1958).
Criteria relating to sexual exploitation/harassment (10090)	Refers to sexual harassment, defined (by ILO, n.d.-c) as a sex-based behaviour that is unwelcome and offensive to its recipient. Behaviour that qualifies as sexual harassment: physical violence; touching; unnecessary close proximity; verbal comments and questions about appearance, lifestyle, and sexual orientation; offensive phone calls; whistling, sexually suggestive gestures; and the display of sexual materials to its recipient.

SDG 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Criteria on migrant, seasonal, temporary and non-full-time workers' contract employment regarding the protection of their labour rights (800016)	Refers to a system of supervision of contracts of employment between an employer and a worker for employment. Contracts should contain, inter alia, provisions indicating the conditions of work, the remuneration offered to the workers, the occupational category in which he/she is engaged, details on the provision of housing if applicable, etc.
Criteria relating to women's rights at work (2531)	Refers to rights such as regular pay and regular working hours; permanent contracts; safe and non-hazardous work environments; freedom from sexual violence, harassment, and forced pregnancy tests, etc. This criterion goes beyond a non-discrimination clause or legal compliance. It refers to any process or policy that not only protects women's rights at work but is further aimed at promoting women's (economic) rights (e.g., special quotas for women workers).
Criteria relating to safety at work (ILO 184) (2001)	Refers to a health and safety plan aimed at preventing accidents and injury to health arising out of, linked with, or occurring in the course of work, by eliminating, minimizing, or controlling hazards in the working environment as defined in ILO 184. Factors include equipment (incl. protective equipment): manual handling of material and handling of chemicals according to national or other recognized safety and health scheme; provision of appropriate and comprehensive information on hazards, as well as provision of appropriate training (warning signs should also be clear to illiterate workers). Health risks may include: using/applying fertilizer or chemicals (agrochemicals or other); handling waste; using machinery; working circumstances (e.g., working at height); fire, flood, power failure, freezing, failure of water supply; design and set up of storage and workshops. A health and safety plan should be updated annually.
Criteria on good conditions of work for young workers (800018)	Refers to the protection and monitoring of young workers' health and safety; the types of employment that must not be carried out by young people, including work that exceeds their mental or physical capacities and work involving harmful exposure to dangerous substances.

SDG 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Criteria on occupational health and safety, as defined in ILO 155 (740206)	Refers to compliance with national regulations, as well as identification of risks, maintenance of equipment, handling of hazardous material, protective equipment and clothing, appropriate training, and cooperation between management and workers. Workplaces, machinery, equipment must be safe and without risk to health. This means that chemical, physical, and biological substances and agents are without risk to health when appropriate measures are taken. • Employers shall provide adequate protective clothing and personal protective equipment (PPE). • Provide measures to deal with emergencies and accidents, including adequate first-aid arrangements. • Workers and their representatives are given appropriate training in occupational health and safety. (ILO, 1981).
Criteria on freedom of association (ILO 87) (1993)	Refers to the right of workers and employers to establish and join organizations of their own choosing without previous authorization. Workers' and employers' organizations shall organize freely and not be liable to be dissolved or suspended by administrative authority, and they shall have the right to establish and join federations and confederations, which may in turn affiliate with international organizations of workers and employers (ILO, 1948).
Criteria on collective bargaining (ILO 98) (1996)	Refers to "all negotiations which take place between an employer, a group of employers or one or more employers' organisations, on the one hand, and one or more workers' organisations, on the other, for: (a) determining working conditions and terms of employment; and/or (b) regulating relations between employers and workers; and/or (c) regulating relations between employers or their organisations and a workers' organisation or workers' organisations." Where restricted under law, other means of collective negotiation must be allowed (Article 2) (ILO, 1949).

