

Structural, Policy, and Market Drivers of Deterioration in Tanzania's Tea Sector: A Value Chain Analysis

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ABSTRACT

Tanzania's tea industry is a historically significant contributor to the country's agricultural export economy, generating an estimated USD 45–50 million in export revenues annually and sustaining the livelihoods of over 32,000 smallholder farming households and more than two million people indirectly. Despite this foundational role, the sector has experienced sustained, deepening deterioration, characterised by declining productivity, fragmented value chains, opaque pricing mechanisms, weak institutional governance, and growing climate vulnerability. This manuscript presents a comprehensive value chain analysis of the structural, policy, and market drivers underpinning the observed decline of Tanzania's tea sector. Drawing on a synthesis of peer-reviewed literature, sector reports, and recent policy documentation, the analysis maps the tea value chain from primary production through processing, marketing, and export, identifying critical bottlenecks at each node. The manuscript further examines how asymmetric power relations between smallholder farmers and downstream buyers perpetuate inequitable value distribution, and how policy and institutional failings, including delayed farm-gate payments, non-transparent pricing of green leaf tea, and insufficient regulatory enforcement, have compounded these structural weaknesses. The interaction of market and institutional constraints with climate variability is also assessed. The manuscript concludes with evidence-based recommendations for reform, including strengthening cooperation, transparent pricing frameworks, investment in irrigation and processing infrastructure, value addition, and market diversification strategies. The findings underscore the urgency of coordinated policy action to restore competitiveness, equity, and sustainability across Tanzania's tea value chain.

Keywords: Tanzania Tea Sector, Value Chain Analysis, Smallholder Farmers, Green Leaf Pricing, Policy Reform, Climate Resilience, Market Governance

Introduction

Tea (*Camellia sinensis*) is one of the oldest and most widely consumed beverages in the world after water, with a history of more than 5,000 years and recognised health benefits (Andra-Warner, 2022). Globally, the tea industry plays an important role in economic development, employment, and international trade. Tea production supports more than 13 million people worldwide and generates over USD 18 billion annually [1,2]. Global tea consumption reached about 6.7 billion kilograms in 2022 and is expected to continue increasing due to rising demand, especially among younger consumers [3]. Smallholder farmers contribute nearly 60% of global tea production and play a key role in supporting rural livelihoods and food security [4,1].

Tanzania is among the major tea-producing countries globally. Tea is an important cash crop in the country, contributing

significantly to export earnings, employment, and rural livelihoods. The sector supports more than 50,000 workers directly and benefits around two million people indirectly, including about 32,000 smallholder farmers [5,6]. In recent years, the tea industry has generated approximately USD 45–50 million annually from both domestic and international markets [7]. Tea production in Tanzania is carried out by both large estates and smallholder farmers, with smallholders managing nearly half (about 48–49%) of the total tea-growing area [5,7].

Despite its importance, the Tanzanian tea sector faces several challenges that limit its growth, competitiveness, and sustainability [8]. Many of these challenges are linked to structural weaknesses in production, processing, and marketing systems. Smallholder farmers, who dominate the sector, often operate on small plots of less than one hectare. They have limited access to quality inputs, face unstable pricing systems, and are poorly integrated into value-adding activities [7,9]. High production costs, weak supply chains, and inconsistent product quality further reduce their ability to compete in high-value

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markets [10]. In addition, the tea value chain is characterized by power imbalances, where buyers and intermediaries control pricing and market access, limiting farmers' bargaining power [8].

Institutional and policy-related challenges also contribute to the slow development of the sector. These include delayed payments to farmers, lack of transparency in price setting, and weak enforcement of regulations [11]. Similar issues have been observed in other agricultural sectors, such as coffee in Rwanda, where weak governance has led to low farm-gate prices and reduced incentives for farmers [12]. The Government of Tanzania has acknowledged these problems and initiated reforms aimed at improving coordination, transparency, and fairness in the tea sector [13].

Climate change adds another layer of challenge. Changes in rainfall patterns, longer dry seasons, and rising input costs are negatively affecting tea yield and quality. In some tea-growing regions, the dry season has increased from about five months to nearly seven months, threatening production stability [9]. These environmental pressures, combined with economic and institutional challenges, reduce farmers' ability to cope with risks and affect the long-term sustainability of the sector.

Despite these challenges, there are positive developments in the tea industry. Investments in new processing factories, increased private sector involvement, and international development programs such as Agricon Boresha Chai are supporting improvements in production and market access [14,15]. The Government of Tanzania has also set a target to increase tea production to 90 million kilograms by 2030 [16].

