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Coffee in Biodiverse Landscapes: Value Chain Challenges and Opportunities in Kon Tum, Vietnam

Report by SNV for the Biodiverse Landscape Fund (BLF)

Photo: SNV

Preface

To address the triple challenge of poverty, biodiversity loss, and climate change, UKAid funds the Biodiverse Landscapes Fund (BLF) across priority landscapes in the Lower Mekong. The programme focuses on the Annamite Mountain range, which spans Vietnam, Cambodia, and Laos, and represents one of the most biologically important and highly threatened forest landscapes in the region.

In Vietnam, the Northern Central Highlands represent a critical frontier for conservation. The Kon Tum Landscape[1], encompassing the Chu Mom Ray National Park and Ngoc Linh Nature Reserve, harbours globally significant biodiversity, from rare primates to endemic flora. This landscape is also home to diverse ethnic minority communities whose livelihoods are deeply intertwined with the forest.

While coffee production, Arabica in Dak Glei and Robusta in Sa Thay, has become a cornerstone of the local economy, it faces a turning point. Rapid expansion, limited market power for smallholders, and mounting climate risks are placing both ecosystems and communities under unprecedented pressure.

As part of the BLF consortium alongside Fauna & Flora (F&F) and the International Union for Conservation of Nature (IUCN), Netherlands Development Organisation (SNV) leads the transformation of agricultural value chains. SNV works to ensure coffee production drives conservation rather than contributing to environmental threats by focusing on:

- Strengthening community-led organisations to increase market power.
- Empowering women and ethnic minorities by removing barriers to finance and technology.
- Securing forest-friendly livelihoods that comply with voluntary sustainability standards such as the Common Code for the Coffee Community (4C) and Rainforest Alliance (RA), and with applicable legal requirements, including the EU Deforestation Regulation (EUDR).

This report explores the strategic pathways to transform the coffee sector in Kon Tum into a deforestation-free, pro-poor, and climate-smart system. Through these interventions, SNV aims to build a resilient rural economy where sustainable coffee serves as a foundation for long-term landscape stewardship.

1 This assessment was conducted prior to 1 July 2025, at which time Kon Tum Province and its districts, including Sa Thay and Dak Glei, remained administratively defined under the former provincial structure. Following the national administrative reorganisation effective from 1 July 2025, these areas have been incorporated into Quang Nam Province. For consistency and accuracy, this report retains the administrative boundaries and terminology applicable at the time of data collection and analysis. The findings are therefore presented using the term “Kon Tum Landscape”, referring to the geographical and ecological area covered by the study, irrespective of subsequent administrative changes.

Executive Summary


Photo: Unsplash

This report presents the key findings of a scoping assessment of the coffee value chain in the Kon Tum landscape, Vietnam, focusing on the ecologically sensitive upland districts of Sa Thay and Dak Glei. Situated within the conservation corridors of Chu Mom Ray National Park and Ngoc Linh Nature Reserve, this landscape encompasses nearly 5,500 hectares of coffee. It supports over 100,000 people, including Xo Dang, Gie Trieng, Ba Na, Kinh, and several other migrant communities, whose livelihoods are increasingly linked to coffee production.

Coffee plays distinct but important roles in the two districts. In Dak Glei, Arabica coffee forms part of diversified livelihood systems closely linked to forest landscapes. In Sa Thay, Robusta coffee functions as a commercial backbone for rural incomes. Despite these differences, both production systems face structural constraints that limit their contribution to resilient livelihoods, climate adaptation, and forest compatible land use.

In Dak Glei, according to 2023 statistics, Arabica coffee is cultivated on approximately 1,900 hectares of high elevation, forest adjacent areas. Coffee contributes only 10-30% of household income and complements subsistence crops, forest-based activities, and off farm work. Production is highly fragmented and characterised by minimal input use and limited technical support. As a result, average yields remain low at around 1.2 tonnes/ hectare of green bean equivalent. Difficult terrain, weak infrastructure, and limited post-harvest capacity restrict access to specialty and higher value markets, despite strong agroecological potential.

In Sa Thay District, 2024 statistics show that smallholder farmers cultivate Robusta coffee across approximately 3,200 hectares, primarily under conventional monocropping systems. Production relies heavily on external inputs and is highly vulnerable to climate variability, particularly drought and water scarcity. Average yields reach 2.79 tonnes per hectare (green bean equivalent) but vary widely due to differences in farm management and access to resources. Despite coffee contributing over 70% of household income, value capture remains low. Early harvesting at 60–80% ripeness and limited post-harvest handling reduce quality and price premiums. Most farmers sell fresh cherries through informal traders, resulting in weak aggregation, limited traceability, low bargaining power, and heightened exposure to price and climate risks.

