

GLOBAL MARKET REPORT

Tea prices and sustainability

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Market Overview

Global tea production continues to grow, though the gap in demand narrowed as the COVID-19 pandemic fuelled consumption.

After water, tea is the most consumed beverage in the world (Food and Agriculture Organization of the United Nations [FAO], 2022b). Drinking tea is a daily ritual for half of the world's population. From its origins in China, tea has spread across trade routes over centuries, becoming a key global cash crop and providing livelihoods for millions of smallholder farmers (FAO, 2022a). Tea is a stimulant that also provides many health benefits (Storozhuk, 2022) and is cultivated in more than 60 countries, primarily in Asia, Africa, South America, and parts of Eastern Europe. China produces 47% of the world's tea, followed by India, Kenya, and Sri Lanka (FAO, 2022a).

All tea varieties come from the *Camelia sinensis* plant, which produces five different types of tea—black, green, white, oolong,

and dark teas—depending on the degree of oxidation. Traditional cultivation and harvesting are labour intensive, and if tea shoots are not plucked at the right moment, they lose quality and value (FAO, 2021a). Harvested green tea shoots are processed by withering, rolling, or cutting-tearing-curling (CTC), oxidizing, and drying before being sorted into different grades. The tea is then packed and sent to auction houses for sale or sold directly to buyers on private contracts. Tea is classified by type and by process (orthodox/rolled tea and CTC tea). Origin and terroir play a key part in identity and quality, and teas are also named by provenance (e.g., Assam, Ceylon, Darjeeling, East of Rift Kenya, Java, etc.) (Dufrêne, 2020). A number of tea cultivation areas in China, Korea, and Japan are protected as FAO-designated Globally Important Agricultural Heritage Systems (FAO, 2022a).

Global tea production has surpassed USD 17 billion annually, with tea trade valued at USD 9.5 billion, representing a significant source of export earnings for low-income and emerging economies (FAO, 2022a). Research estimates that global tea production will grow at a compound annual growth rate (CAGR) of 5.7% from 2021

LIVELIHOODS

Nine million out of the 13 million people employed in the global tea sector are smallholder farmers in developing countries; they produce 60% of the world's tea in 2022.

to 2026 (Caro, 2020; Mordor Intelligence, 2023b) to meet demand, as consumption has risen by 2.5% per capita over the past decade, primarily in East Asia, Africa, Latin America and the Caribbean, and the Near East, offsetting declining consumption in Europe, the United States, Canada, and the Russian Federation (Caro, 2020; FAO, 2022a). The COVID-19 pandemic increased global demand, as tea is viewed as a beverage with immune system-boosting benefits (Fortune Business Insights, 2022). Demand is projected to remain robust due to rising incomes in developing countries and market diversification into organic and specialty teas, thereby contributing to rural incomes and food security in tea-producing countries (FAO, 2022a). However, production of plain-quality tea is growing at a higher rate than its demand, with a surplus of product and subsequent low prices for bulk commodity tea. Specialty tea production provides higher returns to farmers; volumes produced outside China and Japan remain small but are increasing as farmers elsewhere become aware of this opportunity.

The FAO estimates that 9 million of the 13 million people employed in the global tea sector are smallholder farmers in developing countries who produced 60% of the world's tea in 2022 (Bolton, 2022). Smallholders produce 80% of tea grown in China and Vietnam, and more than 50% of that grown in India, Indonesia, Kenya, and Sri Lanka—and the proportion of smallholder-grown

tea is rising globally (Bolton, 2022). Some 80 million Chinese citizens are employed in the tea sector, including 15 million smallholders (Ethical Tea Partnership, 2019). India's tea sector provides livelihoods for 1.2 million smallholders, of whom up to 50% are women (Caro, 2020; Nagaraj, 2020). The Kenyan tea sector represents 26% of the country's annual export earnings and provides direct and indirect employment for 2 million people, including 650,000 smallholders (Kenya Presidency News, 2022). Sri Lankan tea accounts for 12% of annual export earnings and employs 450,000 smallholders (Madsen, 2021). While traditional manual tea harvesting remains the norm in many tea-growing countries, mechanization threatens employment, as it can reduce production costs by about 40% (FAO, 2022a). For example, thousands of tea pickers recently lost their jobs to tea-harvesting machines in Kenya's Rift Valley tea belt (Wanjala, 2021).

According to the FAO, tea production grew from around 4.3 million tonnes (Mt) in 2008 to 6.3 Mt in 2020 from cultivating 5 million hectares (FAO, 2022a; FAOSTAT, 2021). Tea production has remained more or less steady over the last decade: its CAGR of 3.32% from 2008 to 2020 dropped slightly to 2.31% from 2014 to 2020. A large portion of tea produced is exported, providing an important source of foreign exchange revenue for exporting countries (Foreign Agricultural Service, 2021). Since 2016, Kenya, China, and India have consistently been the largest producing countries and exporters, exporting approximately 557 Mt, 369 Mt, and 282 Mt, respectively, in 2021, while the European Union, the United States, and Japan have consistently been the biggest importers, importing around 225 Mt, 115 Mt, and 108 Mt in 2021, respectively (United Nations, 2022). Over the past two decades, global

tea supply has been slightly higher than demand. Nevertheless, demand started to catch up with supply, as it received a major boost due to its health benefits during the COVID-19 pandemic while production was hampered (FAO, 2022a). Maintaining the balance between supply and demand is key to the sustainability of the industry and to the safeguarding of pricing and farmers' incomes.

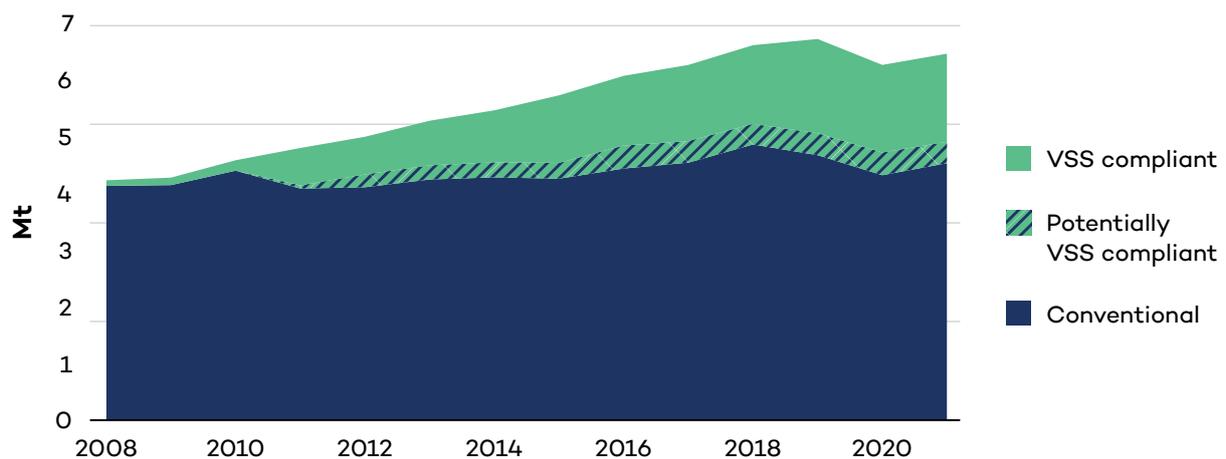
The pandemic affected the tea sector in unprecedented and significant ways. Low-income developing countries that were reliant on the tea sector for employment and export revenue were dramatically impacted by fertilizer shortages and increased prices, worker availability, shipping bottlenecks, and higher production costs (FAO, 2022b; Harris, 2020). The

pandemic affected Kenya, the world's largest tea exporter, by disrupting labour availability and transportation, as well as by increasing fertilizer prices by 70% between 2021 and 2022, resulting in a commensurate drop in crop production (Fraats & Huijssoon, n.d.; Husain, 2022). India, the world's second-largest tea producer, shut down many tea-processing and transportation facilities for several weeks in 2020, leading to up to a 20% drop in exports (Harris, 2020).

The pandemic exposed vulnerabilities within labour-intensive global agricultural supply chains, particularly in low-income countries. For example, Sri Lankan tea declined considerably in 2020 due to restrictions on the movement of workers, transport disruptions, and fertilizer

Global tea production from 2008 to 2021

Figure 1. Tea that complies with voluntary sustainability standards (VSSs) reached 24.8% of total production in 2019 but dropped slightly to 24% in 2021



Sources: Eckstein et al., 2021; FAO, 2022a; FAOSTAT, 2021; Kemper et al., 2023; Meier et al., 2021; Voora et al., 2019.

Note: VSS-compliant production volumes refer to tea produced in compliance with one or more VSSs. Conventional production volumes do not comply with any existing VSSs. Production volumes that are defined as potentially VSS compliant cannot be definitively listed in either category with the data currently available.

unavailability (Schmidhuber et al., 2020). The pandemic accelerated the shift in tea harvesting toward mechanization—labour costs for hand plucking soared, pushing producers to mechanize their operations or face bankruptcy. Around 70% of global tea bushes are now harvested by machines or via some form of mechanical aid (i.e., hand shears or a sickle), up from 5% in 1980 (Melican, 2021).

On the other hand, the pandemic created a peak in tea consumption, as the beverage was positioned as an affordable, accessible wellness product with many health benefits. Global demand for tea expanded, particularly driven by in-home consumption—even in the European market, where the trend had been declining (Caro, 2020). Consumption of bubble tea and herbal teas became popular among young people during the pandemic (Fortune Business Insights, 2023). Further harnessing and expanding this growth will play a major part in the sector's development.

Climate change continues to threaten the viability of the tea sector.