Given this context, there is a strong need to better understand the key factors affecting the performance of Tanzania's tea sector. This study aims to analyse the structural, market, and policy-related drivers influencing the tea value chain. The findings are expected to provide useful insights to support policy reforms, improve stakeholder participation, and promote sustainable growth in the sector.

Methodology

This study adopts a systematic narrative review approach to examine the structural, policy, and market drivers shaping the performance of Tanzania's tea sector. A narrative review was considered most appropriate given the multidisciplinary nature of the research problem, which spans economic, institutional, environmental, and agronomic dimensions. Unlike meta-analytic approaches that focus on quantifying a single outcome, this method allows for the integration of diverse forms of evidence and the development of a holistic understanding of complex sectoral dynamics. The analysis is conceptually anchored in the Global Value Chain (GVC) framework developed by, which provides a structured lens for examining how value, power, and governance are distributed across different stages of an agricultural commodity system [17].

A comprehensive literature search was conducted between January and April 2025 across five major databases: Scopus, Web of Science, Google Scholar, AgEcon Search, and the FAO publications repository. The search strategy combined

key thematic clusters using Boolean operators, including commodity-specific terms (e.g., tea, *Camellia sinensis*, tea industry), geographic identifiers (Tanzania, East Africa, Sub-Saharan Africa), analytical constructs (value chain, market governance, agri-food systems), and sector-specific drivers (smallholder, pricing, policy, climate, auction, farm-gate price). No strict temporal restriction was imposed in order to capture both historical evolution and contemporary dynamics; however, emphasis was placed on literature published after 2010 to ensure policy relevance. To enhance coverage, additional sources were identified through backward and forward citation tracking of seminal and frequently cited works.

The selection of sources followed clearly defined inclusion and exclusion criteria. Studies were included if they focused on Tanzania's tea sector or provided directly comparable insights from East African contexts, and if they addressed at least one of the following analytical dimensions: structural production constraints, market and pricing dynamics, institutional governance, or climate-related vulnerabilities. Eligible sources comprised peer-reviewed journal articles, working papers from reputable institutions, official government publications, and substantive reports from recognized development organizations. Sources lacking empirical or analytical rigour, such as unverified opinion pieces or unsupported media reports, were excluded. In total, 38 sources met the inclusion criteria and were incorporated into the analysis.

The analytical framework is based on the four-dimensional governance model of Gereffi et al., which evaluates value chains in terms of transaction complexity, codifiability of information, supplier capability, and the degree of explicit coordination [17]. Applied to Tanzania's tea sector, this framework facilitated a structured examination of how power asymmetries, institutional inefficiencies, and information gaps manifest across six key nodes: input supply, primary production, processing, auctioning and export, secondary processing and blending, and final consumption. To complement this, a value distribution analysis was conducted by synthesizing data on farm-gate prices, processing margins, auction outcomes, and export values, drawing from sources such as the Tea Board of Tanzania, FAO commodity reports, and peer-reviewed studies. Power relations within the chain were assessed qualitatively through evidence on pricing mechanisms, payment systems, farmer bargaining capacity, and certification participation.

Data extraction followed a structured thematic approach using a standardized matrix capturing key study characteristics, including authorship, publication year, geographic focus, methodological approach, principal findings, and policy implications. The synthesis was conducted using the thematic analysis method outlined by Thomas and Harden, beginning with inductive coding of findings into descriptive themes, which were subsequently organized into higher-order categories aligned with the study's analytical dimensions. To enhance robustness, findings were triangulated across multiple source types, including academic literature, grey literature, and policy documents such as the Tanzania Tea Industry Development Strategy 2025–2035. Where inconsistencies arose, differing perspectives were critically examined against corroborating evidence from independent sources.

Finally, the quality and reliability of included materials were assessed using a modified version of the Critical Appraisal Skills Programme (CASP) checklist adapted for mixed-method reviews. Peer-reviewed studies were evaluated based on methodological rigour, transparency, and sample adequacy, while grey literature was assessed according to institutional credibility, data recency, and clarity of methodology. Sources deemed lower in quality were retained only for contextual background and were not used to support core analytical conclusions. This rigorous and integrative methodological approach ensures that the findings presented are both analytically robust and grounded in a comprehensive evidence base.

