International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Sustainability Assessment of the Tea Industry in Tanzania

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Abstract:
The sustainability assessment of the tea industry in Tanzania reveals pressing challenges and opportunities within its socio-economic and environmental frameworks. Despite being a vital cash crop and source of livelihood for over 50,000 smallholder families, Tanzania's tea production lags significantly behind competitors such as Kenya, with only 5.1% of Kenya's production metrics. The study evaluates key factors influencing the industry's sustainability, including social conditions, economic viability, environmental health, and agronomic practices. A purposive sampling technique was used to select key participants with direct involvement and expertise in the tea industry including Estate workers (50); Smallholder farmers (100); and Industry Stakeholders (15) complemented with FGDs (2), in-depth interviews with key institutions, and documentary reviews.
The findings highlight systemic issues such as low worker wages, inadequate access to social services, and poor investment in modern agricultural technologies. Environmental concerns, including biodiversity loss, monoculture practices, and insufficient water management, pose further risks to the industry's future. The research concludes with recommendations for interventions that promote economic viability, social equity, and environmental stewardship, underscoring the need for strategic reforms to unlock the sector's full potential and ensure a sustainable future for Tanzanian tea production.

1.0 Introduction

Tea is the most commonly drunk beverage globally and the most consumed beverage after water (Food and Agriculture Organization of the United Nations (FAO), 2022b). It is also identified as one of the most popular and low-cost beverages in the world, coming second after water in popularity (Wachira et al., 2016). Tea is also a stimulant that provides many health benefits (Storozhuk, 2022). Drinking tea has been a daily ritual for half of the world's population (2024).

Approximately 5.1 million tonnes of tea are produced globally each year, and over 1.8 million tonnes are exported annually (FAO, 2015). Over centuries, Tea has become a key global cash crop and provides livelihoods for millions of smallholder farmers (FAO, 2022a). It plays a significant role in rural development, poverty reduction, and food security in developing countries and is one of the most important cash crops in the world (Kaison, 2015). Tea is cultivated in more than 60 countries, primarily in Asia, Africa, South America, and Eastern Europe. China produces 47% of the world's tea, followed by India, Kenya, and Sri Lanka (FAO, 2022a).

In Tanzania tea industry is one of the major agro-industrial sectors. it is currently the sixth main agricultural crop (behind cashew nuts, coffee, cotton, sisal, tea, and tobacco) (TTB, 2024). It is also the third highest earner of foreign exchange amongst agricultural exports (ibid). Tanzanian tea is grown under two systems: by smallholders, on plots averaging less than a hectare, and on large estates, which often

exceed 1,000 hectares (Baffes, 2004). Arguably, the Tea industry supports the livelihood of over 50,000 small-scale tea-growing families in rural areas, besides creating hundreds of thousands of jobs along the supply chain (TTB, 2024).

Despite its potential, Tanzania remains behind competitors with much less favourable conditions compared to it. In 2022, the area planted with tea in the country was 27,509 ha, making up just 10 percent of the area planted with tea in Kenya(TTB, 2024). However, the area that can be grown with tea in Tanzania is at least 2,762,580 ha (ibid). Impliedly, Tanzania is using less than one percent of suitable land for tea farming. Moreover, in 2022, Tanzania's metric tons production was just 5.1 percent of Kenya's metric tons production, indicating another challenge, (i.e., a large productivity gap) between the two economies (ibid). According to TTB, (2024), if Tanzania's potential is fully utilized, it will put the country behind only China (with 3,330,270 ha in 2022), but ahead of India (with 619,770 ha in 2022).

The Government of Tanzania has introduced several interventions for sector improvement. For example, In the mid-1960s the Government encouraged smallholder production, and by 1985 smallholders accounted for almost 30 percent of total tea output (ibid). However, by 1995 the share of smallholder farmers fell below 10 percent (ibid). The Government tried to revive the sector in the early 1980s by introducing a couple of reforms including privatization and rehabilitation of the two estates which were nationalized in the 1970s. Restructuring the Tea Board, Privatising the six State Tea factories, and revamping public research on tea (Baffes, 2004).

Despite these reforms, the sector continues to face sustainability challenges. For example, the country produces about 30,000 to 40,000 tons of tea annually compared to 400,000tons produced in Kenya; The average yield per hectare in Tanzania continues to be low (1,200kg to 1500kg) compared to Kenya, India, and Sri Lanka where the productivity is 2,000kg to 3,000kg, 1,500kg to 2,500kg and 1,800kg to 2,500kg respectively; there has been limited investment in modern technology and infrastructure in Tanzania in comparison with Kenya, India and Sri Lanka where have seen substantial investments in mechanisation, irrigation, and processing technologies; and the area planted with tea was 27,509 ha, in 2022 compared to the 2,762,580 ha potential (TTB,2024).

However, the sustainability of the sector requires implementing interventions that balance economic viability, social responsibility, and environmental stewardship throughout the entire production process (TraceX technology, 2023). This is envisaged to guarantee long-term productivity, environmental health, and socio-economic benefits.

This study aims to analyze the sustainability of the Tea sector in Tanzanian. By evaluating current policies, programs, and initiatives, this paper seeks to identify strengths, weaknesses, and areas for improvement for the realization of the sector's potential.

Objectives

This study will assess the sustainability of the tea sector in Tanzania, focusing on social, economic, and environmental factors.

1. Environmentally, the study evaluates issues related to Pesticides and chemical management, Food Safety, Water Management, Biodiversity, and Climate Change.
2. Economically, the study evaluates issues related to Economic viability, Poverty reduction, and Food Security; and
3. Socially, the study evaluates issues related to Access to social services, Workers' Health Safety, Freedom of Association and collective bargaining, Employment creation, and Equity and gender.

2.0 Literature Review

2.1 Environmental impact of the Tea sector

2.1.1 Implication of Climate Change for the Tea Sector

Climate change impacts are a major concern for most tea-producing countries(Gunathilaka, D., and Tunalaram, A., 2016). Extreme weather events such as floods, erratic rainfall, drought, frequent hail or frost, and increasing temperatures have all been reported to adversely affect tea production in recent years (ibid). The trends of tea production in some countries including Kenya have been showing evidence of fluctuating yields including several wild swings, which is most likely due to climate change as shown in Figure 2.0 (FAO, 2015).