The tea sector faces the formidable challenge of producing an affordable, high-quality, and more sustainable product in a highly competitive market and under increasingly harsh and unpredictable weather conditions. Changing climate patterns are interfering with all phases of tea cultivation, such as plucking, pruning, and applying chemical inputs (Baruah & Handique, 2021; Goswami, 2021). Tea is grown in diverse agroecological areas around the world that are vulnerable to climate change. Optimal tea-growing areas

are expected to shrink. For example, yields are projected to decrease by 5% in China, 14% in Sri Lanka, and 25% in Kenya by 2050 (Ethical Tea Partnership, 2021; Jayasinghe & Kumar, 2020; Kramer & Ware, 2021). Erratic rainfall and droughts have reduced yields, impacting the timing and number of harvested “flushes” per growing season (Ethical Tea Partnership, 2021; Subedi, 2020). For example, Kenyan tea smallholders have faced successive waves of drought and frost, which has lowered productivity (Elbehri et al., 2015; Kotikot et al., 2020; Muoki et al., 2020; World Bank Group, 2022).

Climate change is increasing the incidence of fungal pathogens and diseases, necessitating the increased use of fungicides and microbial biocontrol agents (Ahmed et al., 2014; Pandey et al., 2021). For example, the rising incidence of leaf curl and black tip pests in Nepal combined with severe rains and labour shortages due to the COVID-19 pandemic lowered tea quality and slashed yields by 30% to 40% in 2020 compared to 2019 (Subedi, 2020). The pandemic also accelerated the need for climate adaptation, raising concerns about the long-term viability of the tea sector (Elbehri et al., 2015).

Efforts are underway to improve the climate resilience of the tea sector, focusing on developing drought- and pest-resistant tea varieties, adapting to erratic precipitation, implementing more diverse production operations, and meeting demand for sustainably sourced products (Baruah & Handique, 2021; Deka & Goswami, 2022; FAO, 2022a). Scientists around the world are developing climate-resilient tea strains. In Sri Lanka, nuclear techniques are being used to enhance yields by increasing genetic diversity (Madsen, 2021). Tea is highly vulnerable to changes in precipitation.

This is why adaptation measures include maintaining soil moisture via afforestation, biodiversity conservation, and mulching (Baruah & Handique, 2021). In Assam, India, rainwater harvesting, sustainable irrigation, and mulching have become common (Goswami, 2021; Nowogrodzki, 2019). Faced with Typhoon Amphan in 2018 and flooding from the strongest monsoon season in a decade, Assamese tea growers have adapted by constructing anti-erosion riverbanks (Goswami, 2021).

Tea can be grown in agroforestry systems, where it is planted with trees and shrubs to provide shade, soil moisture, and fertility while also protecting the soil from frost and erosion (Nowogrodzki, 2019). Chinese tea producers have introduced nitrogen-fixing plants in plantations to increase soil fertility and tea quality (Huang et al., 2022). Indian, Kenyan, Sri Lankan, and Tanzanian tea producers are intercropping tea with pepper, coffee, cloves, fruit trees, and pulses to reduce climate change risks, improve soil fertility, and boost income (Baruah & Handique, 2021; Fuerer et al., 2021; Rwigema, 2021; Sewwandi, 2019). Indian tea estates often intercrop tea with horticulture, floriculture, and medicinal plants. Oil palms introduced in Assam and West Bengali tea estates in India have great climate-resilience potential while diversifying income for farmers (Roozen, 2022).

The tea sector has the potential to mitigate climate change in several ways, including by switching to renewable energy sources, intercropping, restoring forests, and enhancing fertilizer use. Tea factories consume energy for processing tea primarily in the drying stage of processing. This energy requirement has led to the deforestation of areas within and surrounding tea plantations, as most

factories use firewood. Consequently, switching tea-processing facilities to more efficient and renewable energy systems is an important opportunity to lower greenhouse gas emissions. China's tea industry has the potential to reduce greenhouse gas emissions by 58% by switching from coal to biomass in tea factories (Liang et al., 2021). Deforestation to give way to tea cultivation and provide energy in tea-processing facilities needs to be reversed. Restoring forests on tea plantations offers the possibility of mitigating climate change via carbon sequestration while improving resilience to climate change by providing shade and soil moisture retention. The tea sector must lower its carbon footprint if it is to remain viable over the long term (Ethical Tea Partnership, 2021).

Producing VSS-compliant tea can help build resilience.

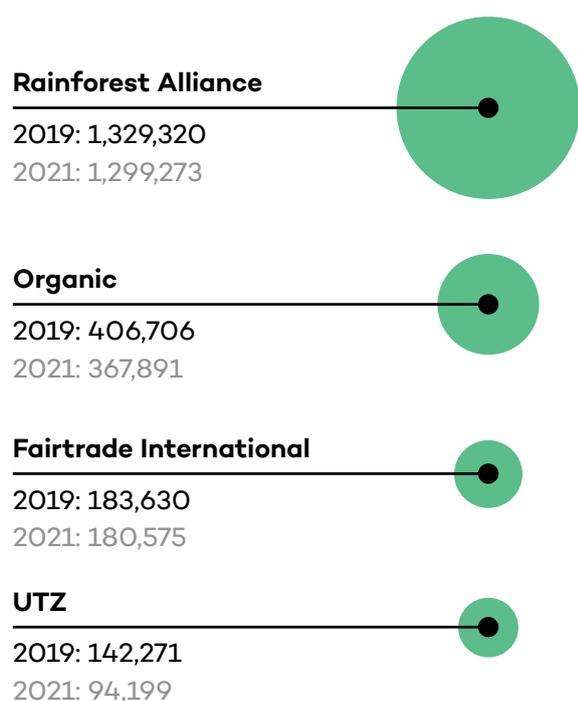
Efforts to move the tea sector toward sustainability and resilience in facing challenges such as climate change are ongoing. The implementation of VSSs, which started in tea 30 years ago, is one of these efforts. VSSs operating in the tea sector—such as Rainforest Alliance, Organic, and Fairtrade—support practices that can help build climate resilience on tea plantations. These practices include water reuse, recycling, and harvesting, which can help the plants cope with periods of drought, maintain soil fertility to improve yields and quality, and promote the use of renewable energy sources (Voora et al., 2022). Implementing VSSs allows farmers to differentiate themselves from conventional tea in the marketplace and potentially capture market demand. The FAO Intergovernmental Group on Tea

(2022) notes the trend of growing demand in more mature markets for sustainably sourced products. In exchange for adopting more sustainable farming practices, farmers can label their products as VSS compliant or produced in accordance with a VSS.

According to our analysis in 2019, more than 1 million farmers produced between 1.67 Mt and 2.06 Mt of VSS-compliant tea with a farm gate value exceeding USD 155 million, an increase of 0.3 Mt over the previous year (FAO, 2022a; FAOSTAT, 2021; Meier, et al., 2021). The most prominent VSSs in the tea sector, ordered by 2019 production volumes, include Rainforest Alliance (1.33 Mt), Organic (0.41 Mt), Fairtrade (0.18 Mt), and UTZ (0.14 Mt)¹ (Meier et al., 2021). Growing at a CAGR of 29% to 31% between 2008

How much tea is compliant with a VSS?

Figure 2. VSS-compliant tea production volumes in 2019 and in 2021 (in tonnes)



Source: Kemper et al., 2023; Meier et al., 2021.

and 2019, VSS-compliant tea represented 25% to 31% of total global production in 2019. Despite this impressive growth, there are signs that the supply of VSS-compliant tea may be slowing as its CAGR dropped to between 12% and 13% from 2014 to 2019 (Meier et al., 2021). Almost all the loss in VSS-compliant production is attributed to a drop in Fairtrade tea, which declined from 0.25 Mt in 2016 to 0.183 Mt in 2019. The estimated production of VSS-compliant tea decreased across all the schemes in 2021 to a total of 1.56 Mt to 1.9 Mt, representing 24% to 30% of total tea production that year (FAO, 2022a; Kemper et al., 2023).

Another major challenge tea producers face is the large amount of VSS-compliant tea sold as conventional. For example, Fairtrade-certified smallholder tea producer organizations sold only 7% of their production on Fairtrade terms in 2020 (O'Brien, 2022). Tea farmers who cannot sell their product as VSS compliant may not receive premiums and struggle to pay certification costs (O'Brien, 2022). This can be very problematic, as some farmers need to comply with more than one scheme to meet buyers' demand, thus increasing their certification costs, which they do not recover if their produce is not sold as VSS compliant. Falling incomes and the higher production costs experienced in 2020 due to the pandemic-triggered supply chain disruptions have led to greater rates of poverty among smallholder tea farmers and limited investment in more sustainable and resilient production systems (IDH, n.d).

Our analysis finds that among tea-producing countries, China, India, Argentina, Turkiye, and Sri Lanka offer VSSs the greatest potential to expand based on the size of

¹ As of January 2020, Rainforest Alliance and UTZ have merged into a single organization and standard.

their conventional tea production. Among the least developed tea-producing countries, Mozambique, Ethiopia, the Democratic Republic of the Congo, Malawi, Mali, and Haiti offer VSSs the greatest opportunities for enabling sustainable development via the adoption of more sustainable tea-farming practices based on their share of global tea production, the limited presence of VSSs, and their Human Development Index (FAOSTAT, 2021; Meier et al., 2021). To make the most of this potential, tea producers will need help from supporting actors to transition to VSS-compliant practices, such as extension services, better market relations, and greater demand for more sustainable tea—in particular, in leading importing and consuming countries, such as Pakistan or China, to ensure the business case of VSS-compliant production that benefits farmers (Elder et al., 2021).

As importantly, VSS-compliant tea farming can also influence yields. According to our analysis, VSS-compliant tea yields were higher in 12 and lower in 19 tea-producing countries in 2019 (FAOSTAT, 2021; Meier et al., 2021). VSS-compliant yields tended to be higher in the larger tea-producing countries, such as China, Kenya, Indonesia, Vietnam, and Japan. India and Türkiye are exceptions, as VSS-compliant tea yields were lower than conventional tea yields in these major tea producers in 2019. Nevertheless, yield also depends on the kind of tea planted.

MARKET VALUE

More than 1 million farmers produced between 1.67 Mt and 2.06 Mt of VSS-compliant tea with a market value of USD 155 million in 2019.

CAGR

Conventional production grew at a CAGR of 1.13% from 2008 to 2019 and 1.77% between 2014 and 2019. VSS-compliant production grew at a CAGR of 29% to 31% between 2008 and 2019 but dropped to 12% to 13% from 2014 to 2019.