Conceptual Framework: Value Chain Analysis

A value chain framework is useful for understanding the problems affecting Tanzania's tea sector. It looks at all the steps involved in moving tea from production to the final consumer. This includes production, processing, marketing, and distribution. It also helps identify the key actors involved, how decisions are made, and how value and risks are shared across the chain [17]. In agriculture, including tea production, this approach helps explain how power differences, market conditions, and institutions affect who benefits most and who is disadvantaged [18].

In Tanzania, the Tea Value Chain has Six Main Stages:

- Input supply and primary production, predominantly by smallholder farmers and large estates;
- Green leaf harvesting and transport to processing factories;
- Primary processing into made tea;
- Auctioning and export via the Mombasa auction system or the emerging Dar es Salaam digital auction;
- Secondary processing, blending, and packaging; and
- Final consumption in domestic and international markets.

Challenges such as poor governance, unclear pricing, and inequality occur at different stages, so it is important to analyse each stage separately to find suitable solutions.

Value chains can be organised in different ways, ranging from simple market transactions to more controlled systems [17]. In Tanzania's tea sector, smallholder farmers have little power to negotiate prices or choose buyers, which shows a "captive" system at the farm level. At the same time, the auction system exposes the sector to global price changes. This combination makes farmers vulnerable while giving more power and profits to processors, traders, and international buyers [19].

Results and Discussion

The thematic synthesis of included literature reveals four interconnected categories of drivers responsible for the sustained deterioration of Tanzania's tea sector: structural production constraints, market and pricing dynamics, policy and institutional failures, and climate vulnerability. These categories are not mutually independent; rather, they interact in ways that amplify their individual impacts and compound sectoral vulnerability. Each is examined in detail below.

Structural Drivers of Deterioration

Smallholder Farm Structure and Productivity Constraints

Smallholder farmers account for approximately 48.7% of Tanzania's total tea-growing area, concentrated in the highland

regions of Iringa, Njombe, Mbeya, Tanga, Kagera, and Mara [7]. Despite their numerical dominance, these producers operate under structural conditions that severely limit productivity and income. The overwhelming majority cultivate plots of less than one hectare, a scale at which the unit costs of inputs, agronomic services, and quality certification are economically prohibitive relative to output value [20,21]. This structural fragmentation perpetuates a low-productivity equilibrium in which insufficient income discourages the investments in replanting, fertilisation, and management that would be necessary to raise yields.

The consequences are quantifiable and severe. Tanzania's annual tea production ranges between 26,000 and 32,000 metric tonnes, constrained by an ageing bush population, inadequate replanting rates, limited fertiliser access, and the compounding effects of climate variability [7,22]. Farmers receive an average price of approximately TZS 366 (USD 0.15) per kilogram of green leaf, a price that many producers report as insufficient to cover their full production costs [17]. The capital intensity of establishing new tea gardens, combined with the multi-year gestation period before productive harvesting can begin, further discourages fresh investment and smallholder entry, particularly for younger farmers who have access to alternative cash crops such as avocado that offer shorter return horizons (Sustainability Assessment of the Tea Industry in Tanzania, 2025).

Human capital constraints compound these structural limitations. Educational attainment, access to extension services, and cumulative farming experience are significant positive predictors of smallholder productivity, yet access to quality extension services remains severely restricted across most tea-growing districts [21]. The resulting knowledge gap translates into suboptimal agronomic practices, contributing to yield gaps between actual and attainable productivity. A generational succession challenge is also emerging: the relative attractiveness of alternative livelihoods is drawing younger workers away from tea cultivation, threatening the medium-term supply of farm labour and the continuation of smallholder enterprises (Sustainability Assessment of the Tea Industry in Tanzania, 2025).

Processing Capacity and Post-Harvest Constraints

Tanzania's primary tea processing infrastructure is chronically underperforming. Of the country's 23 tea processing factories, only 19 are fully operational, with others having suspended operations due to financial distress, management failures, or equipment deterioration [7]. This capacity deficit generates acute bottlenecks during peak harvest periods, when the volume of incoming green leaf exceeds the available processing throughput. Given that green leaf must be processed within approximately six hours of harvesting to preserve biochemical quality, unprocessed leaf rapidly deteriorates, resulting in tangible post-harvest losses and reduced quality of the eventual processed tea.

The dependence on proximity to operational factories also structurally constrains farmers' bargaining power. Where a single factory constitutes the sole accessible buyer for green leaf within a given radius, the market for the farmer is effectively monopsonistic: the factory sets the terms, and the farmer must accept them or face total loss of the harvested crop. This market structure is a direct expression of the captive governance typology identified in the conceptual framework. The closure

of the DL Company factory in Mufindi, which occurred while the company owed substantial sums to farmers and workers, illustrates the severity of risks this structure imposes on producers [8]. Such incidents erode farmer confidence in the contractual reliability of the processing sector and reduce willingness to invest in productivity.