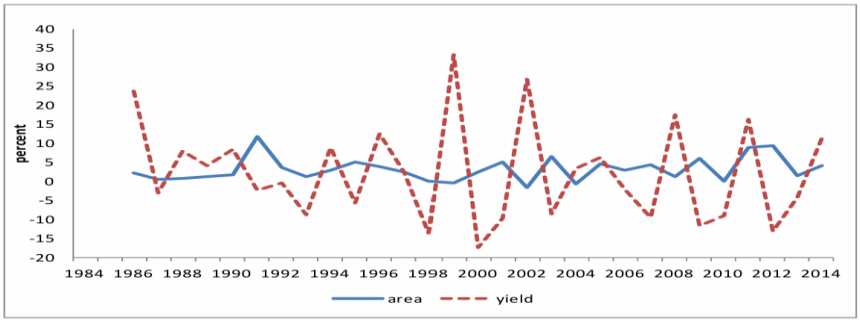


Figure 2.0: Comparative growth in area and yield in Kenya, 1985-2013
Source: FAO,(2015).

Climate change concerns have led to the formation of the FAO's Intergovernmental Group on Tea, which aims to identify appropriate and effective climate adaptation measures through modelling and impact assessment(Gunathilaka, D., and Tunalaram, A., 2016). Erratic rainfall and increasing temperatures have been reported as adverse climate effects (ibid). According to FAO, (2015), the increased temperatures could cause soils to dry if mulching is not applied and can affect yields. A more serious problem, however, is the increased incidence of new pests and diseases that attack tea bushes (ibid). In extreme cases, the increased temperature may affect tea cultivation to the extent of requiring new suitable areas (ibid). According to FAO (2015), clearing new areas for tea cultivation may result in more carbon dioxide being released into the atmosphere through deforestation. Additionally, the climate change impact may compromise water availability, through reduced or uncertain rainfall patterns, as well as limited ground and river water, consequently impacting tea yields (ibid).

2.1.2 Pest and Diseases

The impact of climate change has also manifested in the tea sector (FAO, 2015). A more serious problem, however, is the increased incidence of new pests and diseases that attack tea bushes (Pandey, et.al., 2021). According to Pandey, et.al., (2021), Fungi are the main group of pathogens that cause diseases in tea plants which in turn affect yields and quality. The pathogens affect all parts of the tea plant including foliage, stems, and roots (ibid). Generally, foliar diseases directly affect the harvest while stem and root diseases influence the survival of the tea plant (ibid). The most impactful fungal diseases include blister blight, grey blight, brown blight, twig dieback, stem cankers, and root rots (ibid).

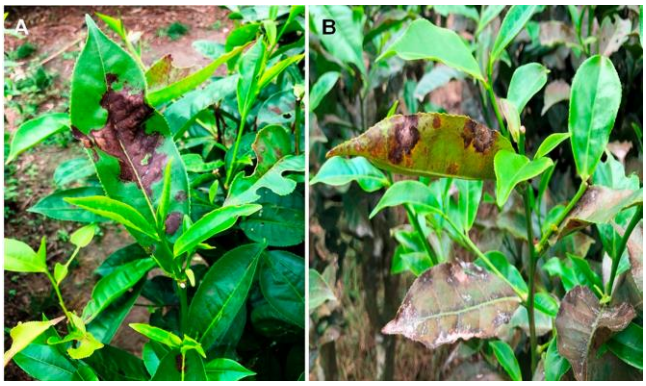


Figure 3.0: Symptoms of blight on A, adaxial, and B abaxial surfaces of tea leaves

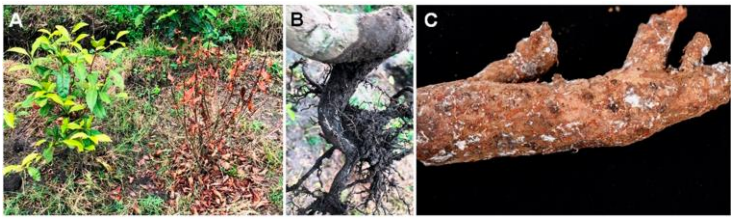


Figure 4.0: A tea plan affected by red root rot, A, Above-ground symptoms of Tea bush, B Roots showing whitish rhizomorphs at an early stage, and C, reddish rhizomorphs at a later stage

Reliable detection and identification of pathogens are critical for the effective management and sustainability of the tea sector.

2.1.3 Biodiversity Loss

The environmental footprint of tea production is also considerable in biodiversity loss. Main issues include: reduced biodiversity and ecosystem function as the result of habitat conversion, high energy consumption (mainly using logged timber), and a high application of pesticides in some countries (FAO,2015). Additionally, tea plantations also deliver other important ecosystem services such as carbon sequestration, soil fertility protection, and water conservation (Xue et al., 2013).

2.2 Economic Sustainability

The economic sustainability of the Tea sector is guided by three variables which are economic viability, poverty reduction role, and support of food security (Omar, 2024). The economic viability considers issues related to fair pricing and market access, investment in sustainable technologies, and support for smallholder farmers (ibid). Further to that, Omar, (2024) highlighted sustainability in the case of poverty reduction, which involves a guarantee to job creation opportunities, income source diversification for farmers, and access to credit and financial services. On food security, the sustainability issues include the integration of farming with food crop production, support for local food systems, and education and training on sustainable agriculture (ibid).

2.3.1 Economic viability

2.3.1.1 Fair Pricing and Market Access

International tea prices have been kept artificially low by a persistent oversupply fuelled by fierce competition between producing countries for market share (FAO, 2015c). International tea prices were

lower in 2000-2005 (Grooseman, 2011), before escalating significantly from 2006 to 2009, rising from US $1.6 per kg to 2.85 per kg; around an 80% increase (Gunathilaka, D., and Tunalaram, A., 2016). In Kenya Tea export prices were reduced by 13.7 percent to Ksh 238.8 per kilogram, attributed to the over-production of black tea globally (KNBS, 2020).

The fluctuation experienced between 1989 and 2005 and the escalation of 2006 and 2009 have been explained by the FAO's Committee on Commodity Problems to be linked with: improved supply and demand balance; for the first time on record, world tea consumption exceeded production in 2009, 2010, and 2011; depreciation of the US $ and increased transportation costs due to high oil prices (Gunathilaka, and Tularam, 2016). Other drivers of international tea prices include trends trade preferences, the potential effects of pests and diseases on production, and changing dynamics between retailers, wholesalers, and multinationals (FAO,2015b). The increase in tea prices resulted in an estimated 6 percent growth in export earnings in 2012 to USD 5.2 billion globally (FAO 2015b).