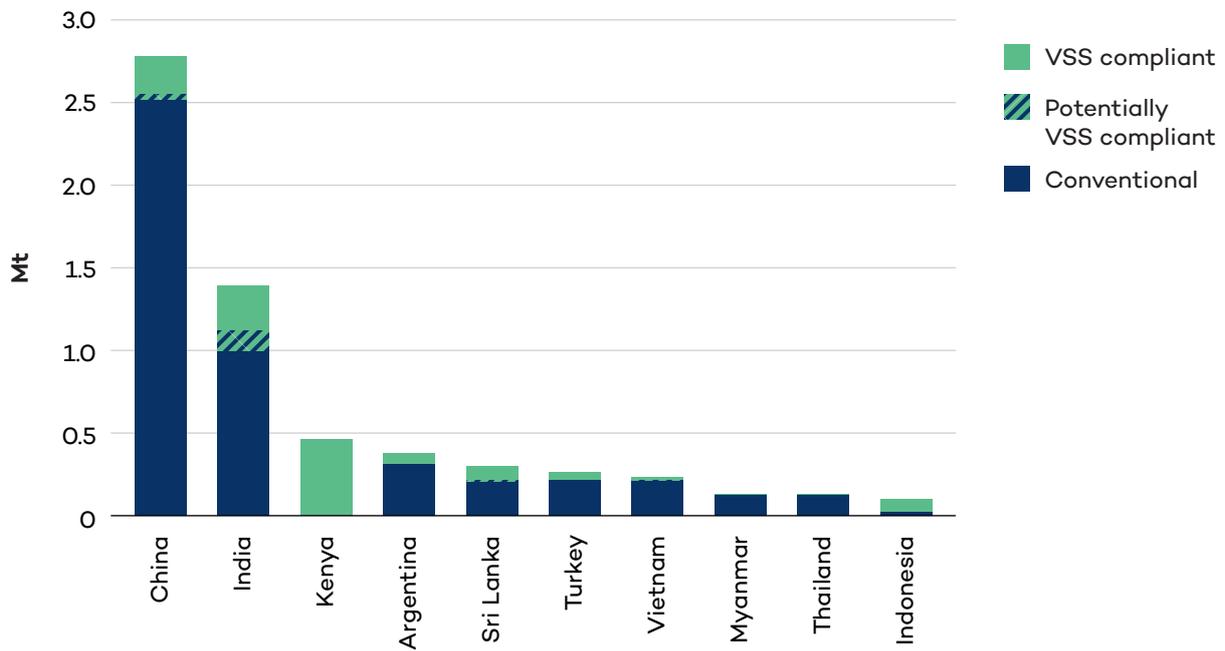
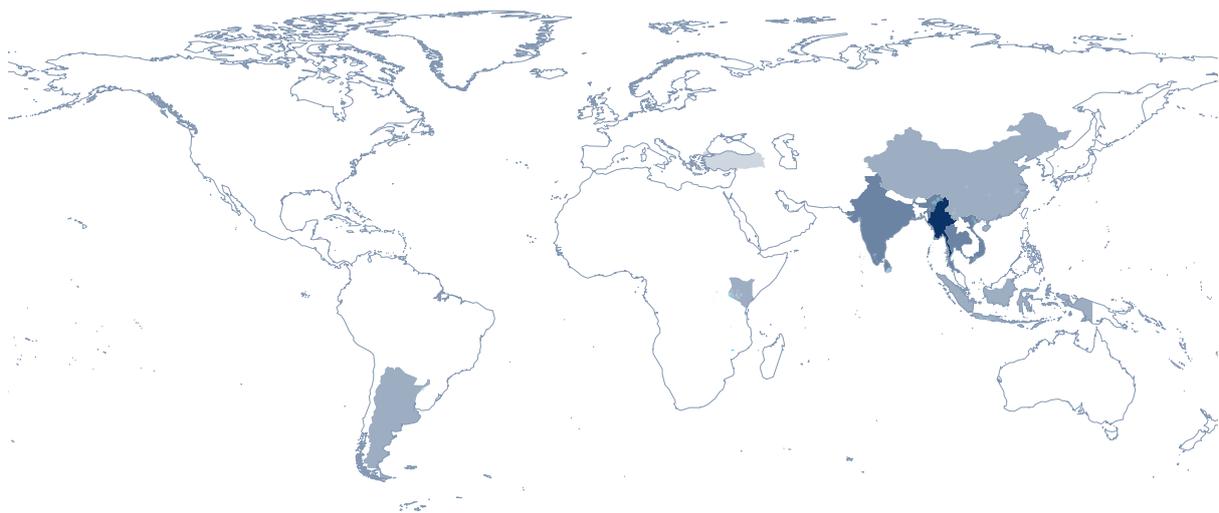
Demand for VSS-compliant tea climbed after the pandemic, including in producing countries.

Despite initial lockdowns, which slowed distribution, marketing, and logistics, demand for tea rose during the COVID-19 pandemic (FAO, 2022a, 2022b). The industry adjusted and returned to a stable state in 2021 (Storozhuk, 2022). As lockdowns and other restrictions were progressively lifted, demand for VSS-compliant tea increased, driven primarily by Europe (FAO, 2022a), where demand for organic tea grew significantly in 2020 and 2021, followed by the United States and Canada (Nakatsugawa, 2023). As an illustrative example, the Organic-certified tea market grew in Europe at a CAGR of 10.9% between 2016 and 2021, reaching a retail market value of USD 837.5 million in 2021 (Agriculture and Agri-Food Canada, 2022a). Going forward, the Organic tea market is expected to grow at a CAGR of 8.4% between 2021 and 2026 to reach almost 10% of the European market. Increased consumer preferences

Tea-growing regions of the world

Figure 3. Distribution of tea production in the top 10 producing countries in 2019

Climate Risk Index score for 2000–2019



Sources: FAO, 2022 ; Meier et al., 2021.

for healthier beverages and their greater awareness of social and environmental issues have driven this push. In the United States, about 13% of retail tea sales were certified Organic in 2021, growing at a CAGR of 5.8% from 2016 to 2021 and projected to grow at a CAGR of 6.6% from 2021 to 2026 (Agriculture and Agri-Food Canada, 2022b).

The challenges of pricing VSS-compliant tea products and their availability at different points of sale must be overcome to boost global demand for VSS-compliant tea—especially in producing countries, some of which tend to be the largest consumers of tea (e.g., China and India). Price premiums continue to be a barrier to growing the consumer base in price-sensitive markets. For instance, conventional teas are sometimes as much as 625% cheaper than more sustainable alternatives in Türkiye (Dufrêne, 2020). Furthermore, VSS-compliant tea is handled as a luxury good, which increases its price. Equally important is educating and raising awareness in local consumers about sustainability, the benefits to people and the planet of consuming VSS-compliant teas, and the various impacts consumers can have by choosing these options.

The availability of VSS-compliant tea to consumers is also an issue in some emerging economies. For instance, although almost 80% of Brazilians want more sustainable lifestyles and access to sustainably grown products, such as tea, only 13% of hot beverages, including ready-to-drink tea, are labelled as sustainable in Brazil, making it difficult for consumers to identify more sustainable options at the point of sale (Dufrêne, 2020).

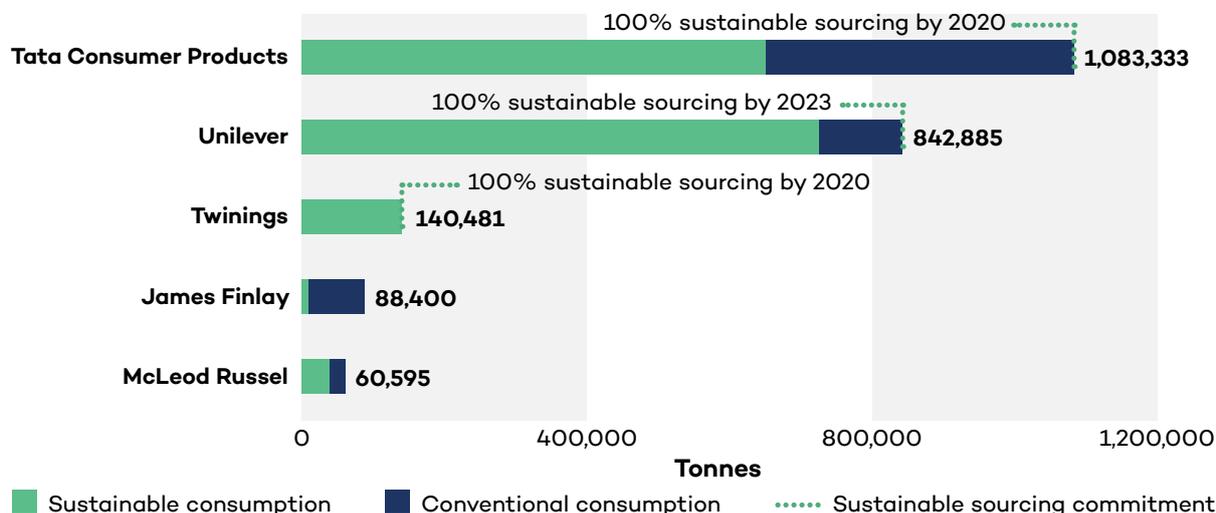
Strategies to expand VSS-compliant tea consumption will need to be tailored to the context. India is one of the largest tea-

producing countries in the world, and 80% of production is consumed domestically (Caro, 2020; Dufrêne, 2020). Much of this complies with Trustea, a domestic VSS launched in 2013 that certified 791,000 tonnes or 57% of total tea production in 2021 (Mordor Intelligence, 2023b). At the same time, public awareness of sustainability issues in the Indian tea sector has risen, with increased preferences toward purchasing sustainable options (Bhattacharyya et al., 2023). These developments have underpinned Indian consumption of more sustainable tea. As an example, 60% of the tea sourced by the local company Tata in 2019/2020 complied with the Trustea standard. Trustea-compliant tea is largely consumed locally (Tata Consumer Products, 2020a). Furthermore, according to Euromonitor, consumption of organic tea at retail also grew in India at a CAGR of 17.3% from 2016 to 2021 and is expected to continue growing at a similar rate over the next five years (Agriculture and Agri-Food Canada, 2022b).