Technological obsolescence further undermines the sector's competitive position. Many operational factories continue to use ageing processing equipment that constrains product quality, energy efficiency, and output consistency. Modernization has been impeded by the dual constraints of low auction prices, which reduce the cash flows available for capital investment, and the declining budgets of key sector support institutions, including the Tea Board of Tanzania, the Tea Research Institute of Tanzania, and the Tanzania Smallholders Tea Development Agency [23]. This underinvestment trap is self-reinforcing: low auction realization's reduce investment capacity, while outdated technology perpetuates quality limitations that constrain access to premium market segments.

Additionally, Tanzania's tea export performance has shown a sharp decline in recent years, reflecting challenges within the value chain. According to, in 2019, the country exported 31,660 tonnes of tea, but by 2024 this figure had fallen to 15,743 tonnes (figure 1), representing a reduction of nearly 50 percent [24]. This downward trend signals not only reduced competitiveness in international markets but also possible structural issues at the farm and processing levels, including declining productivity, factory closures, and limited investment in modernization. The contraction in production and export volumes undermines foreign exchange earnings and highlights the urgent need for strategic interventions to revitalize the tea industry and restore Tanzania's position in the regional and global tea trade.

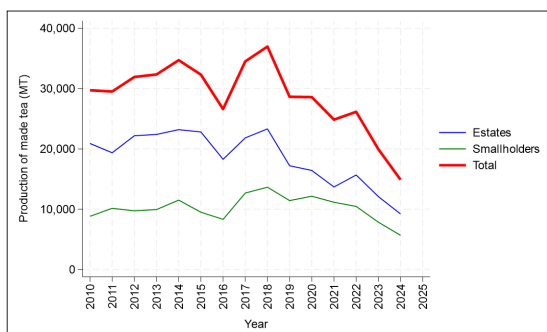


Figure 1: Tea Production Trend in Tanzania
Source: Computed from Tea Board of Tanzania (2025) Data

The Tanzanian tea sector is experiencing a sustained decline in both production and exports. Farmers are increasingly abandoning tea farms and switching to alternative crops. The recent reports, such as MoA indicate factory closures for example, aabout 13 factories with a capacity of 34,510 tons of green leaf capacity closed in 2025/2026 [25]. This situation may reflect deep, interconnected structural, market, and institutional challenges along the tea value chain that affect Tanzanians' performance in regional and international tea markets.

The analysis of annual growth rates revealed a sharp contraction in tea production during the 2024/25 season, with smallholders experiencing the steepest decline at 28% and estates recording

a 24% reduction, indicating systemic challenges across both production groups and highlighting the greater vulnerability of smallholders (Figure 2).

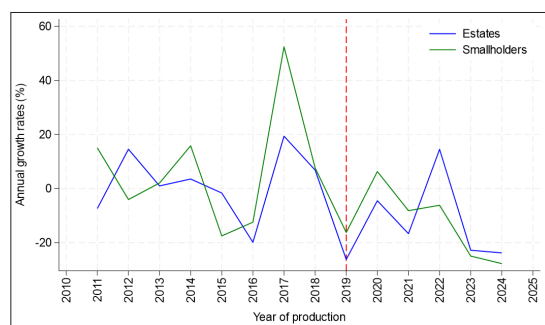


Figure 2: Annual Growth Rates of the Tanzania Tea Sector
Source: Computed from Tea Board of Tanzania (2025) Data Using a Discrete Growth Rate Model

The effects of this decline are significant. Export volumes declined by around 50%, weakening Tanzania's foreign exchange earnings, while falling farm incomes have undermined rural livelihoods. Employment opportunities in tea estates and factories are shrinking, and the country's competitiveness in regional and global tea markets is eroding.

Previous studies such as Kachenje et al., Dogeje and Ngaruko, Mkumbukiy et al. and Mdoe et al. has reported various challenges at various stages of the tea value chain [6, 26, 27]. At the production level, smallholder farmers face low productivity, high input costs, and limited access to extension and credit services. At the market level, declining global tea prices and dependence on auction systems reduce profitability. At the institutional level, opaque pricing mechanisms, delayed payments, and weak coordination among regulatory bodies undermine efficiency and trust. The tea value chain is characterized by power imbalances, where processors and traders dominate pricing decisions, leaving farmers with minimal bargaining power. Climate variability further exacerbates the situation by reducing yields and quality.