However, smallholder farmers face problematic situations where the prices they are paid for fresh tea leaves, more often than not, tend to be below the cost of production, if labour cost is factored in (FAO 2015b). In addressing such a problem, governments of some tea-producing countries have created policies to promote long-term buying commitments that would enable economic stability and sustainability and, hence, retention of smallholders in rural areas (ibid). This is certainly true for Kenya and Sri Lanka. India has recently created a Small Grower Development Directorate (SGDD) under the Tea Board of India to implement Government policy (ibid).

Additionally, Tea trade and distribution are dominated by a few international companies (including Unilever, Tata Tea, Sra Lee, and Associated British Foods), that benefit from stable retail prices (FAO, 2015). Although there have been periods of price increases in nominal terms for the past three decades to 2008, in real terms, prices have declined significantly (ibid).

Furthermore, approximately 70 percent of all tea is sold through auctions before exporting to consuming countries for blending and packing (FAO, 2015c). This value chain stage is by far the most lucrative and generally takes place in the importing country (ibid). Most producing countries sell bulk processed tea, which, although 'ready to drink', is not packed and branded and receives a price one-sixth its potential value (Grooseman, 2011).

2.3.1.2 Investment in sustainable technologies

According to the Kenya Institute for Public Policy Research and Analysis (KIPPRA), (2017), only 14 percent of the exported tea from Kenya is value-added. The result of a low level of value addition is the loss of approximately US$ 12 per kilogram of tea (ibid). Despite being the leading exporter of tea in terms of volumes, Kenya receives minimal earnings compared to other tea-exporting countries (Kataa and Kispaat, 2020). For example, Kenya exported 131 metric tonnes in 2013 more than Sri Lanka but earned US$ 0.3 billion less (KIPPRA, 2017).

Further, KIPPRA, (2017) in (Kataa and Kispaat, 2020) indicated that diversification to specialty teas such as green, purple, white, oolong, and other orthodox teas has been a challenge in Kenya. Consequently, only 4 percent of specialty tea is processed (ibid). This was attributed to limited technical capacity in terms of production technology in the cottage tea factories (KIPPRA, 2017).

2.3.1.3 Support for Small-holder farmers

The Kenya Tea Development Agency (KTDA) is a company owned by around 650,000 smallholder tea farmers across 17 Kenyan tea-growing counties (IDH, 2021). KTDA supports tea farmers with training on good farming practices as well as a range of services such as transportation, processing, and marketing

(ibid). To improve the business skills of its farmers, the KTDA Foundation has decided to start providing training on business skills and financial literacy. By 2018, KTDA trained over 105,000 smallholder tea farmers on these topics (ibid).

2.3.2 Job creation and poverty reduction

The Tea industry provides a vital source of export earnings for tea-exporting countries (Gunathilaka, D., and Tunalaram, A., 2016). A large proportion of these nations' populations rely on the tea industry for employment (ibid). According to Sri Lankan Tea Industry employs 10% of the population (Ganewatta, et.al., 2005). This has been attributed to the nature of Tea production, whereas Tea production is labour-intensive, which provides jobs, especially in remote, economically depressed rural areas (FAO, 2015). In Kenya, the sector supports the livelihoods of over 600,000 Kenyans engaged in tea farming as smallholder farmers (KIPPRA, 2017). The wage employment at the production node (tea growing activities) of the value chain in Kenya increased from 81,958 persons in 2017 to 83,329 persons in 2018 (KNBS, 2019). Also, specialty tea in Kenya was found to have the potential to create over 2000 new jobs, and the entry of over five innovative enterprises (Kataa and Kispaat, 2020).

According to The Kenya Youth Agribusiness Strategy (2017-2021), there is high employment potential for the youth in agro-processing and value addition(Kataa and Kispaat, 2020). However, the sector is characterized by Low participation of the youth in tea-growing activities (ibid).

2.3.2.1 Income source diversification the case of SAT and EOT Groups in Malawi

Tea is the primary source of income for all members of Sukambizi Association Trust (SAT) and Eastern Out growers Trust (EOT) in Malawi, however, most grow other cash crops such as pineapple and sugar cane to supplement their income (FAO, 2015c). According to Pound and Natural Research Institute (NRI) (2013), income diversification has enhanced the sustainability of smallholder tea producer organisations of Sukambizi Association Trust (SAT) and Eastern Out growers Trust (EOT). The EOT has established income-generating enterprises (including tea nurseries and a grain mill) (ibid).

Income diversification through Fairtrade certification has improved the standard of living for members of the Sukambizi Association Trust (SAT) and Eastern Out Growers Trust (EOT). Fairtrade certification has increased access to resources, which has led to higher incomes and productivity.

2.3.3 Food security

The World Food Summit in 1996 reinforced a multidimensional approach to food security: "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 2015b).

Tea, production, and exports generate foreign exchange and employment and provide a material base for national economic growth (FAO, 2015b). In particular, they make significant contributions to food security by helping to cover food import bills (ibid). According to FAO, (2015b), tea export earnings paid for 51 percent and 71 percent of Kenya and Sri Lanka's food import bills in 2011, respectively. Therefore, monitoring and analysing international tea trade is critical for policymakers involved with food security, trade, and rural development in developing countries (ibid).

2.4 Social sustainability

2.4.1 Labour Rights and Standards: Social Security

According to FAO, (2015), in India, legislation 1 obliges employers in the tea industry to provide social services to their workers and their families free of charge within the estate, including free housing, drinking

water, medical, education, childcare facilities, canteen, and recreational facilities. Firm tea prices in recent years have helped estate owners cope with the rising cost of production, but some still find the increase insufficient to cover the rising cost. A few of the less efficient estates have had to lay off some of their workers, resulting in rising unemployment and children leaving school as their families move to urban areas in search of work (ibid).

2.4.2 Social Services Provision

The increasing cost of mitigating climate change has begun to impact social facilities in estates raising some serious socio-economic issues related to working conditions on tea plantations that are critical in most producing countries. These include: how wages and low-quality housing; health and safety; declining workforce and part-time child labour; regular workers are re-employed on a casual or short-term basis; discrimination on gender; and diminishing representation of workers

2.4.3 Human-wellbeing

The well-being of millions of people across the world depends on tea as it is an antioxidant (Yang et al., 2009). The social importance of tea production is also significant in the vast networks of people who conduct their social gatherings and official meetings using the drinking of tea as part of the fabric of their gatherings (ibid). It is not just the tea consumers who benefit, but also growers, pickers, suppliers, traders, and sellers connected through business operations (ibid).