China has the largest tea sector in the world, with a market valued at USD 10 billion (Bolton, 2022). Increasing VSS-compliant tea consumption in the country offers great potential as Chinese people consume 80% of the country's production, and 70% of consumers have expressed interest in buying more sustainable products (Ethical Tea Partnership, 2019; Nagaraj, 2020). Euromonitor reports that consumption of organic tea at retail in China grew at a 13% CAGR from 2016 to 2021, though it is expected to grow more slowly going forward (Agriculture and Agri-Food Canada, 2022b). In Kenya, the largest black tea exporter in the world, 5% of production is consumed domestically (Kenya Presidency News, 2022). Kenyan companies are introducing tea varieties to

Progress on sustainable sourcing commitments

Figure 4. Major tea companies, their sustainable sourcing commitments, and progress in 2020



Sources: Associated British Foods, 2020; Fairtrade Africa, 2020; FAOSTAT, 2023; Finlays, 2020a, 2020b; McLeod Russel, n.d.; Tata Consumer Products Limited, n.d., 2020a, 2020b; Tetley, n.d.; Twinings, n.d.; Unilever, n.d.

Notes:

James Finlay: Total consumption was obtained from Finlay’s reported volume of total traded tea. The share of sustainable consumption accounts only for the amount produced in Kenya with a Fairtrade certification. Volumes from other certifications were not found. James Finlay committed to “100% traceable, transparent supply to internationally accepted standards by 2022” (Finlays, 2020a, p.13). Their sustainability strategy, Sustainable Future 2030, includes “sustainable supply” but does not explicitly mention sustainable sourcing from a VSS (Finlays, 2020a).

McLeod Russel: Total and sustainable consumption volumes were obtained by adding the reported volumes of tea at each farm in India, Africa, and Vietnam. No information about sourcing targets was found.

Tata (formerly known as Tata Global Beverages): Total consumption refers to total volume of tea sourced. Sustainable consumption volumes were obtained from the reported Trustea-certified tea from India. However, Tata also reports that 100% of the tea sourced for their Tetley brand is 100% Rainforest Alliance certified (Tata Consumer Products Limited, 2020a). This was not included in Tata’s sustainable consumption volume since it is unknown if some of this volume has double certification (Trustea and Rainforest Alliance).

Twinnings: This figure was estimated by multiplying the company’s tea market share (2% of the global tea market as of 2010) by the global tea production in 2020, as reported by FAOSTAT (2023).

Unilever: This figure was estimated by multiplying the company’s tea market share (12% of the global tea market as of 2010) by the global tea production in 2020, as reported by FAOSTAT (2023).

appeal to Kenyan youth (Madsen, 2021), offering opportunities to boost domestic VSS-compliant tea consumption, as almost all the tea produced in the country complies with a VSS (Meier et al., 2021). All these developments are promising as they illustrate how consumption of VSS-compliant tea is evolving and increasing in the main producing countries.

Some of the largest tea manufacturers (Mordor Intelligence, 2023a) bought 2.2 Mt of tea in 2020, up from 1.22 Mt in 2017. From the total tea purchased in 2020, 1.6 Mt or 71% was sustainably sourced tea, compliant with a VSS, up from 0.9 Mt in 2017 (Voora et al., 2019).² As illustrated in Figure 4, two companies had sustainability sourcing commitments in place for 2020 and one for 2023. Of these two, only Twinings met its 100% sustainable sourcing target. While Tata Consumer Products (formerly known as Tata Global Beverages) sourced 100% of its Tetley brand tea from Rainforest Alliance-certified farms, 60% of its tea in India was Trustea-certified. In 2020, 86% of Unilever's tea was VSS compliant. It sets its 100% sustainability sourcing target for 2023. James Finlay has a commitment to trace its entire tea value chain by 2020 but does not have an explicit sustainable sourcing commitment; however, at least 11% of its sourcing was reported to be Fairtrade certified that year. While the volume certified by Rainforest Alliance was unknown, a recent audit indicated that the VSS-setting body had decided to suspend Finlay's certification after confirming the presence of multiple non-conformities to the social and management criteria of the Rainforest Alliance Sustainable Agriculture Standard (Fiolhais, 2023).

Based on the sourcing commitments of the largest tea manufacturers examined, and assessing them against current tea-sourcing information, an additional 0.18 Mt of sustainable tea could be sourced by 2023.

For the most part, production of VSS-compliant tea has increased steadily over the years. Although current global economic uncertainties may affect its consumption, demand should continue to rise. Taking a more pessimistic outlook weighs the long-term and slow but steady increase in VSS-compliant tea production more heavily, which should result in 2.24 Mt by 2025 due to a shift toward corporate sustainability initiatives and a continued inability to sell VSS-compliant product as such. A more optimistic outlook weighs the more rapidly increasing short-term VSS-compliant production trend more heavily and projects a steady increase to 2.43 Mt by 2025.

A number of potential futures exist between these outlooks, and although VSS-compliant production is likely to experience a short-term contraction, we predict that it will rebound to almost 2.33 Mt by 2025 as demand for sustainable tea continues to grow, motivating sustainable tea-sourcing commitments, and VSS-compliant tea farmers enjoy more success selling their harvest as VSS-compliant product. Consequently, we expect VSS-compliant tea production to range from 2.24 Mt to 2.43 Mt by 2025.

² In addition to sourcing VSS-compliant tea, some companies may have their own corporate sustainability initiatives in place. For instance, Twinings' Sourced with Care initiative aims to improve livelihoods in the communities from which it sources its tea.

A Dive Into Tea Prices

Oversupply, lower demand, and global supply chain disruptions have created price volatility in the tea market.

Pricing is important, as it can determine if tea producers stand to gain financially from complying with a VSS. Efforts to shift the sector toward sustainability—such as by abiding with VSSs—are partly driven by a need to internalize the external, tangible costs associated with the industry, which are not factored into the price paid by end consumers. For example, the external costs of conventional green leaf tea produced in Kenya in 2016 were found to be EUR 0.70/kg over and above the farm gate price of EUR 0.35/kg of green leaf in the same year (Bergman et al., 2016). Also, the external costs of tea produced by farmers attending farmer field schools³ versus conventional farms in Kenya were found to be 29% lower and, consequently, their tea is 24% more profitable (generating annual profits of EUR 1,940/ha versus EUR 1,570/ha) in 2016 (Bergman et al., 2016). Internalizing the external costs associated with the production and processing of conventional tea in the market price would make VSS-compliant tea more competitive. Therefore, examining how global tea prices intersect with the sector’s sustainability is paramount.

As with many other agricultural commodity markets, the international prices of tea are largely correlated with shifts in supply and demand. However, what differentiates tea from other commodities is that about 75% of the world’s tea is traded through public auctions, with the rest sold through direct contracts (FAO Intergovernmental Group on Tea, 2018). Trade is concentrated in three major auctions: Kolkata in India, Mombasa in Kenya, and Colombo in Sri Lanka, which act as the dominant points of reference for pricing and market activity (Gro Intelligence, 2018). The auctions bring tea buyers and sellers together to determine prices through interactive competitive bidding based on prior assessment of the grade and quality of the tea (Monroy et al., 2013). Tea quality is determined by assessing the leaf for size and neatness, as well as the cup for taste characteristics. Different markets value different quality aspects; for instance, Pakistan pays more for neat black leaf and bright, golden teas with high flavour, while the United Kingdom pays more for redder teas. Egypt goes for dust grades and Sudan for bolder leaf types. This means teas with higher quality and particular characteristics receive better prices at auctions from interested buyers.

Tea auction prices in real terms have been declining for the past four decades (FAO, 2022), with strong drops in the last 3 years due to pandemic-related disruptions to logistics. These disruptions affected trade, with measures imposed by

³ “Farmer field school is a participatory education approach that brings together a group of small-scale food producers to solve production problems through sustainable agriculture” (FAO, 2021b). Introduced in Kenya by the Kenya Tea Development Agency (KTDA) Holdings Limited and partners in 2006, the schools have helped producers increase yields and encouraged farmers to work collectively to source equipment and sell their produce—all of which can enhance farm profitability (Millet, 2021).

many countries to contain the spread of COVID-19, which resulted in lower global demand (FAO, 2022). Auction prices fell to an all-time low (below USD 2/kg) in 2020 due to a combination of low global demand and oversupply in the market because of good weather conditions in East Africa that yielded more tea than expected (Gahigi, 2020).

More recently, the unprecedented economic and agricultural supply chain disruptions stemming from Russia's invasion of Ukraine have affected international tea prices, as the conflict has cut tea demand from several countries that used the Black Sea as their main shipping route (Andae, 2022a). Auction tea prices declined by 11% between the fourth quarter of 2022 and the first quarter of 2023 due to lower demand in key consumer regions in Central Asia as a result of the war in Ukraine (World Bank Group, 2023).

The negative impacts of the war on Ukraine on the global tea market have been felt by major producing countries such as Kenya, where tea farmers and exporters face low prices as well as high export and shipping costs to Russia, an important buyer of Kenyan tea (Andae, 2022a). The Russian Federation is also a major supplier of fertilizers, and the limited availability and higher prices of fertilizers, coupled with high inflation levels, could translate into lower global tea yields, affect tea quality, and potentially result in more volatility in the tea market in the coming years (Acciarino, 2022; FAO, 2022a; FAO et al., 2022; Husain, 2022; United Nations Conference on Trade and Development, 2022).

Low international tea prices and high production costs threaten tea farmers' livelihoods.

Most tea is grown in developing countries, especially in Asia and Africa, where production is dominated by small-scale farmers who rely on the crop as a major source of income and livelihood (FAO, 2021b). Smallholder farmers in countries that depend on tea exports are particularly vulnerable to international price shocks and volatility, as unpredictable tea prices expose them to financial uncertainty and inhibit incentives for investments at the farm level while reducing their incomes and savings (Aksoy, 2012; FAO, 2011). In addition, the crop is a main source of export revenues in most producing countries. Additionally, unanticipated variations in international tea prices have important consequences on local economies and, consequently, on the well-being of producers, plantation workers, and their families (FAO, 2021a).