Input Access, Labour, and Working Capital Constraints
 Smallholder tea farmers in Tanzania operate under chronic working capital constraints that perpetuate a cycle of underinvestment. Production costs encompass both fixed charges, land maintenance, infrastructure upkeep and variable costs, including fertilizers, herbicides, pruning, plucking labour, and transport [7]. Most smallholders lack the liquid capital to meet these costs reliably, relying primarily on family labour during normal operations and hiring casual workers only during peak harvesting periods. Critically, payment delays from processing factories in some documented cases extending several months disrupt the cash flow cycle upon which input purchasing and labour hiring depend [8, 21].

Access to formal credit remains structurally limited for smallholder farmers. The combination of insecure land tenure limiting collateralizable assets, and the seasonal, variable nature of tea income makes this population unattractive to commercial lenders under conventional loan assessment criteria [21, 28]. Input subsidy programmes, which could partially compensate for credit market failures, are insufficiently developed and inconsistently implemented. Meanwhile, the prices of key agricultural inputs,

particularly mineral fertilizers and transport services, have risen sharply in response to global supply chain disruptions and currency depreciation, compressing production margins further. Input cost inflation has consistently outpaced green leaf price increases over recent years, rendering smallholder tea production increasingly economically marginal [9].

Market Drivers of Deterioration

Global Price Volatility and the Auction System

Tanzania's tea sector is fundamentally price-exposed through its dependence on the Mombasa Tea Auction, the dominant pricing mechanism for East African bulk tea. Over the past three decades, auction prices have exhibited both high volatility and a pronounced downward structural trend, declining from approximately USD 2.50 per kilogram in the early 2000s to approximately USD 0.74 per kilogram in recent years [7]. This price trajectory reflects a structural deterioration in the terms of trade for bulk commodity tea, driven by oversupply conditions associated with rapid production expansion in China, Kenya, and India, combined with stagnating demand growth in traditional importing markets [23].

The impact of declining auction prices is transmitted with particular severity to smallholder farmers at the base of the value chain. Because the farm-gate price for green leaf is mechanically derived from auction realisations — typically as a formula-based share — any downward movement in auction prices directly compresses the already thin margins of smallholder producers. As prices fall toward or below full production costs, farmers face explicit disincentives to maintain or expand production, and some abandon their gardens entirely [7]. This supply-side erosion may generate a self-reinforcing downward cycle: declining supply reduces the scale economies available to processors, raising unit processing costs and further squeezing the residual value available for distribution as farm-gate payments.

The global demand landscape is also undergoing a structural transformation that presents both challenges and opportunities for Tanzania. In traditional importing markets, notably Western Europe and North America, overall tea consumption has plateaued or declined as consumers migrate toward speciality, premium, and cold-beverage alternatives [23]. Conversely, demand is growing in Asian, Middle Eastern, and African markets. However, Tanzania has thus far been unable to fully capitalise on these emerging market opportunities, constrained by limited trade networks, inadequate logistics infrastructure, and an over-reliance on the bulk commodity export model that generates the lowest-tier value realisations.

Power Asymmetry and Value Distribution

A defining and persistent feature of Tanzania's tea value chain is the severe asymmetry in market power between smallholder producers and downstream chain actors. Because individual smallholder farmers typically supply a single nearby processing factory, the only accessible buyer of perishable green leaf within a reasonable transport radius, they possess negligible negotiating leverage over price, payment terms, or contractual conditions [19, 20]. Factories exploit this structural monopsony to set farm-gate prices that may not fully reflect actual production costs, systematically transferring economic value upstream in the chain at the expense of primary producers.

Certification schemes, including Fairtrade, Organic, and Rainforest Alliance certifications, represent one mechanism through which more equitable value distribution might in principle be achieved. In practice, however, their impact in Tanzania remains circumscribed. Only a modest proportion of certified tea is actually transacted through premium certification channels; the majority continues to be sold through the conventional auction system at standard commodity prices [20]. The premium benefits of certification are therefore partially dissipated by the market structure, failing to translate into the full income improvements for farmers that the certification model promises.

The Mombasa auction mechanism further amplifies value leakage from Tanzania's chain. The multi-layered intermediation structure encompassing brokers, agents, shipping companies, and international trading houses captures a substantial portion of the difference between Tanzania's farm-gate prices and final retail prices in consuming countries. In response to these structural deficiencies, the Government of Tanzania has established a digital tea auction and warehouse system in Dar es Salaam, with the intention of reducing intermediation costs, improving price transparency, and diminishing dependence on the Mombasa system [9]. The long-term effectiveness of this reform will depend on its institutional operationalization and the degree to which it succeeds in attracting competitive international buyer participation.