3.0 Conceptual Framework

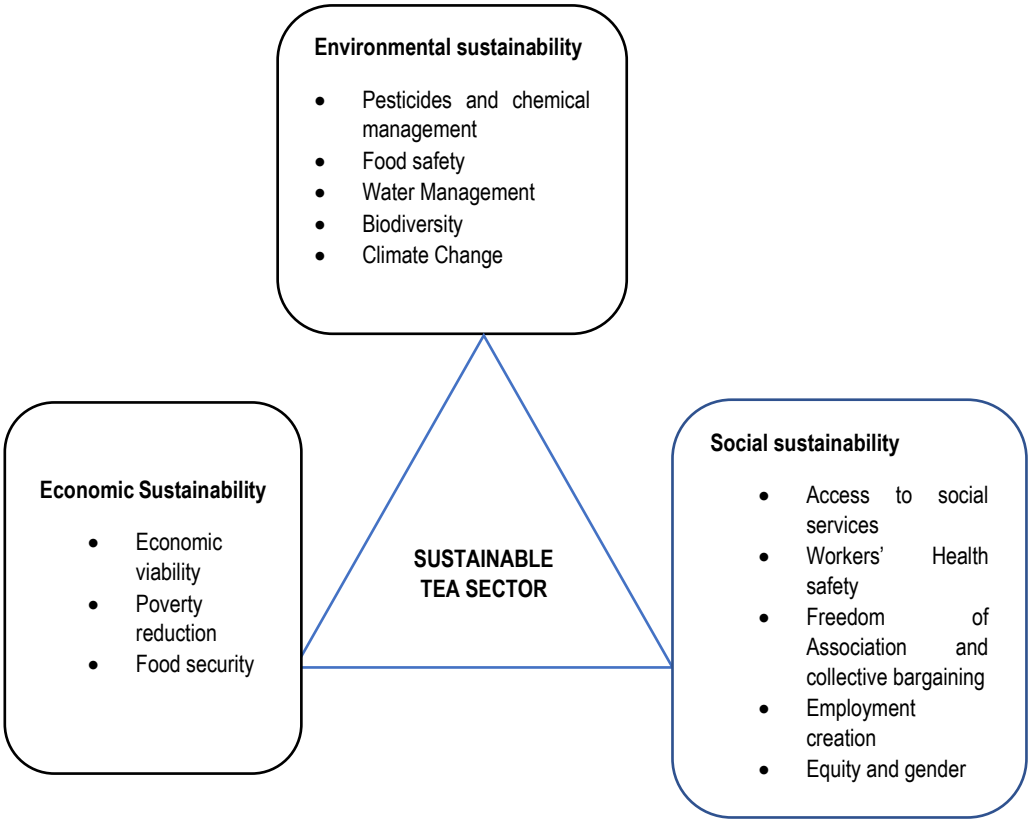


Figure 5: Conceptual Framework

Source: Modified from Omar, 2024

4.0 Methodology

This study combines quantitative and qualitative methods to enable a comprehensive understanding of the sustainability facets (economic, social, and environmental) of the tea sector in Tanzania. A purposive sampling technique was utilized to select key participants who have direct involvement and expertise in the tea industry. The sample included Estate workers (50); Smallholder farmers (100); and Industry Stakeholders (15). Focus Group discussions (2) and in depth interviews with top officials in tea estates and the Tanzania Tea Board (TTB), Tanzania Smallholders Tea Development Agency (TSHTDA), and the Tea Research Institute of Tanzania (TRIT) were also conducted. In addition to interviews, secondary data sources such as reports from the Ministry of Agriculture (MoA), the Tea Board of Tanzania (TTB), FAO publications and Academic literature, and comparative studies from other countries such as Sri Lanka, Kenya, India, and China on issues affecting tea industries were reviewed for their insights into how to approach the subject under study and support triangulation of data.

The quantitative data collected through surveys were coded and analyzed using statistical software (Excel). Qualitative data from interviews and focus group discussions were analyzed thematically. This involved coding responses into categories that captured common themes relating to economic viability, social conditions, environmental practices, and policy implications.

Ethical approval was obtained from relevant authorities before data collection. Participants were informed of the study's objectives, their rights to confidentiality, and their ability to withdraw from the study at any point. Informed consent was obtained before conducting interviews and focus groups, ensuring that participants understood their involvement and could choose to participate voluntarily.

5.0 Findings

5.1 Critical environmental issues

Pesticides and chemical use

In the interview, all respondents indicated that there is no use of pesticides in the Tea sector. A representative from Kwamkoro Tea Estates has indicated that,

“Tanzania tea is free of chemicals and pesticides”. Majority of smallholder farmers, the use of pesticides is very minimal. This has been attributed to the absence of pests in Tea plantations”.

Further to that, the Director of the TBT has claimed that,

“We have been taking several measures to reduce the use of dangerous chemicals. Some of the measures include the identification of all chemicals used by farmers; the Provision of training to tea farmers on the effects of the application of dangerous chemicals in tea farms; Providing Notice of a list of dangerous chemicals in each village growing tea; Prohibiting the agricultural agents from distributing chemicals that are hazardous in their input stores; and Conducting regular inspections in agriculture input stores and on tea farms”.

However, it was further claimed that,

“There is the only use of herbicide glyphosate with the rate of 3 litres per Ha during tea nurseries. Farmers mostly use the cultural and natural method”.

Fertilizer usage

While responding on the commonly used fertilizer an extension officer from TBT in Mufindi district (Mr. Robert Kanyawana) has indicated that,

“To boost production both estates and smallholder farmers have been using only inorganic fertilizers. Tea Estates use 12 bags of NPK per Ha, which is equal to 150 kg of Nitrogen per Ha, Smallholder tea farms

use 08 bags of NPK per Ha, which is equal to 100 kg of Nitrogen per Ha".

"The use of inorganic fertilizer is predominant. This has also been attributed to Private estates encouraging their out-grower to use inorganic fertilizers".

In another development, an Extension officer from Kwamkoro estates (Rose Moshi) in Muheza, Tanga has highlighted that,

"For the past three years now in the northern zone no fertilizers have been used in the tea fields both estates and smallholders. However, N25 P5 K5 were the most predominantly used inorganic fertilizers before."

Additionally, a representative from Bulwa estate while responding on the use of fertilizer indicated that,

"Inorganic fertilizer is the most commonly used fertilizer for both estates and smallholder farmers. Estates use four (4) bags of NPK while smallholder farmers use one (1) bag of NPK per Ha annually".