Table A4. SDG 12 targets 4 and 5 with selected ITC criteria and their description

SDG 12	Enable sustainable consumption and production patterns
SDG target 12.4	**"By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment."**
Criteria on prohibition of use of hazardous chemicals (as defined by World Health Organization categories 1A and B, 2 and the Stockholm and Rotterdam conventions) (2100)	Refers to specifications of prohibited substances, such as a list of banned chemicals and pesticides. References can be Class 1A and B substances as defined by WHO, the Stockholm Convention on Persistent Organic Pollutants, and the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.
Criteria on prohibition of use of hazardous chemicals (as defined by PAN International List of Highly Hazardous Pesticides and REACH Convention) (700402)	Refers to the prohibition of the use of substances defined by the PAN International List of Highly Hazardous Pesticides and by REACH Directive as being of very high concern (published by ECHA Candidate List) (except for defined derogation).
Criteria on chemical application records and reduction (2098)	Refers to requirements to inventory and maintain records of utilization of chemicals or requirements to establish concrete reduction targets (e.g., prohibition or need-based application of pesticides), using only products registered for use and at registered rates.
Criteria on chemicals: selective and targeted application (60024)	Refers to requirements to ensure that chemicals are applied in an appropriate and cautious way to avoid negative effects on the environment, namely where this ongoing human activity, e.g., by drifting (especially, in case of aerial spraying). If a scheme completely prohibits the use of hazardous chemicals and synthetic pesticides, this criterion is not relevant and therefore positively assessed.
Criteria on chemical substances disposal/ waste (2099)	Refers to avoiding or minimizing the negative impacts of chemical use on human health and the environment through proper storage, disposal, and labelling of chemicals and/or waste. If chemical waste is not properly disposed of, groundwater and surface water contamination become probable.

SDG 12	Enable sustainable consumption and production patterns
Criteria on general prohibition of use of genetically modified organisms (GMOs)/ genetically modified varieties (2655)	Refers to the use of living organisms whose genetic material has been artificially manipulated through genetic engineering. GMOs are engineered to withstand direct application of herbicide and/or to produce an insecticide.
Criteria on air quality/ pollution monitoring (10076)	Refers to requirements on monitoring emissions of air pollutants (excluding greenhouse gases). Key pollutants can include World Health Organization pollutants, globally regulated air pollutants (including total organic carbon), hazardous air pollutants, toxic air pollutants, etc.
SDG target 12.5	"By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse."
Criteria on waste disposal (including solid waste, non-solid waste, excluding hazardous waste) (2050)	Refers to the collection, treatment, and disposal of garbage, sewage, and other waste products (e.g., obsolete fertilizers and pesticides and empty containers; plastic, paper, and metal waste; fuel and oil residues; carcasses (in the case of mixed farms); redundant equipment and machinery.
Criteria on treatment and use of solid waste (22577)	Refers to the fact that if wastes are not properly handled, they can pollute surface and groundwater and contribute to air pollution. Examples of solid waste are manure, waste forage, dead stock, silage effluent, processing plant waste, and plastic waste.
Criteria on reducing solid waste volumes (700383)	Refers to reducing the total amount of waste being produced (excluding wastewater). Includes the control of the collection, treatment, and disposal of different solid wastes (e.g., wastes from food processing, crops, forestry, animal solid wastes).
Criteria on reducing/re-use/recycle solid waste (2042)	Refers to requirements to reuse or recycle waste on-site (excluding wastewater), e.g., use of organic material as fertilizer or renewable energy. The first part of the waste management 3Rs hierarchy addresses the reduction of waste through prevention.
Criteria on principles and practices on composting (2051)	Refers to active organic matter, which provides habitat and food for beneficial soil organisms that help build soil structure and porosity, provide nutrients to plants, and improve the water holding capacity of the soil.
Criteria on treatment and use of non-solid waste (4084)	Refers to wastewater and sewage sludge, which contain traces of pollutants. Some of these substances can be phytotoxic and toxic to humans and/or animals.
Criteria on disposal of hazardous waste (700389)	Refers to requirements to dispose of hazardous waste (such as chemical waste, empty chemical containers, fuels and lubricants, batteries and tires) in an environmentally appropriate manner.