Quality Challenges and Market Access Limitations

Inconsistent and insufficiently differentiated product quality constitutes a significant barrier to Tanzania's access to premium market segments. Quality deficiencies originate at multiple points in the chain: suboptimal plucking standards at the farm level, where economic pressure incentivises quantity over quality, are compounded by delays in green leaf transport to factories, processing with ageing and imprecisely calibrated equipment, and inadequate quality control and grading protocols within factories [7]. The cumulative effect is a product profile that commands only commodity-tier prices in international markets, precluding access to the premium and speciality segments where per-unit realisations are substantially higher.

Smallholder farmers are particularly disadvantaged in this quality dynamic. Because they supply raw green leaf to factories they do not own or control, they have no direct influence over the processing decisions, temperature, oxidation time, and grading that ultimately determine the quality and market grade of the finished product. Their income is thus determined by factory-level decisions over which they have no governance stake. Efforts to address quality at the production level through the development and dissemination of improved tea varieties, including the drought-tolerant, high-yield lines TRF 303/178 and TRIT 201/55, are underway but have achieved limited adoption rates to date, constrained by inadequate extension reach, limited availability of certified planting materials, and the financial disincentive of the multi-year replanting transition period [23].

Policy and Institutional Drivers of Deterioration

Green Leaf Pricing Mechanisms and Payment Delays

The determination of green leaf tea prices in Tanzania represents one of the most contentious and consequential governance

failures in the sector. The current government-administered indicative price of approximately TZS 360 per kilogram is contested by both factory operators, who argue it is unsustainably high relative to their auction realisations, and by farmers, who consistently report that it fails to cover full production costs — a position supported by independent cost-of-production estimates [7, 8]. This unresolved tension reflects the absence of a credible, independent, and transparent cost-verification mechanism capable of producing a price formula that adequately balances the legitimate commercial interests of processors with the economic sustainability requirements of producers.

The pricing process suffers from structural opacity. The methodology by which farm-gate prices are derived from auction outcomes is not publicly disclosed in sufficient detail to allow independent verification by farmer representatives. Factory operators possess informational advantages over individual farmers regarding auction price trends, processing cost structures, and market conditions, advantages they can exploit within the existing institutional framework [8]. In April 2025, Tanzania's Minister of Agriculture directed the Tea Board of Tanzania to commission an independent study of the true cost of green leaf tea production, a constructive institutional response that, if implemented rigorously and with full farmer-representative participation, could constitute a significant step toward pricing transparency [29].

Payment delays represent a compounding institutional failure that operates in parallel with pricing disputes. Documented cases indicate that some processing factories retain farmer payments for periods of several months, in some cases accumulating substantial payment arrears before factory closures have crystallised these as total losses [8]. These delays disrupt the working capital cycles of smallholder households, forcing farmers to absorb input costs in the absence of expected income, and fundamentally undermine the trust relationships necessary for a functional contracting environment.

Weaknesses and Coordination Failures

Tanzania's tea sector is subject to oversight by multiple regulatory and support institutions — principally the Tea Board of Tanzania (TBT), the Tanzania Smallholders Tea Development Agency (TSHTDA), and the Tea Research Institute of Tanzania (TRIT). The mandates of these institutions are complementary, but their coordination remains fragmented, a structural weakness that generates gaps in service delivery, duplicated bureaucratic burdens, and inconsistent regulatory enforcement [23]. Budget constraints across all three institutions have progressively curtailed their operational capacity over the past decade, reducing the quality and geographic reach of research outputs, extension services, and market information dissemination.

Earlier reform cycles, including liberalization measures implemented in the 1990s and 2000s, achieved measurable but temporary gains in production volumes and quality before their impetus dissipated in the absence of sustained institutional support and accountability mechanisms [30]. The persistence of identical governance problems, price opacity, payment arrears, and weak farmer organization across successive reform cycles suggests that these issues are structurally embedded rather

than incidental, and will require institutional redesign rather than incremental adjustment. The evidence consistently shows that effective value chain governance requires information transparency, balanced power between chain actors, and robust enforcement capacity, conditions that remain substantially unmet in Tanzania's current institutional architecture [18].