Although other studies like the one by The Malawi Centre for Advice, Research and Education on Rights (Malawi CARER), indicate an increase in production when organic and inorganic fertilizers are combined, this has never been tested and proven in Tanzania.

Agrochemicals and Food Safety

There has been inadequate insistence on food safety in the tea sector in Tanzania. While responding on the measures taken to ensure food safety in Tea production, a representative from the TBT has indicated that,

"There is not much that has been taken as a measure of ensuring food safety. For example, There is No program for Hazard Assessment on Critical Control Points provided to tea farmers. However, much of the training has been provided by tea extension officers in the field concentrated on Good Agricultural Practices to improve tea quality and increase tea productivity".

Additionally, in a Focus Group discussion, it was found that there are hygiene standards adhered to by both smallholders and estate farmers including farm cleanliness at various steps in the tea process cycle such as storage at buying centers, and during transportation of green tea leaf to the factory. Cleanliness in the tea processing facilities, safe storage, and packing to avoid contamination of any unwanted chemicals.

Water Management

During the interview, a researcher of Tea Research Institute has claimed that,

" Tea cultivation often requires significant water resources, which can lead to water scarcity issues in regions prone to drought." There has been inadequate efficient water management and rainwater harvesting practices in the tea sector". However, there are some noticeable water conservation practices including, contour farming, Construction of waterways, Marching, and Agroforestry".

Waste management

While responding on the waste management practices in Tea processing industries, a member from a tea factory has indicated that,

"Tea processing generates significant waste including stems and dust. However, there have been inadequate initiatives in all industries to ensure effective waste management practices such as waste Reduction, Reuse, and Recycling practices. This potentially contributes to environmental impacts such as greenhouse gas emissions and air pollution".

Further, a representative from TBT has indicated that,

"There are few initiatives in factories and tea farms on solid waste management through composting, recycling, and proper disposal practices. However, there are some initiatives on sensitizing smallholder farmers to collect all non-degradable waste such as polythene tube to a designated space for collection by the responsible authority through agreeable arrangements".

While responding to wastewater pollution, all representatives have indicated the existence of minimum water discharge in the tea industry. Consequently, that has made waste pollution less significant in the Tea sector.

Biodiversity loss and Soil health

While responding on the impact of tea cultivation on soil health, a representative from TBT has claimed that,

"There has been a monoculture practice in tea growing areas in the country. This has proven to degrade the soil's health, reducing its fertility and in some cases leading to soil erosion, consequently leading to biodiversity loss".

Energy Use and Climate Change Impact

During the Focus Group discussion, it was highlighted that fossil fuel is the most energy used in the tea industry, especially in the production and processing phases including withering, rolling, and dying, with little to no renewable energy. Respondents have also highlighted the reliance of traditional farming methods on fossil fuels for machinery and transport, which contribute to carbon emissions. However, It was indicated that the use of renewable energy in areas such as irrigation can help to reduce carbon footprints.

5.2 Critical Economic Issues

The assessment of economic sustainability includes economic viability (Fair pricing), Poverty reduction (fair wages and livelihoods diversification)) and food security (savings for withstanding shocks and stresses)

Fair pricing and sector stability

While responding on fair pricing and market access, a respondent from Tanzania Smallholder Tea Development Agency-TSHTIDA) has indicated that,

"Global tea prices have experienced fluctuations that affect the sector's investment. This has been attributed to changes in supply and demand, weather conditions, and geopolitical issues. Consequently, the tea prices declined, affecting investment in the sector whereby some factories have stopped operations including METL and others decided to sell their factories".

Additionally, smallholder farmers indicated not to have a say on the price of Green leaf.

" The buyers determine the price of tea. The prices for green leaf are not constant. We don't even know what makes the price fluctuate". Claimed by one of the respondents in Mufindi district

The Price of the Green leaf and the wellbeing of smallholder farmers

There have been mixed responses about the price of Greenleaf in covering the production cost in the tea industry. The production cost was found to be in the range of Tshs.850,000.00 to Tshs.2,248,704.00 for smallholder farmers and Tshs.1,500,000.00 to Tshs.2,845,000.00 for estates as indicated in Table 1.0.

Table 1.0: Estimated annual Cost of production per hector for selected Estates

Estates	Category	Cost of Productions
Bulwa	Smallholder farmers	Tsh.850,000.00
	Estates	Tshs.1,500,000.00
Kiganga	Smallholder farmers	Tshs.1,760,000.00
	Estates	Tshs. 2,845,000.00

Kwamkoro	Smallholder farmers	Tshs 2,248,704.00
	Estates	Tshs 2,248,704.00
Itona	Smallholder farmers	Tshs. 1,800,000.00
	Estates	Tshs.3,400.000.00

Table 1.0 shows the variation in annual production cost per hectare. However, the production cost for smallholder farmers was low compared to estates. The cost differences attributed to the use of inputs and management practices as indicated in the selected case of Kiganga estates in Table 2.0. Consequently, the average annual productivity of Greenleaf per hectare was 5000kg for smallholder farmers and 6500kg for estates as indicated in Table 2.0.

Table 2.0: Estimates Cost of production per year per Ha (Kiganga Estates and Smallholders in Muheza)

S/No.	Item	Cost (Tshs) in Estates	Cost (Tshs) in Smallholders
1.	Pruning	330,000.00	210,000.00
2.	Weeding	98,000.00	50,000.00
3.	Plucking	1,650,000.00	1,500,000.00
	Fertilizer	664,000.00	-
4.	Farm management	400,000.00	-
	Total	**2,845,000.00**	**1,830,00.00**

Additionally, a TBT respondent from Mufindi while responding on the adequacy of the Greenleaf price to cover the production cost has indicated that,

“The average price of Green leaf was found hardly to cover the cost of production for both smallholder farmers and estates. For example, the estimated total annual cost of production per ha for smallholder farmers has been 1,750,000Tshs and 2,845,000Tshs for Kiganga Estates. On the other hand, the Greenleaf tea sales per ha for smallholder farmers and estates have been Tshs.1,830,00.00 and Tshs.2,379,000.00 respectively.

Table 3.0: The estimated Revenue per ha for Smallholder and Estates in the 2023/24 Season in Mufindi

Category	Cost of Greenleaf per Kg in Tshs.	Produced kg/ha	Total (Tshs)
Smallholder	366	5000	1,830,00.00
Estates	366	6500	2,379,000.00

The revenue difference between smallholder farmers and estates is attributed to productivity differences. Estates produce a maximum of 6500kg per ha, while smallholder farmers produce a maximum of 5,000kg per ha. The increase in productivity for estates has been ascribed to the use of inputs, including fertilizers and farm management services, which are lacking in Smallholder farmers.

