European Commission

Global Gateway

VCA4D
VALUE CHAIN ANALYSIS FOR DEVELOPMENT

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Value chain analysis of coffee in Tanzania

Value chain analyses assist in informing policy dialogue and investment operations. They help the understanding of how agricultural, aquaculture and fisheries development fits within market dynamics. They permit an assessment of the value chains' impact on smallholders, businesses, society, and environment.

The European Commission has developed a standardised methodological framework for analysis (https://capacity4dev.europa.eu/projects/value-chain-analysis-for-development-vca4d_en) It aims to understand to what extent the value chain allows for inclusive economic growth and whether it is both socially and environmentally sustainable.

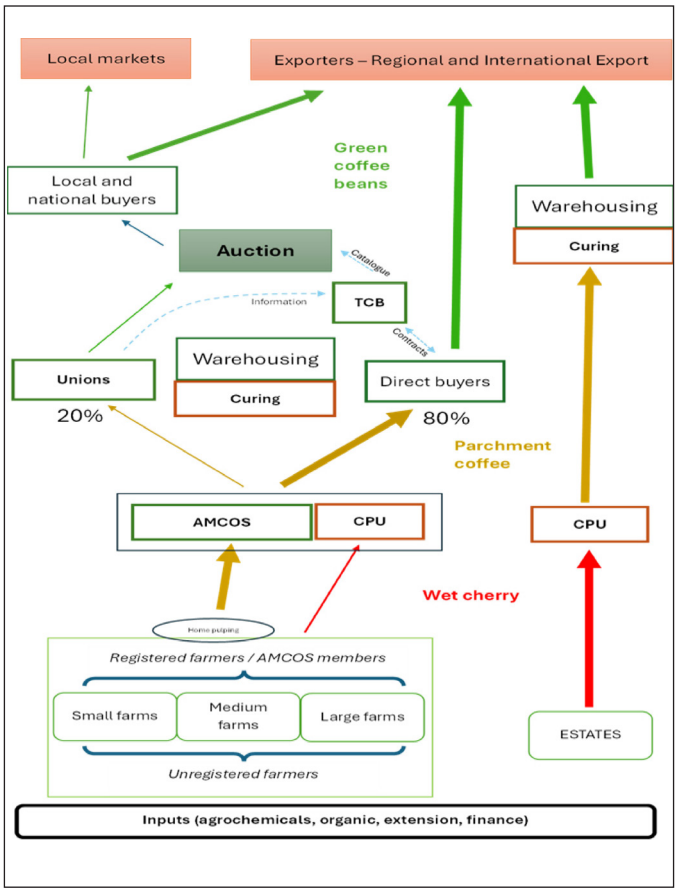

Figure 1: Arabica VC flowchart

The value chain context

Tanzania ranks as Africa's fourth-largest coffee producer, with national green coffee production increasing from ~37,000 tonnes in the late 1990s to ~82,500 tonnes in 2022/23. Historically dominated by Arabica (70–75%), the production balance has shifted significantly in recent decades, with Robusta rising to half of total exports by 2022/23 due to expansion in the Kagera region.

The sector supports the incomes of ~450,000 smallholder households, indirectly benefiting 2.6 million people. Production is dominated by smallholder farmers (90-95% of output), typically farming less than 1 hectare. Over 90% of national coffee production is exported, 48% to the EU, and 52% to other markets, including America and Japan. Coffee accounts for 1–2% of total national exports (valued at 901,745 million TZS, equivalent to €316 million) and ~8% of agricultural GDP. Tanzanian Arabica commands premium prices internationally due to its recognised quality, distinctive flavour and relatively early harvest season.

Key constraints on yields and productivity include adverse weather conditions, limited access to agro-inputs, aging trees, unsustainable practices, financial insecurity, pests and diseases, weak extension services, and governance challenges within cooperative systems.