Taxation, Trade Policy, and Competitiveness

Fiscal and trade policy instruments have also contributed to constraining the competitive position of Tanzania's tea sector. Highly effective taxation rates, procedural regulatory burdens, and trade restrictions have imposed costs on the sector that reduce its attractiveness for private investment and its competitiveness in regional and international markets [30]. The paradox of significant import penetration by processed tea from neighboring countries in a market nominally protected by import restrictions suggests that domestic production has failed to meet consumer quality and price expectations across significant market segments, pointing to supply-side failures as much as demand-side dynamics.

The launch in 2024 of a national digital tea auction platform and the associated development of a regional trading hub infrastructure in Dar es Salaam represent strategically important institutional investments with the potential to materially reposition Tanzania within East African and international tea trade flows [9]. The realization of this potential is not automatic, however. It will require sustained investment in complementary infrastructure — including cold chain logistics, warehouse management systems, and quality verification capacity — as well as deliberate and well-resourced institutional capacity building to establish the credibility and liquidity necessary to attract competitive international participation.

Climate and Environmental Drivers

Climate variability and change constitute an increasingly material and less tractable dimension of Tanzania's tea sector crisis. Tea cultivation is concentrated in highland agro-ecological zones where temperature stability and reliable bimodal rainfall patterns historically provided favorable growing conditions. Observed and projected changes in these parameters are disrupting the climatic foundations of productive tea cultivation across the sector's core growing regions [22].

The most consequential documented trend is the elongation of the dry season. Field evidence and meteorological records from major tea-growing districts indicate that the annual dry period has extended from approximately five to approximately seven months in some areas, with concomitant reductions in effective soil moisture availability during the growing season [9,14]. Irregular and poorly distributed rainfall directly reduces annual yield volumes and adversely affects the biochemical composition of tea shoots, particularly the concentration of polyphenols and amino acids that determines quality and, ultimately, auction price. Rising temperatures exacerbate water demand through increased evapotranspiration while also disrupting the thermal regulation of plant metabolic pathways, potentially altering crop growth cycles in ways that reduce both yield and quality consistency [22].

The burden of climate impacts falls disproportionately on smallholder farmers, who lack the financial resources, technical knowledge, and institutional support to implement adaptation measures at the required scale. Irrigation development one of the most technically effective adaptation responses, requiring upfront capital investment that exceeds the individual capacity of smallholder households and demands collective infrastructure provision. New drought-tolerant and climate-resilient tea varieties developed by TRIT represent a genetically appropriate response, but their dissemination is limited by the resource constraints of the extension system and the financial barriers farmers face in transitioning ageing bushes to new planting material.

Recommendations for Sector Reform and Recovery

The foregoing analysis identifies deeply interconnected structural, market, institutional, and climate-related drivers of deterioration in Tanzania's tea sector. Addressing these drivers effectively requires a coordinated, multi-stakeholder policy response that operates simultaneously across the full value chain. The following evidence-based recommendations are organized by thematic priority and targeted at specific institutional actors.

Establish Transparent and Equitable Green Leaf Pricing Mechanisms

The development of a credible, independent, and publicly verifiable green leaf pricing framework is the single most urgent institutional reform required for rebuilding farmer confidence and economic sustainability at the base of the value chain. This framework should be grounded in independent cost-of-production verification — building on the government's April 2025 directive to the Tea Board of Tanzania — and should incorporate a structured farmer representative voice in periodic price review processes. Pricing formulae should be disclosed transparently and linked explicitly to documented auction price movements and verified factory-cost benchmarks, reducing the scope for unilateral manipulation. Simultaneously, mandatory payment timeline regulations, backed by credible enforcement and proportional financial penalties for non-compliance, must be enacted and consistently applied to eliminate payment delay abuses.

Strengthen Farmer Organizations and Cooperative Structures

Effectively addressing the structural power asymmetry within Tanzania's tea value chain requires organized collective action at the farmer level. Investment in the organizational capacity, governance quality, and financial management of tea farmer cooperatives and associations should be prioritized as a strategic intervention. The planned development of farmer-owned processing factories represents a transformative step that could, if properly capitalized and managed, transition smallholder farmers from price-taking green leaf suppliers to value-adding participants in the chain with direct stakes in processing margins. This transition requires sustained technical assistance in cooperative governance, financial management, and quality systems, alongside access to patient capital for factory construction.