In countries such as Vietnam, for instance, farmers are unwilling to invest in tea due to the steady decline in prices in recent decades. Extreme weather conditions and the excessive use of chemical fertilizers and herbicides in the country have resulted in poor soil health, lower-quality crops, and smaller yields, undermining Vietnamese tea's reputation on international markets (United Nations Environment Programme [UNEP], 2018). In India and Sri Lanka, even when the tea industry brings important export revenues, tea farmers and pickers are struggling, as farm gate prices and wages have fallen while production costs have risen due to inflation (Preetha, 2023). Sri Lankan tea farmers are struggling because of a financial crisis that has resulted in

abnormal inflation and exorbitant food prices, adding to the effects of lower tea yields and quality due to the government's decision in 2021 to ban chemical fertilizers (Bellalou, 2022; South Asia Alliance for Poverty Eradication [SAAPE], 2022). Also, many plantation workers in South Asian countries, including India, Sri Lanka, and Bangladesh, have reported mistreatment and huge wage reductions that have pushed wages below the legal minimum, threatening their livelihoods (Ravindran, 2023; SAAPE, 2022).

The effects of international tea market price variations on farm gate prices vary by country and region, as tea pricing at the domestic level can be subject to regulations, marketing structures, and other support systems that can influence what farmers receive for the green leaf tea they produce. Pricing models that reflect the cost of production and the final prices obtained at auctions determine producer prices in major tea-producing countries. Farmers can also receive bonuses based on the performance of their teas at auctions (FAO, 2015).

In Malawi, for instance, a national pricing committee made up of processors and farmers determines green leaf tea producer prices. Committee members meet regularly to determine the base and bonus price of green leaf tea using a pricing formula that considers the average domestic costs of production and processing. Farmers also receive a bonus payment per kg of green tea leaves based on the formula that determines the difference between the average price obtained at auctions and the cost of production (Fang et al., 2014).

Tea farmers in Kenya received about 16% of the final price obtained at the auctions in 2022, which represented about USD 0.30/kg of green leaf tea delivered (Muiruri,

2023). That same year, the Kenyan government implemented a minimum price or reserve price of USD 2.43/kg for teas sold by the KTDA at the Mombasa auction; these teas make up more than 66% of the country's total production. This minimum price is meant to provide a cushion for farmers by ensuring their teas are not sold below a certain price (Andae, 2022b). However, the effects of this measure on improving farmers' prices remain to be seen, as the currently over-supplied market has resulted in significant quantities of unsold Kenyan tea in the market, meaning that farmers are not receiving payments for their tea. This is expected to worsen with the El Nino-induced heavy rains that are expected to result in boosting tea supply in 2024 (Ngugi & Kamau, 2023).

In Asian countries, including Sri Lanka and Vietnam, producers' prices have been slightly higher than those received by East African peers, with an average of USD 0.40/kg and USD 0.70/kg in 2020–2022 (FAOSTAT, 2023). In other countries, such as India and Nepal, farmers receive as low as 0.16/kg (Preetha, 2023; SAAPE, 2022). Small-scale farmers in India recently staged hunger protests demanding reasonable prices from the Tea Board India, as USD 0.16/kg is not even enough to cover production costs. While attempts have been made to set a minimum price for green leaves in Nepal, its implementation has been challenging as buyers are unwilling to pay that price (Dhar et al., 2022).

The type of farmer organization can influence farm gate prices.

Most tea-producing countries have hierarchal structures that include large plantations or tea estates where employed tea pluckers harvest tea and are paid by the kg of green tea leaf delivered. On the other side are smallholder farmers, who account for most of the production in many countries. They are usually part of the informal tea economy, as many are own-account workers who work in their tea gardens without hiring any workforce, household workers who engage in tea farming without any remuneration, or casual labourers who are hired on a temporary basis for informal remuneration (SAAPE, 2022). As a result, they are not included under social security provisions or guaranteed minimum wages.

Smallholders usually depend on the buyer's willingness to pay the minimum prices for green leaves when such provisions exist. In Nepal, for instance, smallholder farmers have historically been offered lower prices for green tea leaves than tea estates due to a perception of lower tea quality and a lack of information on market prices. Also, tea estates usually have higher yields and better access to technology and quality inputs, such as fertilizers (SAAPE, 2022). In Vietnam, smallholder farmers' lack of financial education diminishes their bargaining power when selling their tea at the farm gate and even when negotiating prices when buying inputs such as fertilizers (Chinh et al., 2021).

Rwanda and Vietnam are among the countries that have land-sharing cooperatives, where groups of smallholder farmers jointly share and manage land and

profits are distributed among members of the cooperative associations (Foster & Graham, 2014; Khoi et al., 2015). These cooperatives coordinate the aggregation, transport, and payment for green tea leaves to the farmers, and payments to smallholders are based on the weight of green leaf tea produced (Foster & Graham, 2014). Smallholders may produce better-quality tea than tea estates, as they are usually more careful during the collection processes (plucking technique) than temporary workers in fields. Costs of production and the high costs of fertilizer, inputs, and transportation are variables that can reduce smallholder and cooperative farmer profits (Foster & Graham, 2014).

The greatest value in the tea value chain is captured during the blending and packaging stage.

Tea has a complex value chain that involves the participation and interaction of different actors, including tea estates, smallholder farmers, brokers, bidders, blenders, wholesalers, and retailers. The growing, harvesting, processing, and exporting activities take place in the producing country. The green tea leaves produced by smallholder farmers reach processing factories either directly or through collector or cooperative groups. For 1 kg of processed or "made tea," 4 kg of green leaves is used (SAAPE, 2022). There is generally no additional processing after the transformation from green leaf into made tea, except for milled teas like matcha, fermented teas, and smoked teas.

Made tea is dispatched to the auction centres, where exporters and intermediary

companies bid and buy the tea in bulk. Tea can also be directly delivered to buyers when it has been negotiated through direct sales (Fang et al., 2014; Tuyishime et al., 2020). Tea traders, agents, and brokers play an important role at this stage, as they are responsible for tasting, sampling, and pricing. They also help connect sellers to international buyers and distribute tea samples to buyers before the auctions. Agents and brokers make their profit from storage fees and charge an operating commission that is about 1.5% of the final selling price (1% paid by the producer, the rest by the buyer) (Fang et al., 2014; Monroy et al., 2013).

The real value addition in the tea chain starts at the factory, where processing and grading are done. Most tea companies in producing countries sell bulk processed tea, which is ready for consumption but not labelled, packed, or branded and receives a price that is one sixth of its potential value (Khoi et al., 2015). The second stage of value addition happens during blending and packing activities, which are the most profitable steps in the value chain. These processes are undertaken in importing and consuming countries, especially at the processing plants of multinational tea companies, mostly located in Europe and other Western countries (Monroy et al., 2013). This shows that most of the money made from tea resides in consuming countries, while most of the work and efforts on improving practices and tea quality take place in producing countries.

According to FAO research (2014) on the tea industry in China, fresh tea retains about 20% of its total value added through the value chain, primary processed tea retains 5%, and the refining and blending processes cover about 15%. Wholesalers and retailers retain about 20% and 40%

of the total value added, respectively. In countries like Vietnam, farmers contribute the most to the net value added in the whole chain, at about 42% (Chinh et al., 2021).

In some tea-producing countries, smallholders make no profit, as their total production costs often exceed their earnings (Khoi et al., 2015). Tea estates can obtain margins of about 15% of the total retail price, as they may have greater capacity to produce and process larger quantities of tea than smallholder farmers. Wholesalers and retailers generally achieve the highest margins in the whole value chain, with about 45% of the final retail price (Fang et al., 2014; Khoi et al., 2015). Downstream actors in the value chain can get higher profits and margins as they operate in a wide network and have better access to market information and marketing channels (Khoi et al., 2015). In addition, loose tea is a high-margin product due to the small quantity of tea needed to brew a cup. The mark-ups for loose tea at retail can be substantial compared to tea-bagged teas. However, it should be noted that adding activities also means adding costs, and retailers, wholesalers, and processors incur a range of costs and make investments related to labour, technology, marketing facilities, and rent (Khoi et al., 2015).

Highly vertically integrated multinationals that own and manage plantations and factories in many tea-producing countries manage about 85% of the tea output consumed worldwide (Monroy, 2013; Voora et al., 2019). These few companies control several processes—from the farm input supply to the tea-bag retail—and strongly influence the price-setting dynamics through the value chain (SAAPE, 2022). They also have considerable power to influence prices at auctions. With their buying policies, these companies can

influence both price movements and the demand for certain qualities of tea (Fairtrade Foundation, 2023). The complex dynamics of the tea trade and the multiple channels of distribution make it difficult to enforce transparency and obtain clear and comprehensive pricing data from auctions and buyers.

Due to the structure of the tea market, participants upstream in the value chain—that is, plantation workers and smallholder farmers, who contribute the most to the production of tea—are the most vulnerable, as they bear all the risks of extreme weather changes, must cope with the limited availability and variable costs of inputs such as fertilizers, and keep receiving low prices and wages that represent a minimal share of the price tea fetches on the international market (SAAPE, 2022).

Smallholder farmers can be considered price-takers, as very little tea can be sold through direct contracts. Farmers also have very little influence over prices at tea auctions and cannot easily adjust to market conditions, as they have a limited relationship with buyers and are not able to decide to whom they sell (Monroy et al., 2013). In many producing countries, smallholders have limited know-how on the market and must pay a great deal to brokers to sell their made tea (SAAPE, 2022).

Even when smallholders find prospective buyers for their made tea, many encounter legal and administrative barriers that prevent them from accessing potential export markets. As an example, Chinese legislation prohibits small tea farmers from directly exporting to consuming countries such as the United States, and usually, only large factory operations or registered brokerage firms have the resources to accept foreign funds and negotiate with potential buyers overseas (Verdant Tea, 2015). In

Kenya, the Tea Act of 2020 banned direct sales of KTDA teas and mandated that all teas be sold at auction, which has also compounded problems of oversupply in the auction (Waitathu, 2020).