The European Union intervention

The European Union (EU) plays a central role in the value chain (VC), primarily as a major market destination, consistently absorbing between 40% and 60% of Tanzania's coffee exports. The findings of the earlier 2018 VCA4D study, which concentrated on Arabica production, contributed to the design of subsequent EU development programs, including AGRI-CONNECT and MARKUP II. Furthermore, the EU wields considerable power through its influence on market access, notably through the entry into force of the EU Deforestation Regulation (EUDR), which is reshaping global VCs. The EU support to the Tanzanian Coffee Board (TCB) in the establishment of a sustainable system will improve the sector's compliance with EUDR.

Functional analysis

Technical features of Arabica and Robusta sub-chains

Coffee production is strongly zoned. Robusta is concentrated in the Western zone (Kagera), which produces more than half of national output. Arabica is grown mainly in the Southern Highlands and the Northern zone (Arusha and Kilimanjaro). The typology of farmers from the 2018 study, based on land holding size (small, medium, large farms and estates) has been retained for the 2025 national study for its relevance, while also considering local farm size variations and heterogeneity in coffee farming systems. In both sub-chains, the VC is dominated by smallholders: 100% of Robusta and around 90–95% of Arabica comes from small farms, with estates only present in the Arabica sub-chain.

Robusta is produced in low-input systems, with farmers harvesting and sun-drying cherries at home and selling them as dry cherries, hulled later by buyers. Coffee is treated as a bulk commodity rather than a quality-differentiated product. Primary processing is almost entirely home-based with limited quality control. Dried cherries pass from village collectors and local traders to Agricultural Marketing Cooperative Societies (AMCOS), then to Unions and, via the auction, to buyers, with some informal cross-border trade into Uganda. As quality is not the main driver, upgrading activities at farm or primary-processing level remains limited.

Arabica is grown at higher altitudes in mixed systems (combined with other crops) or agroforestry systems (integrated with shade trees). Production ranges from low-input smallholder plots to higher-input estates using fertiliser and other agro-chemicals. Unlike Robusta, Arabica must be wet-processed, dried to "parchment coffee" and then hulled to "green coffee". Ideally this happens through Central Processing Units (CPUs) owned by AMCOS or estates. In practice, much Arabica is still home-processed (small hand pulpers, ad-hoc drying and poor storage), undermining quality and limiting market access. The government reforms to the coffee marketing system in 2018 also weakened the efficiency of CPUs: many units had been managed or supported by buyers. When marketing shifted back to the cooperatives, this support fell away. This left some CPUs poorly managed and maintained, underutilised, and resulted in more coffee being processed at home.

Marketing systems, auctions and direct sales

Tanzania operates a hybrid system combining direct sales contracts and auctions, channelled through the Tanzania Mercantile Exchange (TMX). The Robusta chain is organised around the online auction, which is the backbone of its formal marketing. Unions aggregate coffee from AMCOS and channel it through TMX (Figure 2). As exporters cannot buy directly from farmers or AMCOS, unions are the main interface with producers. This gives them substantial control over market access, while farmers remain price-takers exposed to global Robusta price swings. The move to online auctions has improved logistics and price discovery but not farmers' bargaining power.

In the Arabica sub-chain, a growing share (80%) of Arabica is sold through direct contracts between AMCOS or estates and international buyers. Direct sales have expanded because auctions struggled to reward quality and traceability. Speciality buyers seek long-term relationships and farm-level traceability that are easier to manage through contracts. Overall, the auction remains central to Robusta's formal marketing and union power but is increasingly peripheral in Arabica.

Governance and policy

Since the 2018 VCA4D study, Tanzania's coffee governance has gone through a disruptive reform cycle. In 2018 government recentralised marketing around AMCOS and TCB-run auctions and initially banned private farm-gate purchases. The reform intended to strengthen cooperatives, but instead disrupted buyer–farmer relationships, raised transaction costs and exposed governance and financial weaknesses in many new AMCOS. In Robusta (Kagera) it cemented union control and left farmers as price-takers in an undifferentiated chain. In Arabica it disrupted speciality and relationship-based trade built on direct contracts and quality incentives.

Since 2021, the policy framework has softened, reinstating direct export contracts (now covering nearly 80% of Arabica exports), reducing export levies, and reorienting the 2020–2025 Coffee Industry Development Strategy toward rehabilitating existing farms with more subsidies for Arabica inputs. In parallel, the National Land Policy, Village Land Use Plans and the EUDR created new traceability and compliance demands. At the time of the 2025 VCA4D study, coffee farmer registration was still incomplete. A gap remains between policy ambitions and outcomes for smallholders and weaker cooperatives.