Table A5. SDG 15 targets 2 and 5 with selected ITC criteria and their description

SDG 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss
SDG target 15.2	"By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally."
Criteria to prevent deforestation (2071)	Refers to any practice aimed at preventing deforestation (e.g., use tree species for regeneration that are well adapted to site conditions).
Criteria on sustainable timber harvesting (700375)	Refers to restrictions or requirements related to timber harvesting to avoid damage to the existing forest stand (a contiguous area that contains a number of trees that are relatively homogeneous or have a common set of characteristics).
Criteria to enhance conservation of forests (2073)	Refers to any practice aimed at maintaining ecosystem health and the long-term sustainability of forests.
Criteria to remediate deforestation (1000002)	Refers to any practice aimed at remediating deforestation (e.g., reforestation programs with tree species adapted to site conditions).
Criteria for the conversion of forests into production lands (2072)	Refers to requirements against land conversion or requirements for environmental or biodiversity assessments prior to conversion. An example could be the requirement to carry out High Conservation Value (HCV) identification prior to conversion with a ban on converting areas that contain HCVs.
Criteria on regeneration of tree cover after logging (2069)	Refers to requirements relating to remedy issues such as reforestation, regeneration and restocking of existing forests and woodlands after logging or when these have been depleted, but also includes beating up operations, natural regeneration and planting, ripping up of roads, log landings and hauling roads.
Criteria on High Carbon Stock areas monitoring and management (700397)	Refers to the monitoring and management of areas which have the capacity to accumulate or release high quantities of carbon (e.g., forests).
Criteria on legal compliance: Harvest rights (740200)	Refers to systems in place to ensure that the timber is of legal origin. Adopted from the EU Timber Regulation No. 995/2010, Art. 2 (h). Legal timber is defined based on the law of the country of harvest and defines a legal product as having been produced in accordance with all applicable legislation, including the rights to harvest timber in legally gazetted boundaries.

SDG 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss
SDG target 15.5	"Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species."
Criteria on protection of rare, endangered, or threatened species and their habitats (700369)	Refers to habitat loss (forests, swamps, lakes, and other habitats) derived from activities or operations for human consumption that pose the greatest threat to species. Refers to any requirement to protect rare, threatened, or endangered species within the unit of operations. The knowledge on rare and threatened species can be drawn from local or external expertise and the International Union for Conservation of Nature and Natural Resources Red List of threatened species at http://www.iucnredlist.org.
Criteria to ensure adherence to international and national conventions on biodiversity and best practices (CITES, CBD, CMS, CCD, among others) (700368)	Refers to systems in place to ensure adherence to international and national conventions on biodiversity and best practices. Relevant international conventions include but may not be limited to: Convention on the International Trade in Endangered Species of Wild Flora and Fauna (CITES), Convention on Biological Diversity (CBD), Convention on the Conservation of Migratory Species of Wild Animals (CMS), Ramsar Convention on Wetlands of International Importance (Ramsar), Convention to Combat Desertification (CCD), and corresponding regional conventions for the Protection of the Marine Environment.
Criteria on legally protected and internationally recognized areas for their biodiversity (30022)	Refers to procedures in place to maintain legally and internationally recognized protected areas for the long-term conservation of nature. A protected area is a clearly defined geographical space that is recognized, dedicated, and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.
Criteria on spatial management criteria (creating/maintaining/protecting set-asides, buffer zones, or conservation areas) (4091)	Refers to requirements such as the creation of designated conservation areas, set aside areas (e.g., riparian lands), buffer zones, or designated wildlife corridors—zonal areas that serve the purpose of keeping two or more other areas distant from one another in order to protect the environment, wildlife, and ecosystem.
Criteria on assessment of risks and impacts on biodiversity in (as well as outside) management or production unit (300457)	Refers to the mitigation hierarchy (begin with avoiding unacceptable impacts, minimizing the impacts that do occur, restoring areas that are impacted, and offsetting the residual net loss of biodiversity—and implementing additional voluntary projects in some cases). The written plan must include land rehabilitation, but it clearly needs go beyond this aspect.

SDG 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss
Criteria on biodiversity hotspots (1000005)	Refers to procedures in place to maintain biodiversity hotspots. To qualify as a biodiversity hotspot, a region must have at least 1,500 vascular plants as endemics and 30% or less of its original natural vegetation.
Criteria on habitat/eco-system restoration/ rehabilitation (2124)	Refers to process-based ecosystem recovery that leads to the regeneration and maintenance of natural ecosystem processes. These processes can generate resilient ecosystem structures (e.g., habitats) and linkages (flows and connectivity of sediment, water, nutrients, and biota) and restore ecosystem functions.
Criteria for the monitoring and protection of High Conservation Value areas (4090)	Refers to procedures in place to address land-use planning and the identification of conservation priorities: areas that are designated on the basis of HCVs, which are biological, ecological, social, or cultural values considered outstandingly significant at the national, regional, or global level.