Photo: SNV

Across both districts, a widening gap is emerging between local production practices and evolving market requirements. Awareness of sustainability standards, including 4C and RA, as well as compliance with legal requirements such as the EUDR, remains limited. Traceability systems are largely absent, and most cooperatives lack the capacity to aggregate production, manage quality, and support compliant sourcing. Gender equality, social inclusion, and climate resilience are not yet systematically embedded in local agricultural support systems, despite women contributing an estimated 60 to 70% of labour in coffee cultivation and harvesting in Dak Glei.

The assessment identifies differentiated but aligned transformation pathways:

- In Sa Thay, priorities focus on improving harvest and post-harvest practices, strengthening aggregation and traceability, and stabilising incomes through more structured market engagement.
- In Dak Glei, emphasis should be placed on quality led Arabica production, small scale and cooperative managed processing, and gradual readiness for specialty and compliant markets under forest sensitive conditions.
- In both contexts, strengthening cooperatives, promoting climate smart and agroecological practices, and sequencing compliance efforts in line with local capacities are critical.

The report concludes that coffee can play a stronger role in supporting inclusive livelihoods and climate resilience in the Kon Tum Landscape. This requires value chain upgrading that is locally grounded, socially inclusive, and environmentally responsible. Aligning production practices with market requirements, strengthening community-based institutions, and actively managing deforestation and climate risks can help coffee deliver more stable household incomes and support long-term landscape stewardship in Vietnam's Northern Central Highlands.


Photo: SNV

Contents

Abbreviations

Cafe-REDD	Coffee Agroforestry and Forest Enhancement for Reducing Emissions from Deforestation and Forest Degradation Project
CPC	Commune People Committee
4C	Common Code for the Coffee Community
DAE	Department of Agricultural and Environment
DPC	District People's Committee
EAKMAT	Eakmat Coffee Research and Technology Transfer Centre
EUDR	European Union Deforestation Regulation
FFI	Fauna & Flora International
JDE	Jacobs Douwe Egberts
GAP	Gender Action Plans
GCP	Global Coffee Platform
NTFPs	Non-Timber Forest Products
OCOP	One commune one product
PFES	Payment for Forest Environmental Services
RA	Rainforest Alliance
SNV	Netherlands Development Organisation
SWOT	Strengths, Weaknesses, Opportunities, and Threats
WASI	Western Highlands Agriculture and Forestry Science Institute

1. INTRODUCTION

Kon Tum Landscape lies within the Annamite Mountain range, one of Southeast Asia's most important biodiversity hotspots and a priority landscape under the Biodiverse Landscapes Fund (BLF) in the Lower Mekong region. Within this landscape, the upland districts of Dak Glei and Sa Thay form critical buffer zones around Ngoc Linh Nature Reserve and Chu Mom Ray National Park, linking agricultural production systems with areas of high conservation value.

These districts support ethnically diverse communities whose livelihoods remain closely tied to smallholder agriculture and forest resources. Agriculture underpins rural incomes, and coffee has become one of the most economically significant crops in the lanscaped. At the same time, many ethnic minority households face persistent constraints, including geographic isolation, limited access to markets and services, and growing exposure to climate and environmental risks.

Kon Tum Landscape spans nearly 9,700 km^2 and includes steep mountain ranges, high plateaus, and diverse agroecological zones suitable for both Arabica and Robusta coffee. With over 31,500 hectares already under cultivation, coffee production in Kon Tum follows two distinct pathways.

In Dak Glei, Arabica production is expanding at higher elevations. These systems reach up to 2,598 metres at Ngoc Linh[2], where favorable microclimates produce high-quality beans integrated with shade species and medicinal plants.

In Sa Thay District, farmers utilize red basaltic soils on lower slopes to grow high-yielding Robusta at scale. This serves as the primary cash income for many smallholders.

Despite their potential, these ecosystems are inherently fragile. Both districts face mounting pressure from climate variability, soil erosion, and limited infrastructure. Furthermore, weak market linkages and stringent new requirements for traceability and deforestation-free compliance pose a threat to local stability. These challenges directly impact livelihoods and increase risks to surrounding forests. Women and ethnic minority households remain the most vulnerable, as they often lack equal access to finance, technical support, and decision-making power.

The BLF leverages coffee as a strategic entry point for landscape-level intervention. By upgrading the value chain near protected areas, the Fund drives economic growth and conservation, ultimately boosting rural livelihoods while protecting forests and building climate resilience.