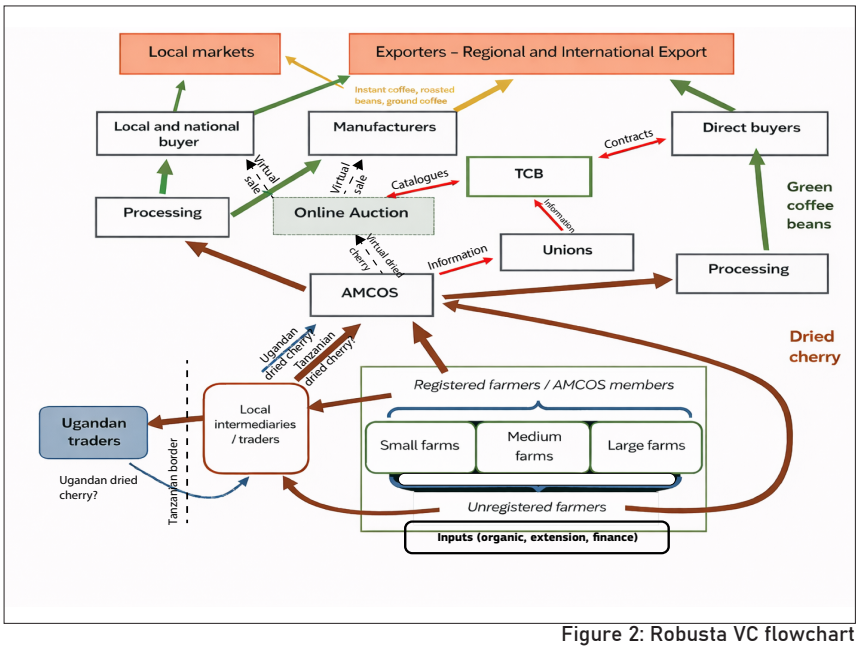

Figure 2: Robusta VC flowchart

What is the contribution of the value chain to economic growth?

With substantial positive value added (VA), totalling 913,203 million TZS (€316 million), the Tanzanian coffee VC has a vital role within the agricultural sector. Both the Robusta and Arabica sub-chains are profitable in aggregate, but differ structurally, with efficiency gaps, weak integration and sharp inequality: returns rise steeply with scale, favouring large producers and downstream actors over smallholders.