Appendix B. Selected Voluntary Sustainability Standards

The selection of voluntary sustainability standards (VSSs) was based on their presence in international markets as well as their influence at the national/regional level. The national/regional VSS context was important to consider as VSSs have emerged in response to the need to address sustainability issues locally and to address barriers to trade that international standards sometimes impose. We included the analysis of both international and national/regional VSSs to better understand the capacity of standards at the national/regional level compared with those operating internationally to contribute to the achievement of the Sustainable Development Goals. Another condition for selecting the VSSs was their propensity for reaching poorer producers, given the 2030 Agenda for Sustainable Development's focus on leaving no one behind.

Table B1. Selected VSSs alongside their geographical scope and degree of inclusivity (e.g., the number/type of markets, size of producer, number of commodities, etc.)

Standard	Geographical scope	Degree of inclusivity
4C Code of Conduct Version 4.0 V Valid from July 1, 2020	Global coffee standard	4C Unit is a green coffee-producing group that includes any type of production and process facility and produces a minimum of 20 tonnes of 4C-certified green coffee every year.
African Organisation for Standardisation–ARSO Agriculture Standard ARS/AES 01(E) First Edition 2014	Regional agricultural standard	One of the fundamental mandates of ARSO is establishing a conformity assessment system to promote the quality of African goods and services as a means of facilitating intra-African trade as well as accessing global markets.

Standard	Geographical scope	Degree of inclusivity
The International Water Stewardship (AWS) Standard v 2.0 March 22, 2019	Global framework for major water users	The AWS Standard works toward the use of water that is socially and culturally equitable, environmentally sustainable, and economically beneficial, achieved through a stakeholder-inclusive process that involves site- and catchment-based actions.
Better Cotton Initiative v 2.1 | March 1, 2018	Global cotton production standard	Better Cotton distinguishes among three categories of farmers—smallholders, medium-sized farms, and large farms—in recognition of the differences in production methods and workforces they use.
Cotton made in Africa Volume 4 | December 2020	Regional cotton standard	The Aid by Trade Foundation, through the Cotton made in Africa standard, aims to level the playing field for disadvantaged producers by supporting the production and trade of sustainably farmed cotton in Africa.
Fairtrade International – Small Producers Organizations April 3, 2019_v2.5	Global agriculture standard	Members of small-scale producer organizations must be primarily smallholders who do not depend on hired workers all the time and run their farms mainly by using their own and their family's labour.
Forest Stewardship Council Principles and Criteria for Forest Stewardship Standard, V(5-2)	Global forest management standard	The Forest Stewardship Council has revised its group standard and developed several initiatives in different regions to better understand the needs of smallholders locally.

Standard	Geographical scope	Degree of inclusivity
International Sustainability and Carbon Certification (ISCC)-EU202-2 Agricultural Biomass: ISCC Principles 2-6; ISCC EU 202-1 Agricultural Biomass: ISCC Principle 1 Version 1.0 Valid from: July 1, 2022	Global feedstock standard (agricultural and forestry biomass, circular, and bio-based materials and renewables)	ISCC has developed the Independent Smallholders Certification process, which can provide an option for smallholders to increase productivity and thus increase income and raise the attention of potential customers. The concept is applicable to smallholders all over the world producing agricultural raw materials.
International Federation of Organic Agriculture Movements Version 2.0 © IFOAM – Organics International, October 2019 (Edited version of the IFOAM Norms 2014)	Global umbrella organization for organic agriculture	IFOAM – Organics International promotes organic certification of smallholder groups in developing countries and encourages the further development of innovative alternatives such as participatory guarantee systems (locally based systems of quality assurance).
National Programme for Organic Production–India Seventh Edition: November 2014 Appendix 1: Organic Crop Production	National organic standard	Aimed at, among others, encouraging the development of organic farming and processing in India and facilitating trade of certified products.
Rainforest Alliance Sustainable Agriculture Standard Farm Requirements v 1.1	Global agriculture standard	The Rainforest Alliance agriculture standard is used in more than 70 countries around the world. The standard focuses on coffee, cocoa, tea, bananas, and many other important commodity sectors facing urgent environmental and social challenges.