Wages of the Workers in the tea sector

Work on the tea plantations is highly intensive; however, the study found wages very low. The wages for smallholder farmers and estates in selected areas are presented in Table 4.0.

Table 4.0: Monthly Wages for Estate Workers and Smallholder Farmers

Respondents	Category	Cost of Productions
Bulwa Estates	Smallholder farmers	Tsh.250,000.00
	Estates	Tshs.350,000.00
Kiganga Estates	Smallholder farmers	Tshs.150,000.00
	Estates	Tshs. 200,000.00
Kwamkoro Estates	Smallholder farmers	Tshs 187,392.00
	Estates	Tshs 195,000.00
Tea Board of Tanzania	Smallholder farmers	Tshs. 140,000.00
	Estates	Tshs.185,000.00

From Table 4.0, in all estates the basic monthly wages for employees were found to be above the national minimum wage in the Agriculture sector which, is Tshs.140,000, as published by the Government Notice No. 687 of 2022 (the new Wage Order). However, such a wage claimed by respondents is insufficient to support their basic needs such as food, clothing, and shelter.

Other sources of income

This study found that smallholder farmers engaged in other livelihood activities to complement their income. The most common livelihoods found were horticulture and livestock keeping. However, while responding on the involvement of estate workers in other livelihoods activities a respondent from Kiganga estate has indicated that,

“Majority of the estate workers are not involved in other livelihood activities. They spent much of their time on estate farms. However, working in estates is accompanied by some other benefits such as housing and medical facilities which complement their income. This reduces the stress of fetching for additional income”.

This was also echoed by a representative from Kwamkoro estate who claimed that the majority of estate workers are not involved in other livelihood activities.

Savings practices

While responding to the savings attitude of the smallholder farmers and estate workers, all respondents have indicated that their income is very low to have part of their income remaining for saving. “This has made us prone to shocks and stresses in the sector such as price fluctuation of the Greenleaf and climate change”. Claimed by a representative from the Mufindi district.

5.3 Critical Social Issues

Freedom of Association and collective bargaining

Freedom of Association is stipulated in Article 6 (20)(1) of the Constitution of the United Republic of Tanzania. However, there was no specific Trade Union found to exist for the Tea sector. The collective

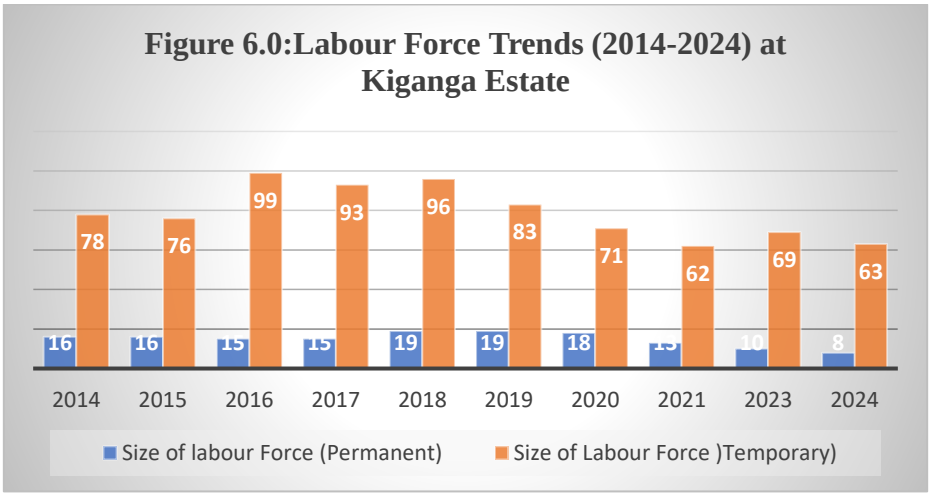
bargaining in the sector was found to be practiced through Cooperative Societies whereas, a total of 52 Cooperative Societies were found to exist countrywide. Further to that, the well-being of smallholder farmers was also found to be bargained through the Tanzania Plantation and Agricultural Workers Union (TPAWU), Tanzania Smallholders Tea Growers Cooperative Union (TASTEGCU), Tea Board of Tanzania (TBT) and Tanzania Smallholders Tea Development Agency (TSHTDA).

Employment

Employment was found to be among the most important impacts of the Tea sector in the Tea Producing Regions in Tanzania. While responding on the status of employment in the Tea sector, a representative from the tea board has indicated that the sector employs over 2 million people. For example, in 2024 Kwamkoro Estates provided a total of 450 employments of which 380 were temporary and 70 permanent employments.

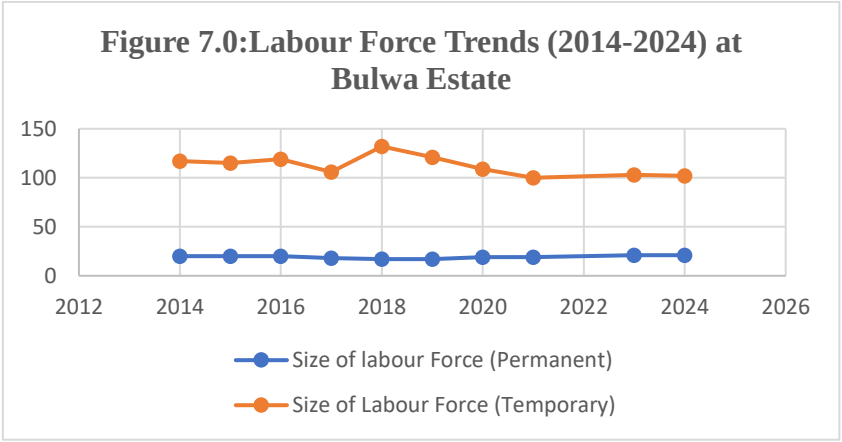
However, during the study, a decline in employment trends was found especially in Estates as indicated in Figures 6 and 7.