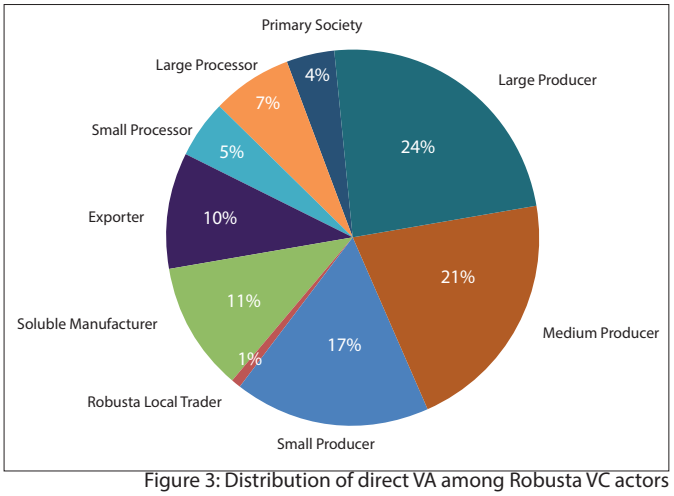

Figure 3: Distribution of direct VA among Robusta VC actors

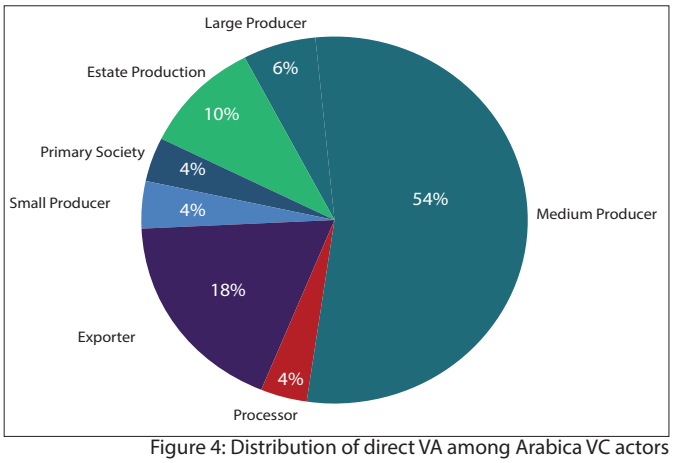

Figure 4: Distribution of direct VA among Arabica VC actors

In the Robusta chain, producers collectively generate the largest share of direct VA (62%), split across large (24%), medium (21%) and small producers (17%). Exporters generate a further 10%, while midstream actors such as primary societies and processors retain smaller share (~4-7%) and operate on thin margins (~5-15%). However, these aggregate shares mask very high inequality at the individual level: despite positive margins, smallholder 'profit' often reflects unpaid family labour, and the distribution of net operating profit (NOP) is extremely skewed (Gini ≈0.83). Downstream actors also benefit from stronger market positioning and can retain a significant portion of gains from trade and processing.

In the Arabica chain, producers as a whole account for ~74% of direct VA, but this 'producer share' is dominated by medium farms, leaving smallholders and midstream actors in a marginal position. Medium producers capture about 55% of NOP, exporters ~18%, and estates/large farms ~15–16%, while small producers receive 4% and midstream actors earn only minimal margins. Despite strong concentration in Arabica, overall inequality is lower than in Robusta (Gini ≈0.46).

Impacts on the national economy

The coffee VC is largely inward-oriented (81% of final VA is retained domestically) but shows major structural differences between the sub-chains. Robusta is highly integrated and macroeconomically efficient, with 95% of its value retained domestically, positive indirect VA (€27 million), and a positive Driving Effect Ratio (Indirect VA/Direct VA), indicating strong involvement of local suppliers in supporting VC activities. It is a net fiscal contributor to the state budget and generates a strong trade surplus with minimal import dependency (1.7% of total production value).

Arabica, by contrast, has lower domestic integration (67%) due to heavy reliance on imported inputs, especially fertilizers. This results in negative indirect VA (-52,083 million TZS (-€18.0 million)), a negative Driving Effect Ratio, and a fiscal deficit driven largely by fertilizer subsidies. It generates a positive trade balance, but its high import intensity (30.9% of production value) reduces its net foreign exchange contribution. Overall, the national coffee VC is a net recipient of public funds, with a combined deficit of 28,155 million TZS (€9.7 million).

Viability in the international economy

Both sub-chains are internationally viable, (Domestic Resource Cost ratio <1) meaning domestic resources are used efficiently to generate foreign exchange. Robusta's competitiveness is largely market-based (Nominal Protection Coefficient (NPC)<1) while Arabica's profitability relies more on policy support and subsidies (NPC>1).

Tanzania's coffee sector is an important contributor to national economy and a major source of trade surplus. Robusta is highly domestically integrated, whereas Arabica relies more on imported subsidies, causing fiscal deficits. Both sub-chains remain internationally competitive and efficient in utilizing domestic resources to generate foreign exchange.

Is this economic growth inclusive?

Distribution of income among the actors

Tanzania's coffee VC displays pronounced income inequality, particularly in Robusta, where ~4% of actors capture roughly 70% of total income, while the remaining 96% (mainly farmers) share only 30%. Arabica is less unequal but still concentrated, with medium producers capturing ~55% of total NOP. At national level, VA is driven mainly by operating profits (~91% of Direct VA), while wages and salaries account for only ~3.4%.

Many smallholder households depend heavily on coffee (often ≥50% of income), increasing exposure to price shocks and market disruptions. Delayed AMCOS payments and limited access to affordable credit create liquidity stress, prompting coping strategies (e.g. side-selling or selling immature coffee as collateral), which may ease short-term cash constraints but can weaken longer-term resilience and trust.