Standard	Geographical scope	Degree of inclusivity
Sustainable Rice Platform Standard for Sustainable Rice Cultivation Version 2.1 January 2020	Global rice standard	The Sustainable Rice Platform aims to transform the global rice sector by, among others, improving smallholder livelihoods.
East Africa Organic Production Standard EAS 456:2007 ICS 67.020	Regional organic standard	Organic agriculture production standard created for East African conditions aimed at increasing the production of organic agriculture goods in the East African Community and trade in those products in regional and global markets.

Appendix C. Voluntary Sustainability Standard Resources to Support Government Voluntary National Review Reporting

To facilitate national reporting on voluntary sustainability standards' (VSSs') contributions to Sustainable Development Goal (SDG) implementation, governments could consult VSS-related resources and/or reach out to VSS offices in the country, VSS-certified bodies listed as contacts/partners, or VSS international offices when no in-country representation is available. Governments could also ask stakeholders to provide specific inputs on how VSSs help achieve the SDGs on the ground as part of the Voluntary National Review preparation process and/or through a permanent stakeholder engagement mechanism for the SDGs.

VSS-related resources: Four categories of VSS resources are suggested that governments could use in their Voluntary National Review reporting on SDG progress:

1. Direct resources that VSS bodies produce, mainly found on VSSs' websites, including:

    a. Impact reports

    b. Country case studies published as news stories

    c. Other types of data produced by VSSs, e.g., *Data Sheet for Child Labor and Forced Labor Risk Maps* by Rainforest Alliance (Rainforest Alliance, 2021a)

2. Resources produced by institutions that study VSSs, including:

    a. VSSs' location and production information found in the International Trade Centre (ITC) Standards Map, by country (ITC, n.d.)

    b. International Institute of Sustainable Development (IISD) Sustainable Commodities Marketplace Series, global (IISD, n.d.-b).

3. VSS content criteria, found in:

    a. ITC Standards Map

    b. IISD State of Sustainability Initiative reviews that provide analyses of criteria against specific themes (IISD, n.d.-a)

    c. Other benchmarking initiatives, such as Global Reporting Initiative's SDG Compass

4. Impact studies of VSSs, including:

    a. Evidensia platform (ISEAL, 2019)

    b. United Nations Forum on Sustainability Standards flagship reports (UNFSS, 2022)

    c. Others, including United Nations Conference on Trade and Development (n.d.) resources and studies on VSS performance from academic studies and articles. Academic literature could be searched on Google Scholar using keywords such as "VSS," "impact," and "sustainability."

General VSS contacts – global:

ALLIANCE FOR WATER STEWARDSHIP

Address: Alliance for Water Stewardship, 2 Quality Street, North Berwick EH39 4HW, Scotland, United Kingdom

Email: info@a4ws.org

Website: https://a4ws.org/

BETTER COTTON: LONDON OFFICE

Address: Better Cotton, Unit 4, 27 Corsham Street, Hoxton, London N1 6DR, United Kingdom

Email: helpdesk@bettercotton.org

Website: https://bettercotton.org/

Phone: +91 6366528916

COTTON MADE IN AFRICA

Address: Aid by Trade Foundation, Gurlittstraße 14, 20099 Hamburg, Germany

Email: info@abt-foundation.org

Website: https://cottonmadeinafrica.org/en/about-us/

Phone: +49 4025767550

BETTER COTTON: GENEVA OFFICE

Address: Better Cotton, Ch. de Balexert 7-9, 1219 Châtelaine, Switzerland

Website: https://bettercotton.org/

Phone: +41 229391250

BONSUCRO

Address: Bonsucro, Unit KP.CC3.01, Kennington Park Business Center, 1-3 Brixton Road, London SW96DE, United Kingdom