This study assesses the coffee value chain in Dak Glei and Sa Thay to identify key constraints, risks, and opportunities. Its purpose is to inform future investments and the design of sustainable, inclusive, and deforestation-free programmes that support biodiversity conservation and resilient livelihoods in the Kon Tum landscape.

2 https://www.kontum.gov.vn/News/Detail/32485

2. METHODOLOGY

The assessment focuses on the coffee value chain in Sa Thay and Dak Glei districts, Kon Tum Landscape[3] (Kon Tum Province - Figure 1). It examines production systems, climate and environmental risks, market linkages, institutional capacity, and gender and social inclusion, with a clear emphasis on identifying constraints and opportunities relevant to sustainable and deforestation-free coffee development.

The study applied a mixed-methods approach that combined desk-based analysis with field-based qualitative research and value chain assessment tools. The desk review covered provincial and district development plans, sectoral policies, BLF landscape strategies, SNV project documentation, and key technical frameworks related to sustainability standards and deforestation-free supply chains, including 4C, RA, and EUDR requirements. Field research used participatory, stakeholder-centred methods to capture local practices, risks, and constraints across different segments of the coffee system.

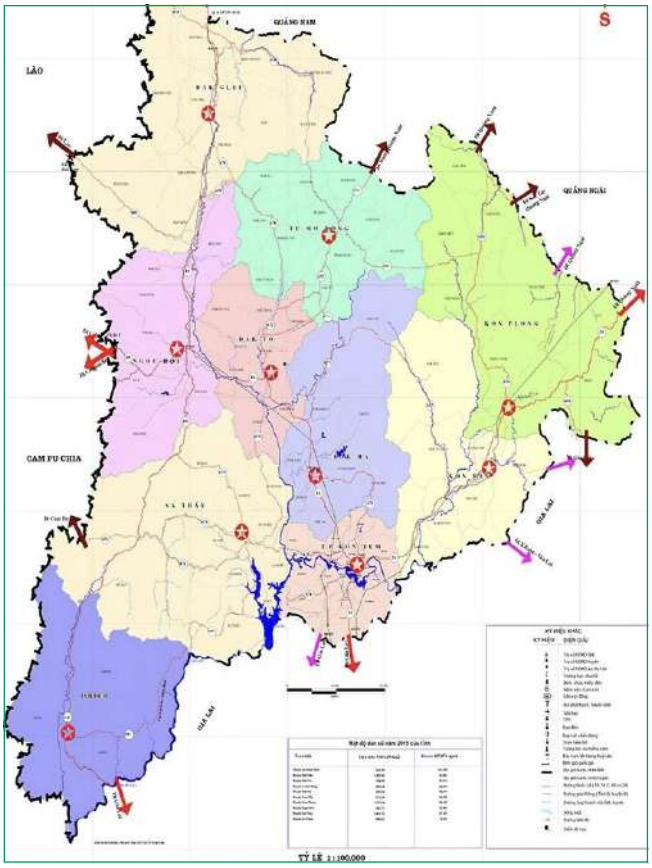

Figure 1: Administration map of Kon Tum Province[4]

Fieldwork engaged a wide range of actors, including smallholder farmers, cooperatives, traders, local authorities, and service providers. A total of 37 key informant interviews were conducted, complemented by focus group discussions and participatory tools to examine production practices, seasonal dynamics, and market relationships. Gender and social inclusion were integrated throughout the research process to ensure that the perspectives of women and ethnic minority groups informed the analysis.

Data was analysed using value chain mapping and SWOT analysis to identify location-specific constraints, risks, and opportunities. Findings were synthesised through iterative analysis and triangulation across data sources. Where feasible, emerging insights were discussed with local stakeholders to validate interpretations and strengthen the relevance of the conclusions for programme design.

3 Data in this report refers to the administrative boundaries of Kon Tum Province as of the survey period prior to July 2025.
4 https://www.kontum.gov.vn/News/Detail/32496

3. FROM SOIL TO BEAN: COFFEE PRODUCTION PROCESS

Coffee production in Kon Tum Landscape spans two contrasting landscape and livelihood systems in Dak Glei and Sa Thay. Variations in altitude, agro-ecological conditions, production intensity, and market integration give rise to distinct production models, risk profiles, and development opportunities.

3.1. Coffee production system

Dak Glei: Arabica in high-altitude, forest-adjacent systems

Dak Glei is located on the eastern slopes of the Annamite Range at elevations of 800–1,500 meters above sea level. Cool temperatures and high rainfall create favourable conditions for Arabica coffee and agroforestry-based systems. The district borders Ngoc Linh Nature Reserve and is home to approximately 47,100 people, the majority of whom belong to ethnic minority groups living in remote and dispersed settlements. Agriculture contributes over 50% of local GDP, with Arabica coffee serving as the main cash crop[5].