Job creation and employment

The VC generates ~43,550 Full-Time Equivalent (FTE) waged jobs, but employment is largely seasonal, informal or based on unpaid family labour. Large producers and estates dominate wage provision, while smallholders rely on family labour. Women comprise ~55% of the FTE workforce but are concentrated in low-value or unpaid roles with limited control over income and land.

Tanzania's coffee growth remains structurally unequal, with profits concentrated among larger and medium actors. Wages account for small share in value and labour is largely informal.

Is the value chain socially sustainable?

Figure 5 and the following table provide an image of the main social consequences of the VC activities in six strategic domains.

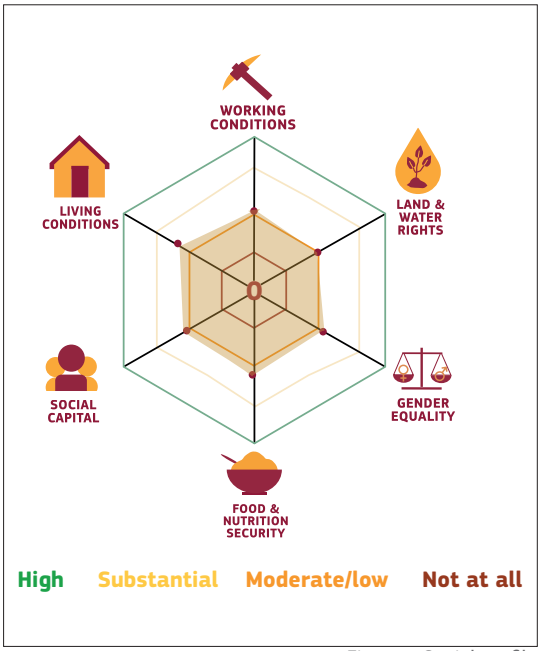

Figure 5 Social profile

Working Conditions	• Predominance of informal and unpaid household labour • Legal protection concentrated on formal estate workers, limited coverage for informal coffee workers • Very low social insurance uptake (under 14%) among informal workers and smallholders due to cost and low awareness • Persistent occupational job safety risks in informal settings due to weak oversight and lack of protective equipment
Land and Water Rights	• Predominance of customary land tenure among smallholders; limited prevalence of Certificates of Customary Right of Occupancy (CCROs) • Slow CCRO formalization alongside entrenched gender inequalities in land ownership, excluding women and youth • Slow EUDR compliance (re-registration) (around 50% re-registered), posing a critical market access challenge in both sub-chains
Gender Equality	• Male dominance in income control, resources, decision-making, and marketing • High female labour contribution combined with smaller farm and asset ownership, leading to a large gender income gap in coffee (44% structural disadvantage) • Women's reliance on small volume side-selling for immediate household cash needs due to limited control over main sales proceeds • Time poverty associated with heavy workloads, constraining women's access to training and decision-making
Food and Nutrition Security	• Prolonged AMCOS coffee payments delays weakening coffee income contributions to food security and resilience • Use of negative coping strategies during lean seasons under unstable cash flow • High rates of child stunting in some areas, linked partly to women's demanding workloads and limited time for childcare and nutritious meal preparation
Social Capital	• Highly variable AMCOS capacity, with widespread governance and management weaknesses causing payment delays and unreliable input support • Loss of trust in cooperatives and service delivery failures driving informal sales to local traders • Ongoing information asymmetries, limiting smallholders' knowledge of market prices and inclusion in AMCOS decisions • Women's reliance on Village Savings and Loan Associations (VSLA) to pool savings and access credit
Living Conditions	• Coffee income contributions to improved housing, healthcare, and education investment, alongside uneven benefit distribution due to payment delays and service disparities • Persistent regional disparities in healthcare facilities • Uneven digital literacy, limiting access to modern tools for price transparency

Despite important social benefits, the coffee value chain is not yet fully socially sustainable. Progress on working conditions, gender and youth inclusion, tenure security, timely and transparent cooperative payments, and nutrition is needed to match the sector's economic importance with stronger, fairer social outcomes. Without deliberate action on these structural issues—alongside productivity and market upgrades—the sector will still generate value and some living-standards gains, but many smallholders and workers will remain exposed to shocks and unable to share equitably in the benefits.