What have VSSs done to pricing in the tea sector?

Some VSSs operating in the tea sector, seeking to help smallholder farmers and plantation workers, have developed programs and mechanisms to address low farm prices and price volatility. Fairtrade International and Rainforest Alliance/UTZ offer price floors, premium models, or sustainability differentials, and Fairtrade International is working toward establishing living wage benchmarks and differentials. Other sustainability standards, such as Trustea, have no minimum prices or premiums in place.

Fairtrade minimum prices (FTMPs) for made tea are origin specific. For instance, as of 2020, producer organizations in Sri Lanka receive USD 2.40/kg of conventional tea and USD 2.60/kg of organic tea, those in India get about USD 2/kg for conventional and 2.20/kg of organic tea, and Kenyan producers receive about USD 1.70 to USD 1.80/kg of conventional and USD 1.90 to USD 2/kg of organic tea (Fairtrade International, 2023). In addition, all producer organizations across producing countries receive a Fairtrade premium of USD 0.50/kg for community and economic investment. In countries where there is no defined FTMP, producers receive the commercial price plus USD 1.10/kg of premium tea. Fairtrade has also designed a specific standard for tea plantations, conceived to support worker organizations

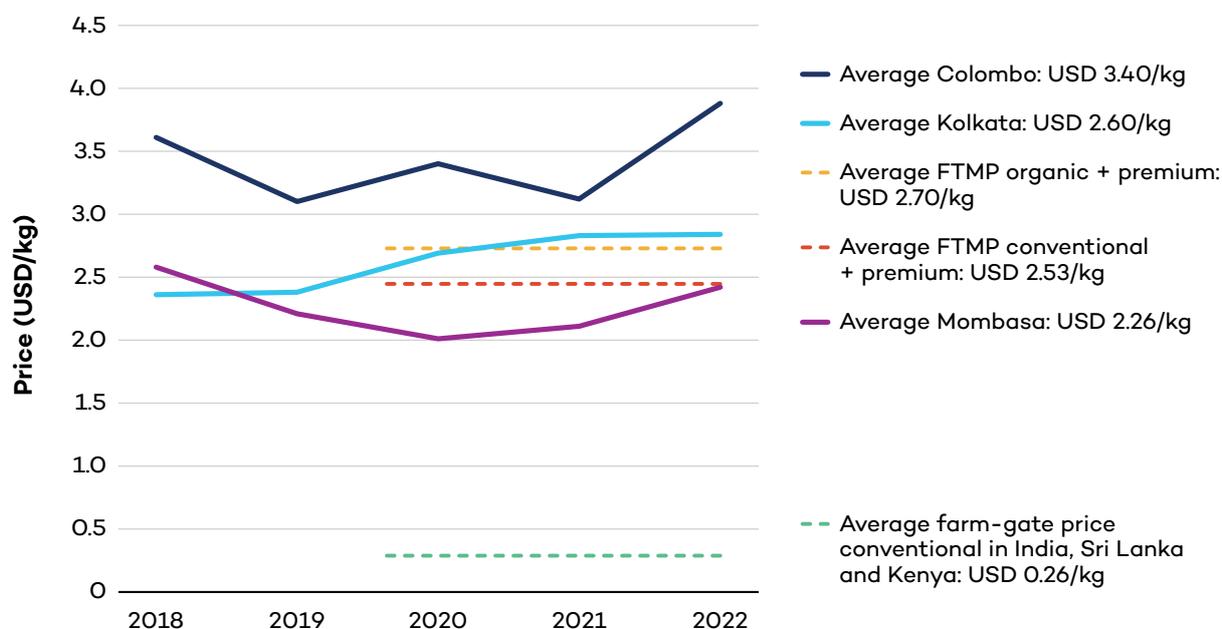
and their needs, and their progress toward living wages (Fairtrade International, 2023).

Since 2020, Rainforest Alliance/UTZ has required all tea buyers to pay a mandatory sustainability differential, which is an additional cash payment made to certified producers over and above the market price. This additional payment can be used to reinvest in the farm, for family needs, or to cover production costs. Buyers also are obliged to offer cash or in-kind investments to certified producers. This “sustainability investment” differential aims to share the costs of achieving and maintaining certification and adopting more sustainable farming practices (Rainforest Alliance, 2023). Both the sustainability differential and the investment amounts are paid based

on volumes redeemed on the Rainforest Alliance traceability platform by the player packing and/or selling the teas to end consumers.

To illustrate how Fairtrade premiums are positioned in the tea sector, Figure 5 shows the average international price for made tea in the Colombo, Kolkata, and Mombasa auctions (2018 to 2022), as well as the average Fairtrade prices (free on board [FOB]/auctions), including premiums to producers in India, Kenya, and Sri Lanka from 2020 to 2022. The figure also shows the average producer prices for tea leaves in India, Kenya, and Sri Lanka in 2020–2022. It should be noted that the prices represented in the figure are estimates and

Figure 5. The average international market price for tea in the Colombo, Kolkata, and Mombasa auctions (2018–2022); average prices and premiums for Fairtrade and Fairtrade–Organic tea (FOB/auctions); and average farm gate prices received by tea producers in India, Kenya, and Sri Lanka 2020–2022 (all in USD/kg)



Sources: Authors’ elaboration based on FAOSTAT, 2023; Fairtrade International, 2023; Preetha, 2023; World Bank, 2021, 2023.

Note: Data for the three major auction markets are for 2018–2020; all the other data points in the figure are for 2020–2022. These values are for green tea leaves.

do not reflect the reality of all tea growers in these countries.

Our analysis and the data shown in Figure 5 signal that tea producers in main tea-producing countries, such as Kenya, that are associated with VSSs, such as Fairtrade, may have received average prices and premiums above the average international market prices or prices at Mombasa auctions in the 2020–2022 period. For Kenyan producers, this can represent about 15% higher prices for conventional Fairtrade tea and about 23% higher prices for Organic–Fairtrade teas in the period analyzed.

Surprisingly, Sri Lankan and Indian producers associated with Fairtrade International may have received prices and premiums that are at the same level or even below the Colombo and Kolkata auction average prices in the 2020–2022 period. This could be because average prices at auctions rose in 2021/22 due to higher global market demand (World Bank, 2022) and the last update on FTMPs was in 2020, when international prices at auctions were lower, at least in the Kolkata market.

Also, conventional tea producers usually get a share of auction prices, as the selling price is distributed among brokers and other middlemen. Conventional farmers in Kenya, for example, receive about 12% to 16% of the auction price, while those in Sri Lanka and India get around 4% to 6% of the final auction price. On the other hand, farmers who are part of Fairtrade-compliant cooperatives may get a higher share of the final price of tea at auctions or FOB, as there may be fewer intermediaries in the negotiation process.

It is also important to note that, according to Fairtrade International pricing terms, the FTMP is the lowest possible price the buyer

must pay to the producer. In other words, when the market price of tea is higher than the FTMP, then at least the market price must be paid, plus the mandatory premium (Fairtrade International, 2023). According to Figure 5, this means that Fairtrade- and Fairtrade–Organic-compliant farmers in Kenya, Sri Lanka, and India may have been better protected against fluctuations and received higher prices for their made tea than conventional farmers when selling their tea as Fairtrade and Fairtrade–Organic compliant from 2020 to 2022.

Evidence of the effects of VSSs on tea farmers' prices and incomes is still inconclusive. Results are highly context and location specific. There is some evidence of positive results for the livelihoods of smallholder farmers who adopt VSSs in the tea sector, while other studies mention that positive effects on prices and incomes are often small and limited to a few beneficiaries (FAO Intergovernmental Group on Tea, 2018).

As an example, a study among tea smallholder farms in Vietnam shows that farmers who transitioned to organic farming believed they enjoyed greater export opportunities and higher demand from developed countries. They also reported receiving higher prices than their non-organic peers due to their potential to sign contracts with tea companies that commit to purchasing all their organic output. Securing contracts reassures farmers and enables them to focus more on quality farming, as contracts specify the prices they will receive in advance and lower the financial risks (Thuy & Anh, 2021). However, farmers' incomes may decrease in the first few years after converting to organic production due to the high production costs incurred and lower yields (Bui & Huyen, 2020).

Tea farmers associated with VSSs, such as Fairtrade, Organic, or Rainforest Alliance, also may benefit from non-monetary factors that can boost their incomes or make them more resilient to price shocks. These factors include improved access to land, the possibility of growing other cash crops with the premium received, and more resilient production thanks to better soil fertility and crop diversification (FAO Intergovernmental Group on Tea, 2018). VSSs can also give farmers the opportunity to associate within cooperatives and increase their negotiating power in the marketplace, improve business systems and access to markets, and develop long-term partnerships with buyers (International Fund for Agricultural Development, 2020; Jennings et al., 2018).

While some producers may receive monetary and non-monetary incentives for VSS-compliant tea, ensuring that price differentials reach farmers is sometimes difficult. In addition, there is still the question of whether minimum prices, premiums, and other differentials are enough to make a difference in tea farmer's incomes and how to ensure that these premiums are not a token amount. Also, as mentioned above, one of the biggest challenges of VSS-compliant tea is the mismatch between production and consumption. According to the FAO, as little as 10% of certified tea is sold as such, and farmers do not receive premiums for the rest, which is sold as conventional. In major consuming countries such as Russia, China, and India, where demand for certified goods is insufficient, tea is often sold on the conventional market, and producers do not receive a premium, despite having invested in certifications (FAO Intergovernmental Group on Tea, 2018).