Modernize Processing Infrastructure and Strengthen Quality Systems

Tanzania's competitiveness in premium global tea markets is fundamentally constrained by processing technology that is

both ageing and insufficiently differentiated to capture specialty segment premiums. Strategic public-private investment in processing facility modernization, energy efficiency improvements, and quality control system upgrading is essential for repositioning Tanzanian tea in international markets. Factory investment should be accompanied by the development of rigorous quality assurance protocols across all chain nodes — from plucking standards to final grading — and by accelerated expansion of third-party certification coverage under Fairtrade, Organic, and other recognized standards. The incremental costs of certification should be supported through cost-sharing mechanisms that do not place the entire burden on smallholder farmers.

Diversify Market Access and Develop Value-Added Export Capacity

Tanzania's strategic dependence on bulk commodity tea exports through the Mombasa auction system exposes the sector to the maximum downside risk of global commodity price cycles while capturing the minimum share of consumer-end value. The Dar es Salaam digital auction platform should be developed with deliberate strategic intent as the nucleus of a broader market diversification strategy encompassing: direct supply relationships with international specialty buyers; expansion into growth markets in Asia, the Middle East, and the African continent; and the development of domestic value-added products — including packaged, blended, and specialty branded teas — that capture consumer-end margins. Domestic market development, including promotion of locally branded tea consumption, should be supported as a complementary demand-side strategy.

Build Climate Resilience Across the Value Chain

Climate adaptation must be integrated as a cross-cutting dimension of all sectoral investment and policy decisions rather than treated as a standalone technical programme. Priority interventions should include:

- (i) scaled public investment in shared irrigation infrastructure in key tea-growing districts, designed to buffer production against rainfall variability;
- (ii) accelerated development and dissemination of climate-resilient, high-yield tea varieties by TRIT, supported by a publicly financed certified planting material distribution system;
- (iii) promotion of agroforestry integration within tea gardens to moderate microclimatic temperatures, improve water retention, and generate supplementary income streams; and
- (iv) development of crop insurance products tailored to smallholder tea farmers to transfer a portion of climate-related production risk away from individual households.

Strengthen Institutional Governance and Regulatory Enforcement

The persistent recurrence of identical institutional failures across successive reform cycles in Tanzania's tea sector indicates that incremental adjustment within the existing governance architecture is insufficient. A more fundamental reconfiguration of institutional mandates, coordination mechanisms, resource allocation, and accountability frameworks is required. Specifically: the Tea Board of Tanzania should be adequately

resourced and empowered to exercise credible enforcement authority over pricing compliance and payment obligations; inter-institutional coordination among TBT, TSHTDA, and TRIT should be formalized through structured mechanisms rather than ad hoc collaboration; sector performance data — including production volumes, auction prices, farm-gate prices, and payment records should be published transparently and regularly to enable independent monitoring and policy evaluation; and farmer and civil society representatives should be accorded formal governance roles within these institutions to ensure accountability to the sector's most vulnerable stakeholders.

Conclusion

This review has demonstrated that the deterioration of Tanzania's tea sector is not attributable to any single cause but rather to a convergent and mutually reinforcing set of structural, market, policy, and climate-related failures that have accumulated over decades and now constitute a systemic crisis demanding coordinated policy intervention. Smallholder farmers, who constitute the demographic and productive backbone of the sector, managing nearly half of the tea-growing area, bear the most severe consequences of this convergence: low and economically unsustainable farm-gate prices, chronically delayed payments, structural absence of bargaining power, and acute vulnerability to climate variability without adequate institutional support for adaptation.

The value chain analysis conducted in this study reveals that these farmer-level vulnerabilities are not isolated phenomena but expressions of systemic failures distributed across the chain's full architecture. The captive governance structure at the farm-gate level, the commodity-oriented auction model at the export level, the institutional incapacity to enforce pricing and payment regulations, and the inadequate public investment in climate adaptation and processing modernization collectively constitute an interlocking system of constraints in which improvements at one node are insufficient without complementary progress across others.

Recent developments, including the Tanzania Tea Industry Development Strategy 2025–2035, the directive for independent green leaf cost verification, the construction of farmer-owned factories, and the development of the Dar es Salaam digital auction platform, signal a recognition at the policy level of the severity of the crisis and a genuine commitment to structural reform. The credibility and durability of this reform momentum will, however, be determined not by its articulation in strategy documents but by the consistency, adequacy, and accountability of its implementation. Tanzania possesses the natural endowments, human capital, and institutional foundations to operate a competitive and equitable tea sector. Translating that potential into durable improvement in the livelihoods of smallholder farmers and the commercial performance of the sector as a whole requires the political will, institutional capacity, and long-term commitment to structural reform that this analysis has shown to be necessary [31-39].

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