Is the value chain environmentally sustainable?

Environmental impacts in the Tanzanian coffee VC are highly concentrated at the production stage, with strong differences across farming systems, regions and coffee species. Smallholder coffee production is characterised by low productivity, resulting from low external input use in some systems and inefficient input management in others. Efficient use of land, fertilizers, pesticides and water to achieve higher yields is the most influential determinant of the VC's environmental footprint across all major impact categories, resource depletion, climate change, ecosystem quality and human health. Processing mainly affects energy use and fossil fuel resource depletion but is secondary compared to cultivation. In Arabica systems, wet processing adds localised ecosystem impacts through wastewater discharge and coffee pulp effluents.

Smallholders vs Estates

Environmental performance varies across systems in Arabica (smallholder versus estates), while Robusta estates do not exist in Tanzania. Arabica smallholders, use medium-inputs but achieve low-yields (~300 kg green coffee/ha), leading to inefficient land-use and high impacts per kg due to unbalanced fertiliser and pesticide use. Human health risks are significant, as pesticides are often applied with limited knowledge of safe and appropriate practices.

In contrast, Arabica estates operate high-input, high-yield systems (1-2 tons green coffee/ha), achieving much better land-use efficiency. High productivity, supported by highly efficient input management and good agricultural practices, leads to lower environmental impacts per unit of output across most impact categories, excluding water use. However, estates also face significant human health risks due to the large quantities of pesticides used, and water use is often highly inefficient, as irrigation commonly relies on sprinkler systems rather than much more efficient drip irrigation.

Overall, smallholder systems represent the main leverage point for reducing environmental impact at the national level as they represent 90–95% of production and their environmental impact can be improved significantly by improving coffee productivity with better use of agro-inputs. For Arabica smallholder farmers, the main constraint is the inefficient and unbalanced use of agro-inputs, resulting in lower yields.

Arabica vs Robusta

Environmental performance also differs substantially between Arabica and Robusta smallholder systems, reflecting contrasting production practices, input use, and productivity levels. Robusta smallholders in Kagera operate minimal-input, very low-yield systems (~100 kg green coffee/ha), often organic-by-default (> 80%), with minimal chemical-related health risks. However, low productivity drives poor land-use efficiency and high impacts per kg. Arabica wet processing is water-intensive and weak wastewater management creates eutrophication risks, while Robusta dry processing uses little water.

Overall, both systems show environmental inefficiencies driven by low productivity: Arabica requires better input management, and Robusta needs productivity gains beyond very low-input, often organic, approaches.

Biodiversity and EUDR

In Mbinga (Ruvuma), Arabica farmers primarily use agroforestry (90%), but with very low tree diversity, dominated by Grevillea robusta. Overall, Robusta systems in Kagera show greater species richness, although farm-level woody diversity remains low, with about one-third of Robusta farmers practising monoculture.

At national level, coffee is not a major driver of recent deforestation in Tanzania. Most coffee-related land conversion occurred prior to 2021, including significant Arabica expansion in Mbinga (Ruvuma). Recent coffee expansion linked to "deforestation" as defined under EU Regulation on Deforestation-free Products (EUDR) criteria appears minimal, affecting less than 1% of Robusta plots in Kagera and only 1.23% of Arabica plots in Mbinga.

Despite limited recent deforestation, the EUDR is already having unintended and sometimes, disproportionate negative effects on smallholder Robusta farmers in Kagera, particularly in terms of the traceability required by the regulation to source products that do not come from areas that have been deforested since 2020. To address these challenges, the EU is providing technical support to the TCB to improve legality frameworks and geolocation-based traceability, as well as policy advice and training for small producers and AMCOS. This also provides an opportunity to promote consumption of deforestation-free products, while also encouraging producers to adopt more sustainable practices as well as greater transparency in the production and trade of commodities.