The additional costs and fees to access and maintain certifications (i.e., monitoring, documentation, training, and planning) are another limiting factor for smallholder farmers, as adoption of standards can result in extra costs in terms of production processes, training, and auditing, which may result in little increase in profits (FAO Intergovernmental Group on Tea, 2018; Foster & Graham, 2014). In countries such as Nepal, for instance, smallholder farmers find it challenging to adopt organic methods, as they lack access to organic fertilizers and cannot withstand the loss of productivity in the initial years after conversion (SAAPE, 2022). Studies in tea-producing countries, including Nepal, Uganda, Bangladesh, and Vietnam, suggest that owners of larger farms access more certifications than small farmers. This may be because transitioning from conventional farming requires the adoption of new production methods and significant capital investment, which only larger-scale farmers can afford (Bui & Huyen, 2020; FAO Intergovernmental Group on Tea, 2018).

Public and private sector actors implement other supporting measures.

Tea-producing countries have adopted policies and programs to shield producers from volatile and low farm gate prices. One example includes the introduction of a minimum price for Kenyan teas sold at the Mombasa auction by the Government of Kenya. Other potential reforms to be implemented in the country include fertilizer subsidies, increases in monthly payments to farmers, payment of bonuses, and lower interest rates for Kenyan tea farmers to ensure access to affordable

loans (Kurgat, 2023). Since early 2023, the KTDA has been organizing a series of meetings with tea growers and small tea factories across Kenya to improve the agency's performance and accountability while finding ways to increase returns to tea growers. The reforms the agency is planning include reducing management fees paid by smallholder tea factories and introducing the agency's managers to key performance indicators (Tea Board of Kenya, 2023; Yaroslavsky, 2021).

The Government of Sri Lanka has tried various strategies and policies, such as a fertilizer subsidy scheme, new tree-planting programs, and a subsidy to increase competitiveness in the tea sector (Thasfiha et al., 2020). In a bid to fully convert the country to organic farming and as a strategy to maintain foreign reserves at a time of economic strife, the government announced an abrupt ban on chemical fertilizers in 2021. This decision harmed the tea sector, as yields plummeted and farmers suffered financial losses due to crop failure. Although the ban was reversed the same year, it had already caused a great deal of damage to the domestic tea industry (Bellalou, 2022).

In India, the Tea Board is reviewing the Tea Act, which dates from 1953, as some of its provisions have become irrelevant to the current market. The revised act will introduce new objectives so the board can act as a facilitator to encourage research, help to improve production and the quality of Indian tea, promote economic sustainability, and give small tea growers a greater role in decision making (Singh, 2022). The board is also taking steps toward formulating policies to promote more sustainable production practices in India and introduce a system by which domestic tea can be rated according to its compliance

standards related to environmental, quality, and safety parameters (PTI, 2023).

Other multi-government efforts include the International Tea Producers Forum, founded in 2013 by Sri Lanka, India, Kenya, Indonesia, Rwanda, and Malawi, which account for more than half of global tea production. Its objectives include protecting the interests of tea-producing countries, sharing knowledge, and boosting global demand (Suchitra, 2013). The forum also aims to promote quality standards and ensure price stability to improve the livelihoods of tea smallholders. Another mechanism that has been created to make the tea sector more transparent is Tea 2030, a global project formed by industry actors, non-governmental organizations, and academics to help build a sustainable tea industry. Its work includes finding mechanisms to address risk management resulting from price volatility and advocating for better wages and prices across the tea supply chain. The project has been finalized, but the Ethical Tea Partnership and the Sustainable Trade Initiative (IDH) have continued to develop activities originally designed under Tea 2030 to accelerate sustainability in the global tea industry (Forum for the Future, 2023).

The Ethical Tea Partnership, a global membership organization that includes tea buyers, has undertaken projects in the hopes of (i) resolving issues and improving living and working conditions in Indian tea estates, (ii) bettering the livelihoods of smallholders in Malawi and Rwanda through good agricultural practices and income diversification programs, and (iii) building climate resilience and income diversification projects in Kenya in partnership with the KTDA that have raised the incomes of participating farmers

by more than USD 15 a month (Ethical Tea Partnership, 2022, 2023).

On the private sector side, some tea buyers in developed countries purchase VSS-compliant or specialty teas through direct trade. Although the specialty tea sector represents a very small share of the total tea market, these teas can attract up to 10 times the conventional prices and 2–3 times the VSS-compliant prices at the export level, as they cut out intermediaries and buyers usually pay growers directly for their crop (Voora et al., 2019). Specialty or direct-trade buyers are willing to pay higher prices, as their relationships with growers and the reliability of supply and quality prevail over economic considerations. Still, many of these buyers follow the prices being paid at auctions to make price decisions based on the market and farmers' needs (SAAPE, 2022).

In sum, governments, non-governmental organizations, VSSs, and private sector actors have developed various programs and measures to improve the livelihoods of tea farmers by boosting the prices and incomes farmers receive. Not all farmers have benefited, however, and many continue to live in poverty.

Tea is still a commodity crop that is mostly traded through auctions, which are heavily influenced by a few actors in the value chain that have little concern for the social, environmental, and other negative impacts of conventional tea production or the value of more sustainable growing practices. When setting the price of tea, market fundamentals, including trading at low prices at auctions, still dominate over the work of farmers and the value of adopting better agricultural practices that contribute to environmental conservation and the well-being of producers.

The Way Forward: What is needed to address low farm gate prices and build a more sustainable tea value chain?

Tea farmers' incomes suffer not only because of low farm gate prices and their limited capacity to influence the prices they receive but also because of externalities such as the volatility of input costs and extreme weather conditions. Economic sustainability for smallholder tea producers can only be guaranteed if the returns from tea-growing activities cover at least the production costs and basic household needs (FAO, 2022a). This also means that a higher farm gate price does not necessarily mean higher incomes for farmers. As prices rise, so too can production costs, making tea farmers even more susceptible to market fluctuations.

In addition, government activity in producing countries in setting minimum price levels is a complex topic that requires special attention. Minimum prices and other reforms in the tea sector should consider quality and sustainability considerations to incentivize buyers to pay prices that reflect these efforts. In that sense, governments in major producing countries like Kenya should consider the implementation of minimum quality standards, which would translate into less low-quality tea and higher prices and therefore a more sustainable industry. Buyers and VSSs can also contribute by finding ways to shift some of the realized value generated through the value chain back to farmers and producers.

This reality underscores the need to develop new approaches and alternative business

models that address externalities in the tea sector and reward the efforts of workers and farmers, particularly those adopting more sustainable practices. The following list of best practices can mitigate the negative effects of price volatility on farmers' incomes while increasing them.

VSSs can offer better prices and incomes to compliant farmers to help establish living incomes.

VSSs in the tea sector should work toward mandating premiums or minimum price levels that reflect the investments and efforts made to join their schemes, including premiums on quality for the tea produced. This approach can also protect compliant farmers from low farm gate prices. Organic tea prices are still based on international conventional market prices, and, in some cases, farmers do not have incentives to switch from conventional production systems due to the additional costs. Other VSSs, such as Trustea, have not formally incorporated approaches to better remunerate compliant farmers.

FTMPs should be reviewed and adjusted to reflect the market more accurately, be more impactful, and provide a cushion for farmers. If FTMPs remain close to or below conventional auction prices for an extended period, farmers will question why they have committed resources and time without benefiting from doing so. In addition, the whole smallholder farming system must be considered when reassessing VSS prices and premiums, as farm profitability for many smallholder farmers depends on tea and other crops. It is therefore important that VSSs, with the support of other actors,

including buyers and producing countries, find ways to effectively reward more sustainable practices and results but also to level up the inequitable sharing of value in the tea industry. Rainforest Alliance's shared responsibility model is an interesting approach looking to distribute the benefits and costs of certification more evenly between farmers and incomes (Rainforest Alliance, 2023).

These efforts should go hand-in-hand with establishing benchmarks to start defining living income reference prices, as has been done in other commodity sectors, such as cocoa and coffee. Indeed, the goal should be to move from a living income to a thriving income if sustainability is to be claimed and achieved, as merely living is not enough.

Promote the modernization of tea auctions, moving to set up mechanisms to promote the trade of more sustainable tea.

Global tea auctions have started to modernize while considering the rapid technological advancement in trading processes in commodity markets. This transformation was especially evident in 2020 when the pandemic obliged people to follow social distancing and other health guidelines that hindered physical negotiations in traditional tea auctions (Spencer, 2020). In 2021, for instance, the Sri Lankan auction in Colombo adopted a policy decision to digitalize, materializing in the Advanced Integrated Digital Auction Tea Platform developed by a local technology company. This system aims to automate all transaction

processes in the value chain that connect to the auction system, from the factory to the final settlement of the transaction's payment (OKLO, 2022).

Indian and Kenyan auction centres are fully digitized with streamlined processes, enabling brokers to move larger quantities of tea faster. Going forward, tea auctions could implement processes and systems allowing negotiations to be opened for different teas, such as those compliant with a VSS or that present specific sustainability or quality characteristics. Also, farmers and tea plantations in many producing countries are willing to invest and sell directly to international buyers; however, domestic policies prevent them from bypassing auctions (Harvard CID, 2015). In that sense, opening channels for direct trade through e-platforms would thus give farmers the opportunity to obtain higher prices and premiums for their tea and buyers the possibility to access other types of teas based on their market needs. This effort could be supported by tea boards or private entities to facilitate direct-trade systems, which also could be an opportunity to include more farmers or processors in the negotiation processes, as digitalization allows for greater transparency, traceability, and the availability of key data on the volumes and prices of the teas traded through auctions, as well as data related to the trade of specific lots and origins for buyers.

Encourage responsible purchasing practices among tea buyers.

Creating and strengthening linkages between smallholder farmers and other

actors in the value chain is essential. Buyers can help mitigate the economic risks of smallholders and workers on tea plantations by adopting good procurement practices, such as building long-term relationships with suppliers, paying a fair price, and being consistent when placing orders (Ethical Tea Partnership, 2022). This, in turn, can help limit legal risks and protect brand reputation, as sustainability and a focus on environmental, social, and governance performance are increasingly required.

VSSs can be instrumental in helping farmers update their farming techniques and requiring buyers to provide information on prices and volumes of VSS-compliant products purchased by, for example, collecting updated data and developing sharing mechanisms, including anonymous transactions that farmers can access via smartphones. Access to market information could enable farmers to receive higher and stable prices, improve tea quality, obtain updated pricing information, and strengthen their bargaining power (Khoi et al., 2015).