Website: https://bonsucro.com/

Phone: +44 2037358515

FAIRTRADE INTERNATIONAL

Address: Fairtrade International, Bonner Talweg 177, 53129 Bonn, Germany

Email: https://www.fairtrade.net/contact

Website: https://www.fairtrade.net/about

Phone: +49 228949230

FOREST STEWARDSHIP COUNCIL

Address: FSC International, Adenauerallee 134, 53113 Bonn, Germany

Email: info@fsc.org

Website: https://fsc.org/en

Phone: +49 228367660

GLOBAL COFFEE PLATFORM

Address: Global Coffee Platform, Rue Mina-Audemars 3, 1204 Genève, Switzerland

Email: info@globalcoffeeplatform.org

Website: https://www.globalcoffeeplatform.org/

RAINFOREST ALLIANCE

Email: info@ra.org

Website: https://www.rainforest-alliance.org/

GLOBALG.A.P.

Address: GLOBALG.A.P., c/o FoodPLUS GmbH, Spichernstr. 55, 50672 Cologne, Germany

Email: info@globalgap.org

Website: https://www.globalgap.org/uk_en/

Phone: +49 221577760

IFOAM – ORGANICS INTERNATIONAL

Address: IFOAM – Organics International, Charles de Gaulle Strasse 5, 53113 Bonn, Germany

Email: contact@ifoam.bio

Website: https://www.ifoam.bio/

Phone: +49 2289265010

4C

Address: 4C Services GmbH, Hohenzollernring 72, 50672 Köln, Germany

Email: info@4C-services.org

Website: https://www.4c-services.org/

Phone: +49 22150802050

Country VSS contacts – India:

RAINFOREST ALLIANCE

Partner: Bangalore office

Address: Rainforest Alliance, 3rd Main Road 3rd Cross, Bangalore, India

Website: https://www.rainforest-alliance.org/

GLOBALG.A.P.

Partner: Ecocert India Pvt. Ltd. (certification body)

Address: WeWork, 10th floor, RMZ Latitude Commercial Building, Bellary Rd, Hebbal, Bengaluru, 560024 Bangalore, Karnataka, India

Email: office.india@ecocert.com

Website: https://www.globalgap.org/uk_en/

Phone: +91 7065505625

GLOBALG.A.P.

Partner: EUROCERT INDIA (certification body)

Address: H. No. 298, Sector-4, Panchkula Haryana, 134112 Panchkula Horyana, India

Email: eurocert.mv@gmail.com

Website: https://www.globalgap.org/uk_en/

Phone: +91 09316012883

Lead contact: Manish Vig

GLOBALG.A.P.

Partner: CU Inspections & Certifications India Pvt. Ltd. (certification body)

Address: 22nd & 23rd Floor, B Wing, Arihant Aura, Plot No. 13/1, TTC, Opp. Turbhe Railway Station, Thane Belapur Road, 400705 Navi Mumbai, India

Email: cuindia@controlunion.com

Website: www.controlunion.com

Phone: +91 2261294200/201-299

Lead contact: Binay Kumar Choudhury

GOODWEAVE

Address: 122B, First Floor, IT Tower-1, Wegmans Business Park, Knowledge Park-III, Greater Noida 201308, India

Email: communications@goodweaveindia.net

Website: https://goodweaveindia.net/

Phone: +91 1202977000

Mobile: +91 9870294097

BONSUCRO

Email: ritu@bonsucro.com

Website: https://bonsucro.com/

Lead contact: Ritu Baruah, Regional Coordinator, India

GLOBALG.A.P.

Partner: DNV GL India (certification body)

Address: Plot No. B42/168 Sunder Nagar, Kalina Santacruz (East), 400098 Mumbai, India

Email: mumbai@dnvgl.com

Website: https://www.globalgap.org/uk_en/

Phone: +91 2226669800

FAIRTRADE INTERNATIONAL

Partner: Fairtrade Network of Asia & Pacific Producers

Address: Unit 15-01, Valley Point, 491B River Valley Road, Singapore 248373

Email: comms@fairtradenapp.org

Website: https://www.fairtradenapp.org/

GOODWEAVE

Address: S 14/81 A-5, 2nd Floor, Uday Complax, Maldahiya, Varanasi, Uttar-Pradesh 221002, India