Figure 6.0:Labour Force Trends (2014-2024) at Kiganga Estate

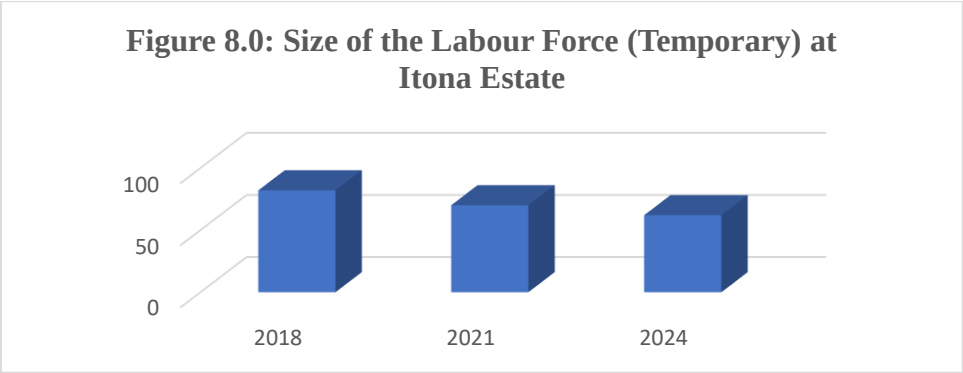


Source: Field survey (2025)

Figure 7.0:Labour Force Trends (2014-2024) at Bulwa Estate



Source: Field Survey (2025)



Source: Field Survey (2024).

Figures 6, 7, and 8 show general decline trends of the jobs in Itona (Mufindi), Bulwa (Tanga), and Kiganga (Mufindi) estates. Although in absolute numbers more temporary employees lost their jobs compared to permanent employees, percentage-wise the impact was felt more in permanent employees. The Kiganga Estate lost over 43 percent of temporary jobs in 2024 compared to 2019. On the other hand, over 53 percent of the permanent employees lost their jobs between 2019 and 2024.

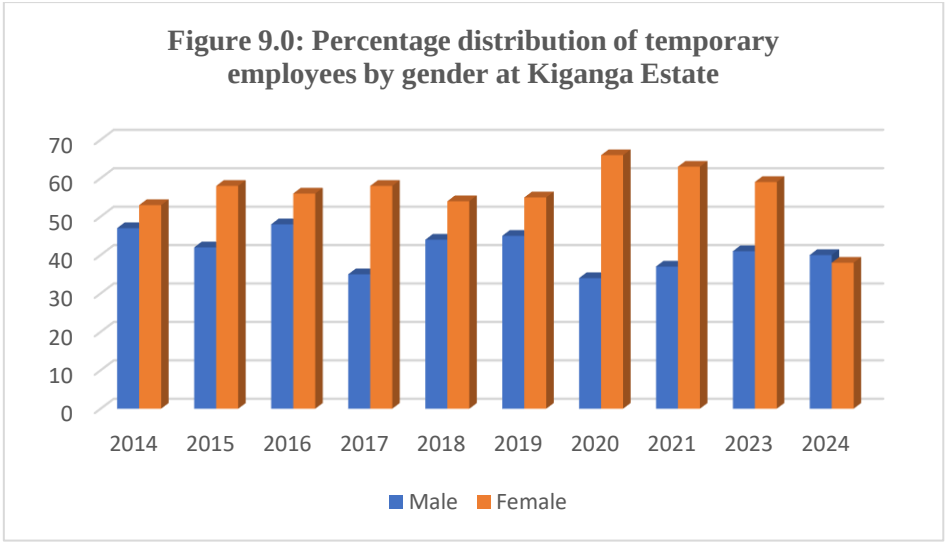
In the case of Bulwa estate over 32 percent of the temporary employees lost their jobs by 2024. On the other hand, Bulwa experienced a job increase of 4 percent of the permanent employment compared to previous years.

For the Itona estate, permanent jobs decreased from 82 to 62 between 2018 and 2024. This is over a 24 percent decrease. While responding on the reasons behind jobs decreased, Mr. Robert (a representative of the TTB) in Mufindi has highlighted that,

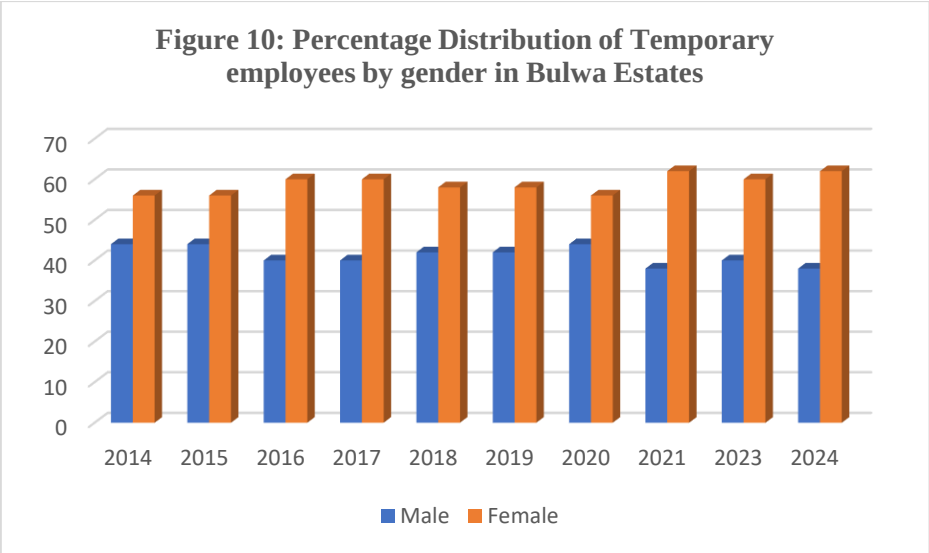
“This job decrease is very much associated with a decrease in tea production, emerging of new technologies and job opportunities in other areas such as Avocado cultivation and Chinese industries”.

Gender and equality

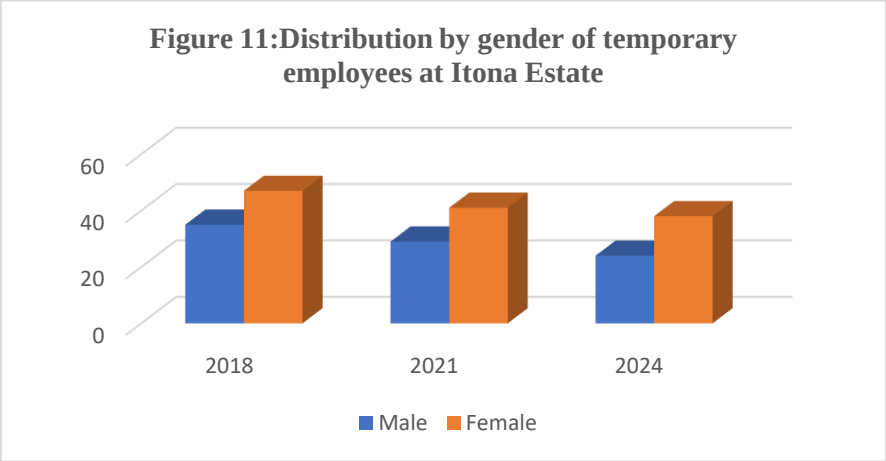
The Tea sector in Tanzania through the selected cases in this study found the dominancy of the sector by women as shown in Figures 9, 10, and 11.