According to synthesised agricultural reports, the coffee cultivation area in Dak Glei district has seen significant expansion in recent years. In 2023, the district total reached 1,892.4 hectares, producing an output of 1,945. By 2024, the total area grew to 2,258.7 hectares, marking an increase of 366.3 hectares.

Despite this expansion, productivity remains a critical challenge. The average coffee yield for Dak Glei in 2023 was recorded at 1.22 tonnes/ha. This is notably low when compared to the Arabica benchmark in Lam Dong, which achieved an average yield of 2.86 tonnes/ha[6] (based on 2018 data for a cultivation area of 13,685.2 ha).

Production is dominated by smallholders cultivating less than 1 ha, often on steep slopes under low-input systems. Common practices include dense planting, limited fertiliser application, frequently below recommended levels at around 500 kg NPK/ha or none at all, minimal pruning, and little access to irrigation or mechanisation. On sloping land, farmers commonly intercrop coffee with Litsea cubeba, acacia, or fruit trees, while monocropping is more prevalent in valley bottoms, as shown by transect mapping (Figure 2).

These production practices constrain yields but create strong potential for organic and specialty Arabica under agroforestry models that align with forest-adjacent landscapes. However, harvesting remains a critical quality bottleneck. Most farmers harvest coffee cherries in a single bulk round, resulting in uneven ripeness and lower quality.

In contrast, households linked to cooperatives that practise selective picking achieve higher prices and labour returns. The communes of Dak Man (covered 262.7 hectares in 2023) and Xop (176 hectares of coffee in 2024) primarily cultivate the Catimor variety of Arabica coffee. In Xop commune, these households record profit margins of 75%, compared to 58% among bulk-harvesting households in Dak Man.

5 https://huyendakglei.kontum.gov.vn/gioi-thieu/Lich-su-hinh-thanh--Dieu-kien-tu-nhien-3076
6 https://www.vietmaycoffee.com.vn/blogs/ben-trong-hat-ca-phe/dac-diem-mot-so-giong-ca-phe-arabica-ca-phe-che-trong-tai-lam-