Email: communications@goodweaveindia.net

Website: https://goodweaveindia.net/

Phone: +91 5422201172

Mobile: +91 9870294097

ALLIANCE FOR WATER STEWARDSHIP

Website: https://a4ws.org/

Lead contact: Ashish Bhardwaj, local coordinator

TRUSTEA

Address: trustea Secretariat, 5th Floor, 6, Dr. Meghnad Saha Sarani, Tollygunge, Kolkata 700026, West Bengal, India

Email: support@trustea.org

Website: https://trustea.org/

Phone: +91 3340732658

FOREST STEWARDSHIP COUNCIL

Partner: FSC India

Address: Registered Office: Knowledge House, Shyam Nagar, Off Jogeshwari Vikhroli Link Rd, Jogeshwari East, Mumbai 400060, India; Corporate Office: 7th Floor, 349 Business Point, Western Express Highway, Andheri East, Mumbai 400069, India

Email: care@futuresupplychains.com

Website: https://www.futuresupplychains.com/

Phone: +91 2240552200

Lead contact: Vimal Dhruve, Company Secretary and Compliance Officer

Country VSS contacts – Tanzania:

ALLIANCE FOR WATER STEWARDSHIP

Partner: Olam International (AWS certified)

Address: Olam Tanzania Limited Plot 420, UN Road Upanga, PO Box 71062, Dar es Salaam

Email: Tanzania@olamnet.com

Phone: +255 222153180

COTTON MADE IN AFRICA

Partner: Alliance Ginneries Ltd. (CmiA certified)

Address: Plot No.1 and 2, Kasoli Village Bariadi District, Simiyu Region, 11074 Mwanza, Tanzania

Email: info@allianceginneries.com

Website: https://www.allianceginneriesltd.com/

Phone: +255 767461986

FAIRTRADE INTERNATIONAL

Partner: Fairtrade Africa

Email: info@fairtradeafrica.net

Website: https://fairtradeafrica.net/about-fairtrade/

Phone: +254 0202721930

Lead contact: Fairtrade Eastern and Central African Network Head of Region (Ag) Agapeters Kubasu:
a.kubasu@fairtradeafrica.net
+254 704180169 (office)
+254 717583705 (cell)

FAIRTRADE INTERNATIONAL

Partner: Kaderes Peasants Development Public Limited Company (KPD PLC)

Address: Karagwe Relief and Development Services P.O. Box 84 Karagwe Kagera Region Tanzania, East Africa

Email: info@kpdcoffee.com

FOREST STEWARDSHIP COUNCIL

Partner: FSC Africa

Address: Subregional Office Eastern Africa
Kampala, Uganda

Email: fscafrica@fsc.org

Website: https://africa.fsc.org/en-cd

Lead contact: Annah Agasha:
a.agasha@fsc.org

GLOBALG.A.P.

Partner: GREENCERT Ltd. (certification body)

Address: Plot 6, Uzunguni Area, Sekou Toure
Road. 6, P.O. Box 2592 Arusha, Tanzania

Website: http://www.greencert.co.tz

Phone: +255 754881336

Fax: +255 272544570

Lead contact: Eric Mwesigwa: eric.
mwesigwa@greencert.co.tz

GLOBAL COFFEE PLATFORM

Partner: Tanzania Coffee Platform

Lead contact: Kajiru Kisenge, Operations
Manager, Tanzania Coffee Board: director.
operation@coffeeboard.or.tz

RAINFOREST ALLIANCE: NAIROBI OFFICE

Address: Rainforest Alliance, Kilimani
Business Centre, Kirichwa Road, 1st Floor
Room 10, P.O. Box 51470-00100, Nairobi,
Kenya

Website: https://www.rainforest-alliance.org/
contact/

Country VSS contacts – Uganda:

4C

Partner: AfriCert Ltd. (Certification body)

Address: Plaza 2000 1st Floor, East Wing,
Mombasa Road, P.O. Box 74696, 00200,
Nairobi, Kenya

Email: jmaundu@africertlimited.co.ke

Website: https://www.4c-services.org/

Phone: +254 715041339

Lead contact: Janet Maundu

FAIRTRADE INTERNATIONAL

Partner: Fairtrade Africa

Email: info@fairtradeafrica.net

Website: https://fairtradeafrica.net/about-
fairtrade/

Phone: +254 0202721930

Lead contact: Fairtrade Eastern and Central
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