Source: Field survey, (2025)



Source: Field survey, (2025)



Source: Field survey, (2025)

Further, in interviews with representatives from the TTB, the decrease in jobs has also been attributed to the increase in abandoned farms especially by smallholder farmers as indicated in Table 5.

Table 5: Abandoned farms by Smallholder farmers

S/No.	District	Farm Size(ha)
1.	Mufindi	319
2.	Lupembe	1,765
3.	Tarime	27
4.	Bukoba	53
5.	Rungwe	50
6.	Korogwe	214
7.	Lushoto	429
8.	Muheza	97
	Jumla	**2428**

Source: Field survey, 2025

Access to Social benefits

The study assesses the access of Estate workers and smallholder farmers to social services, especially Education, Medical services, Housing, Meals, Insurance, and Capacity building.

Table 6: access to social benefits by Estate Workers

Estates	Education	Health	Housing	Meal	Insurance	Capacity building
Bulwa	No	No	No	No	No	Yes
Itona	Yes	No	Yes	Yes	No	Yes
Kwamkoro	No	Yes	Yes	No	No	Yes
Kiganga	No	Yes	Yes	Yes	No	Yes

Source: Field survey (2025).

As indicated in Table 6, 100% of the estate respondents were found to provide capacity-building services to their workers. However, for all respondents, the capacity-building only concentrated on Tea harvesting techniques.

Although various risks accompanied workers working estates, none of the respondents were found to provide insurance services to their workers. Additionally, 75% of the respondents were not providing education services to their workers and surrounding communities. Only **Itona** estates were found to support a nursery school in the community around the estate. Furthermore, 75% and 50% of the respondents were to provide housing and Meals to their employees respectively.

Occupational health and safety

The study found a high degree of compliance with occupational health and safety standards including wearing protective gear such as gumboots, apron, gloves, respirators, and goggles. All respondents have indicated compliance with safe gear requirements as required by the Occupational Health Safety Acts, of 2003, and The Tea Regulations of 2010.

6.0 Conclusion

Sustainability which embodies environmental, social, and economic aspects is a pivotal factor in ensuring the success of the Tea sector in Tanzania. Economically, the tea sector provides livelihoods for thousands of smallholder farmers. However, most participants reported insufficient pricing for their produce to cover production costs, leading to persistent poverty and limited economic security. The disparities in earnings between smallholder farmers and large estates were pronounced, reflecting systemic issues in market access and bargaining power. Notably, the lack of fair pricing mechanisms perpetuates this cycle of underperformance. The situation is aggravated by, The low productivity of small-scale producers compared to the one for tea estates. This is mainly driven by different farming practices undertaken by these producers.

Socially, there have been deficiencies in social benefits, access to education, and health services for workers, contributing to a deteriorating quality of life. Gender dynamics within the sector also warrant attention as despite a predominance of women in tea production, their contributions often remain undervalued, with men holding more decision-making power.

Environmental sustainability poses additional concerns. Issues such as pesticide use, water management, waste management, and biodiversity loss are exacerbated by a lack of adoption of sustainable agricultural

practices. As climate change impacts intensify, the resilience of the tea sector is increasingly threatened, underscoring the need for adaptive strategies and enhanced environmental stewardship.

7.0 Recommendations

1. The Tea Board of Tanzania in collaboration with relevant stakeholders develops structured training programs that focus on enhancing strategic, effective, and transformational leadership practices for estate leaders and cooperative workers, including fostering innovation; branding; embracing digital transformation; employee engagement to improve factory performance; global market trends to navigate market uncertainties; and prioritization of sustainability, for enhancing competitiveness in the tea sector. Such training programs should be tailored to equip leaders with the skills and knowledge necessary to explore new product ideas, develop unique blends, invest in research and development, and navigate the complexities of the global tea market;
2. Promote Products diversification by encouraging farmers to produce value-added products, including organic, flavored, packaged teas, herbal blends, and ready-to-drink teas. This can help stabilize prices and increase profitability while reducing dependency on bulk tea exports, which are vulnerable to price fluctuations and geopolitical risks;
3. The Tea Board of Tanzania should develop financial incentives for smallholder producers who wish to switch to growing other tea varieties or higher-yielding clones. This will lead to a diversified portfolio, making the sector more profitable given that specialty teas fetch higher prices.
4. The Tea Board of Tanzania should incentivize Factories to diversify their product range by increasing the processing of other tea types such as specialty teas and tea extracts to earn more income as specialty teas fetch higher prices.
5. Enhancing collaboration across the value chain to improve efficiency and quality standards. Effective value addition requires seamless coordination among growers, processors, exporters, and marketers. Encouraging partnerships and knowledge-sharing across the value chain can streamline processes, reduce waste, and ensure that high-quality standards are maintained throughout production. Collaborative efforts can also help address common challenges, such as supply chain inefficiencies and resource limitations, fostering a more resilient industry;
6. Developing branding and marketing strategies to place Tanzania tea as a top product in high-value markets. This may include creating compelling narratives around the tea's tradition, quality, and exclusive characteristics through Digital marketing platforms, storytelling techniques, and strategic partnerships with global distributors which can amplify Tanzania's brand to lucrative markets such as Europe and North America;
7. Enhancing farmers' capabilities through training and support in advanced practices and market understanding to attain consumer preferences, and achieve necessary certifications;
8. Enhancing Cooperatives to improve bargaining power, collective marketing, and access to financing;
9. Intercropping tea with other tree crops, such as Avocado, rubber, and/or other food crops. Shade trees provide the dual benefit of protecting the tea plants. As the tree matures, it can be used as fuel to dry the tea. Food crops, on the other hand, provide food and/or income to the farmer. Soil could also be improved by intercropping with nitrogen-fixing crops, such as beans. Non-nitrogen-fixing crops, such as cassava, however, absorb nutrients from the soil and would contribute to soil deterioration;
10. The Tea Board of Tanzania should incentivize Factories to diversify their product range by increasing the processing of other tea types such as specialty teas and tea extracts to earn more income as specialty

teas fetch higher prices.

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