Tea buyers such as Verdant Tea, Red Blossom Tea Company, and the English Tea Shop Ltd. are more responsible purchasers. They buy directly from small-scale farmers, usually purchase VSS-compliant tea such as Organic and Fairtrade, and are more transparent in their pricing and costs by sharing pricing data on their websites (Covey, 2018; Duckler, 2014). The English Tea Shop buys around 29% of Sri Lanka's total organic tea production. By reaching out directly to customers, FOB prices fetch up to USD 30/kg, while conventional teas receive an average of 4.60/kg at auctions (SAAPE, 2022). These are examples of fairly small businesses; however, if the big tea businesses would implement similar approaches, the impact would be amplified.

As already noted, buyers should engage more in direct trade as it offers them more stable relationships and gives farmers an opportunity to establish linkages to markets and obtain quick returns on investments. If buyers cannot trade directly, they should engage in frequent dialogue with intermediaries to understand if their purchasing practices can be improved. Buyers can also initiate full supply chain meetings, including suppliers, intermediaries, workers, and workers representatives, to discuss how practices can be improved (Ethical Tea Partnership, 2022). Also, to promote better purchasing practices and market linkages, farmers need support from local organizations, institutional actors, and even VSSs to have access to facilities, packaging, and shipments, as well as to help them find the right buyers. One possibility is engaging cooperatives to support smallholders in enabling direct trade for a small fee and making it a win-win value-add proposition. In addition, producing countries and their tea boards should work to reduce the administrative and legal barriers to direct trade that smallholder farmers encounter.

Buyers, traders, and industry associations can collaborate to improve price transparency for farmers.

Among the major challenges in the tea sector are the slow flow of information across the value chain and the lack of transparency on prices and premium transmissions from the final consumer level down to the primary producer. There appear to be no clear mechanisms to inform

buyers about investments and the final price and premiums paid to the producers. Tea buyers usually report on FOB prices, but they cannot track payments up to the farm.

On the other hand, VSSs and buyers report total premiums or second payments as lump sums as being invested in farmers and cooperatives. However, farmers are not always clear about how much they receive or the amount of premiums and earnings that are being used in cooperative activities (Baptista & Jenkins, 2017). In addition, farmers in many producing countries often do not know the prices that their tea obtained in auctions. In countries such as Rwanda, farmers pay trading commissions but do not negotiate them (Monroy et al., 2013).

Transparency is key to creating trust and a deeper understanding of the intrinsic value of tea. It can also help to reduce costs and strengthen relationships between producers and buyers. VSSs can play a role by promoting mechanisms to ensure full transparency on how premiums are spent. VSSs, including Trustea, already have platforms in place—such as Tracetea, a digital traceability system that helps farmers keep records on tea inputs, plucking details, and other information. It can also serve as a platform to access historical and live data on prices at auctions or to keep records on transactions and prices obtained, as well as offer an analysis of farmers' financial performance.

Governments of tea-producing countries can also play a role in asking tea estates and tea manufacturers to contribute to price transparency by releasing information about quantities of produced tea and the share of sales returns distributed to workers and farmers. This could be in the form of a periodic release of the prices paid for green tea leaves and prices fetched at auctions.

Other mechanisms, such as SMS technology, can be used to create transparency around tea prices. These types of tools have already been implemented and used by coffee producers in East Africa that have limited access to the Internet and where vital information, such as kg of coffee purchased, cash balances, expenses, and storage information data, is received and shared via text messages (Technoserve, 2016). This technology can potentially be used by tea industry actors, such as buyers or exporters, to share comprehensive information on the finances and distribution of premiums to small-scale farmers. This would also make tea cooperatives accountable to the financial institutions from which they sought financing by providing an accurate picture of their annual performance and reducing financing risks (Baptista & Jenkins, 2017).

Invest in high-quality and sustainable land management and reward farmers who adopt sustainable production practices.

Quality is linked to higher prices in the tea market. Farmers usually know the value of quality, but often, the local systems or structures do not give an opportunity to reward it. Thus, improving quality and volume at the farm level also greatly depends on policy developments (Agrilogic, 2018). This improvement would require new governance, policies, and procedures to create a more merit-based method to pay farmers (Baptista & Jenkins, 2017). Improving quality increases farmers' revenue, drives innovation, and opens new markets.

As higher volumes increase market supply and result in lower prices, it is therefore key that quality and yield-improvement programs lead to freeing land for diversification in other crops and/or activities to supplement income from tea. Sustainable management strategies can also increase farmers' prices and incomes and can be potentially supported by VSSs in the sector. Tea is extremely vulnerable to climate-related events, so it is vital to promote measures such as planting drought- and stress-tolerant tea cultivars, diversifying production, and intercropping tea with other tree crops. Investing in water conservation technologies (FAO, 2022a). One example is the implementation of a training program on the adoption of sustainable land management practices in tea led by Rikolto and Rainforest Alliance in Vietnam. The program lifted farmers' income by an average of 30% due to a reduction in chemical use and an increase in the quality of fresh tea leaves (Rikolto in Vietnam, 2018).

UNEP is collaborating with Rainforest Alliance to establish the Sustainable Tea Production Landscapes project. This project "aims ... to protect and restore soil fertility, enhance carbon sequestration, and conserve the biodiversity found in tea production landscapes, [and] it also aims to secure farmers' livelihoods by reducing their vulnerability to climate-related crop failure" (UNEP, 2018). Thanks to the program, families in some countries, including Vietnam, have seen their incomes increase and received higher prices for their crops due to the improved quality of their tea (UNEP, 2018). The success of these types of interventions also relies on adequate policies and institutional support in tea landscapes.

Additionally, governments in producing and consuming countries could formulate policies to financially reward smallholder farmers that adopt more sustainable agricultural practices and subsequently show results. These policies can take the form of payments for environmental services. International tea certification schemes, such as Fairtrade, Organic, and the Rainforest Alliance, could also “engage with farmers and countries to adapt and or develop standards to include extra steps to, for instance, mitigate carbon emissions throughout the tea’s value chain” and reward farmers for this (FAO & Chinese Academy of Agricultural Sciences, 2021).

Farmers need access to finance and alternative sources of income.

Access to finance and investment financing to fund agricultural growth and transformation is a persistent challenge in the tea sector. Tea farmers in many producing countries cannot easily access financial services for investment or crop insurance systems. In addition, tea cooperatives in major producing countries are in debt and struggling to repay their loans (Ntirenganya, 2019), as tea is a capital-intensive crop and accessing loans is risky, especially when farmers are uncertain about the final prices they obtain for their produce.

Expansion in the tea sector will require substantial financial support and the promotion of alternative income activities to farmers (International Fund for Agricultural Development, 2016), as tea farming alone in many countries is insufficient to meet the needs of a farming-only household. Therefore, strategic on-

farm income diversification can create opportunities for the next generation of tea farmers to close the economic gap between the income received from growing tea and the cost of living. As an example, intercropping tea bushes with nitrogen-fixing plants such as peanuts or pinto beans is a technique that has been promoted in Vietnam to improve soil fertility, reduce erosion, and generate additional income opportunities for tea farmers (Rikolto in Vietnam, 2018). Another interesting example is possibly using tea waste to create products such as vegan leather, benches, vending machines, and even paper items and cardboard boxes (Sagasaki, 2023). This would represent great value addition at source, directly benefiting farmers. It is therefore a good focal point for intervening players to shift these activities to farmers.

Finally, another option is to promote value-addition activities in origin countries, as processing and packing usually take place in the consumer country. Monetary incentives, such as value-added tax exemptions, a reduction in the withholding tax, holiday and equipment taxes, and other incentives intended to relocate tea packaging to producing countries, could be considered to support export-oriented investors, as happened in countries including Kenya and China (Monroy et al., 2013). Nevertheless, these incentives cannot undermine the capacity of governments to collect fiscal revenue or affect local employment and trade. The incentives must be balanced to increase local value addition while saving overseas companies some costs, making it a win-win situation.

However, producing-country governments must support these efforts by providing an enabling environment that modernizes the tea industry and gives more opportunities to small-scale farmers. In Nepal, for instance,

smallholders have formed cooperatives and established factories to process green leaves and produce made tea that fetches higher prices. However, the government legally restricts them from branding their products and selling their processed tea, which shows the lack of institutional support, disincentivizes innovation, and prevents farmers from competing with private sector actors (Dhar et al., 2022).

Building sustainable and resilient tea-production systems is essential to ensuring that tea farmers prosper. It requires industry actors—including VSSs—to coordinate and implement effective measures to reduce costs, help farmers adopt more sustainable practices, and ensure they are rewarded fairly. Measures targeting price transparency, increasing financial rewards for farmers, and improving contract terms, combined with opening increased direct-trade relationships, can make a difference to farmers' livelihoods.

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The Sustainable Commodities Marketplace Series provides a market performance overview and outlook for key agricultural commodities that comply with a number of voluntary sustainability standards (VSSs), focusing on global sustainable consumption and production. Each year, the series focuses on a different overarching theme, with individual reports for that year devoted to providing a market update for a chosen commodity. These reports are designed to be accessible and relevant for a range of audiences, including supply chain decision-makers, procurement officers, policy-makers, and producers. The series builds on *The State of Sustainable Markets 2021*, a joint publication from IISD, the International Trade Center (ITC), and the Research Institute of Organic Agriculture (FiBL), which examines over a dozen sustainability standards for various commodities.

This *Global Market Report* analyzes trends in tea production, consumption, trade flows, and other relevant areas. It uses 2019 data for tea production that is VSS-compliant, given that this was the most current data available when we conducted the analysis. The report also examines prices and margins in the tea sector, looking at how VSSs contribute to increasing farm prices. It also provides recommendations to VSSs and other actors to increase the price and income that farmers obtain for green tea leaves and build sustainable and resilient tea systems.

IISD's State of Sustainability Initiatives advances sustainable and inclusive value chains by providing credible and solutions-oriented research, dialogue, and strategic advice for decision-makers about voluntary sustainability standards and other supportive initiatives.

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