The Tanzanian coffee value chain has the potential to reduce its environmental impact. Improving coffee yields, especially among smallholders, requires more efficient use of resources, with region- and species-specific approaches reflecting the different constraints of Arabica and Robusta. Key issues include the inefficient use of water for irrigation on some Arabica estates and the improper use of pesticides among Arabica smallholders, which poses health risks. On-farm biodiversity is generally low. Coffee is not a major driver of recent deforestation, but EUDR compliance challenges remain significant.

Main findings and recommendations

The Tanzanian coffee VC exhibits inherent competitive strengths and significant potential for growth, but this is constrained by deep structural and social weaknesses and high exposure to external shocks. The benefits are distributed unevenly, with smallholders, women and young people receiving a relatively small share of the value they help to create.

SWOT Matrix

STRENGTHS	WEAKNESSES
• Premium quality arabica and early harvest relative to global competitors • Significant contribution of the VC to national economy; high domestic integration of Robusta (95%) and notable international competitiveness • Limited contribution of coffee to recent deforestation (post-2020)	• Low and unstable smallholder returns: high vulnerability of Robusta smallholders to price and yield shocks; extreme income inequality and profit concentration among medium/large actors, financial insecurity of smallholder farmers • Low smallholder productivity due to financial constraints, limited input access, and knowledge gaps • Weak AMCOS governance and financial management; delayed payments, poor services, side-selling, and low farmer trust • Gender and youth inequities, with women in low-value/unpaid roles and limited access to land, income, training and opportunities
OPPORTUNITIES	**THREATS**
• Strengthened price transparency and reduced farmer payment delays through further use of the TMX platform and mobile money • Increased efficiency of capital and agro-input use by smallholder farmers to improve coffee yield • Increasing VC traceability and mapping from input provision to final trade, generating broader transparency and economic benefits beyond the EUDR requirements • Enhanced agroforestry diversity and shade cover for resilience building • Substitution of highly hazardous pesticides with safer alternatives	• Climate Change impacts (erratic rainfall, rising temperatures, increased pests and diseases,) affecting coffee yields and suitability, especially for Arabica • Restricted EU market access due to EUDR implementation, with Robusta smallholders in Kagera already affected by compliance risks • High exposure to global price volatility, payment delays and limited affordable credit for smallholders • Low formal employment, weak youth prospects and entrenched gender inequalities

Recommendations

- Smallholder Financial Security: strengthen pre-harvest advance schemes and AMCOS payment guarantees, and rapid payments (e.g. within seven days of delivery) to reduce reliance on informal credit and stabilise household spending. Expand community-level savings and credit mechanisms (VSLAs and similar) alongside financial literacy and basic business training for women and men to improve planning and reduce distress sales.
- Production and Environment: Enhance production and reduce environmental impacts, through improved resource use and climate resilient practices. Priorities include improved irrigation efficiency on Arabica estates, greater shade and tree diversity, safer pesticide management, and wider adoption of integrated soil fertility and pest management practices (ISFM and IPM) among smallholders, including liming and balanced fertilisation. Low input Robusta approaches should be reassessed.
- Governance and Social Equity: Restore trust in AMCOS through timely payments, transparency and grievance mechanisms. Address gender inequalities via gender-responsive land titling (CCROs), shared income control, and stronger participation of women's and youth's in AMCOS leadership and committees.
- Labour, youth and nutrition: Promote youth inclusion, nutrition-sensitive use of coffee income for food security, alongside targeted social protection measures for farmers and workers, addressing payment delays, price volatility, and low insurance coverage.
- EUDR: Despite minimal coffee-driven deforestation in Tanzania (< 2%), the EUDR impacts smallholder Robusta farmers in Kagera. Targeted farm mapping, traceability support, inclusive registration, dialogue, and monitoring of land-use change in Arabica expansion areas (Ruvuma) are essential to maintain the coffee VC deforestation-free and an opportunity to promote broadly VC traceability system beyond the initiatives to comply with EUDR.

This document is based on the report Value Chain Analysis of coffee in Tanzania by Shee, A., Allen, C., Broeckhoven, I., Mhando, David., 2025 for the European Union, DG-INTPA Value Chain Analysis for Development Project (VCA4D CTR 2018/392-416), 146 p + annexes. Only the original report binds the authors.