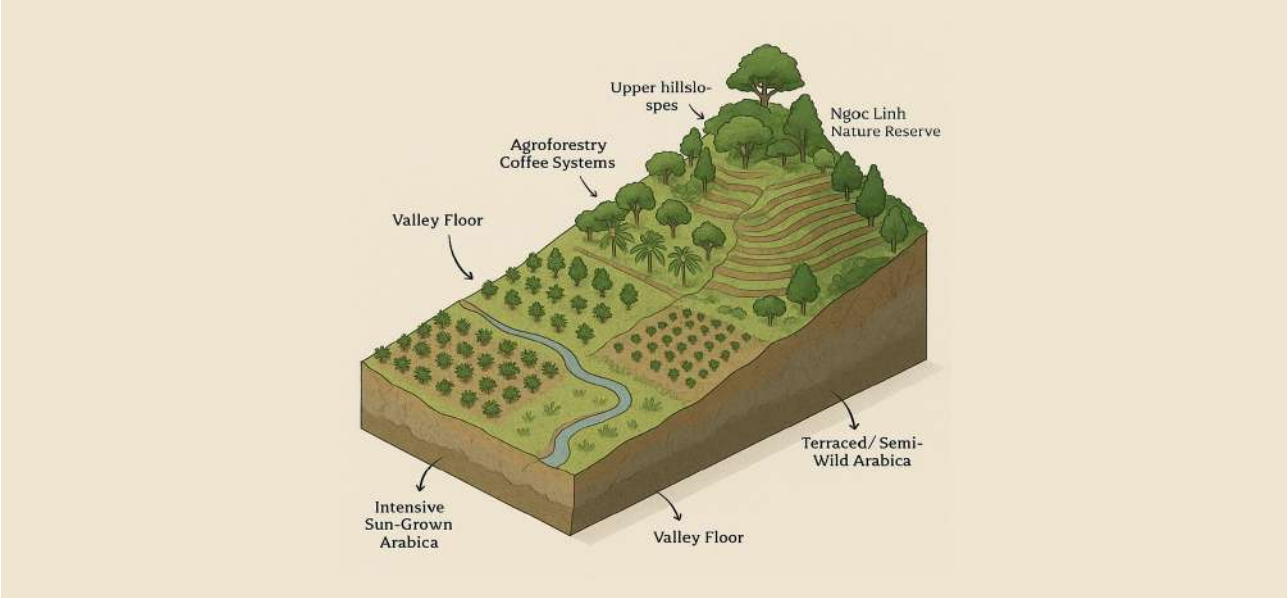

Figure 2: Transect mapping of Dak Glei

Sa Thay: Commercial Robusta with emerging diversification

Sa Thay District is located in a hilly plateau landscape at elevations of 500–1,500 metres above sea level. Basaltic soils and a tropical monsoon climate provide favorable agroecological conditions for Robusta coffee. Parts of the district overlap with the buffer zones of Chu Mom Ray National Park, placing commercial coffee production in close proximity to areas of high biodiversity value. With a population of approximately 56,000 people, more than 57% of whom belong to ethnic minority groups living mainly in remote buffer zones, Sa Thay combines high economic importance with heightened environmental sensitivity.

Robusta coffee is the district's dominant cash crop and a key driver of the local rural economy. In 2024, Sa Thay cultivated 3,195.6 hectares of Robusta coffee, with production concentrated in communes such as Sa Nhon and Ya Ly. Earlier estimates recorded 2,939 hectares producing approximately 5,746 tonnes, reflecting rapid area expansion in recent years[7]. Total green bean output in 2024 reached 7,470 tonnes, produced on 3,195.6 hectares, of which 2,681.3 hectares were in the productive stage.[8]

As a result, Sa Thay now accounts for around 10% of Kon Tum Landscape's total coffee area (31,550 hectares), underscoring its growing role within the provincial coffee sector. However, neighbouring districts such as Dak Ha District remain dominant, contributing approximately 45% of the provincial coffee area, with Robusta accounting for around 54% of the total area planted with Robusta.[9]

Coffee area expansion has proceeded despite the absence of an official district-level expansion plan. In 2024 alone, farmers newly planted an additional 295.6 hectares, mainly through the conversion of ageing rubber plantations and low-productivity fruit orchards[10]. While this shift has improved land-use efficiency and short-term farm incomes, it has important implications for land use and environmental sustainability. In particular, coffee cultivation on steep slopes, often without adequate soil and water conservation measures, has increased risks of soil erosion, land degradation, and biodiversity loss.

7 Desk review and Tool development
8 Report of Sa Thay DAE
9 Report on socioeconomic 2024 and orientation 2025, Kon Tum
10 Report of Department of Agriculture and Environment Sa Thay district

Production systems in Sa Thay are highly commercialized and relatively productive. In 2024, average yields reached around 10 tonnes per hectare of fresh cherries, equivalent to 2.79 tonnes per hectare of green beans. Yield performance varies widely across farms. Well-managed plantations achieve 20–24 tonnes per hectare of fresh cherries (4–5 tonnes per hectare green bean equivalent), indicating substantial scope to improve productivity and value capture through better farm management and climate-smart practices. Farmers typically plant high-yielding clonal Robusta varieties, including TR4, TRS1, and TR9, sourced from certified nurseries and established at standard densities of approximately 1,100 trees per hectare.

At the same time, structural constraints are becoming increasingly binding. Most plantations rely on sprinkler irrigation systems that meet only around 20% of crop water requirements. The 2024 heatwave exposed acute water stress as local streams and reservoirs dried up. Ferralsols and Oxisols dominate local soils, increasing erosion risks and dependence on chemical fertilisers. Post-harvest infrastructure remains limited, and most farmers sell fresh cherries to collectors for processing outside the district. Together, these constraints limit local value addition, weaken quality control, and reduce opportunities for market differentiation.

Against this backdrop, farmers increasingly adopt intercropping with durian and macadamia. This approach offers early opportunities for diversification, improved climate resilience, and more conservation-compatible coffee production (Figure 3).

Figure 3: Transect mapping of Sa Thay farming system


Photo: SNV

3.2. Differential livelihood contributions and economic dependence on coffee

Coffee plays markedly different socio-economic roles in Dak Glei and Sa Thay due to contrasting livelihood structures, market integration, and risk exposure.

In Dak Glei, coffee contributes only 10–30% of household income and forms part of a diversified livelihood system combining subsistence crops, forest-based activities, and off-farm income. In contrast, coffee is the primary livelihood source in Sa Thay, accounting for over 70% of household income (71.8% from coffee, 11.6% from rubber, and 16.7% from other sources).

Households in Dak Glei rely on cassava, acacia, Litsea cubeba, cattle, seasonal labour, Non-Timber Forest Products (NTFPs), and Payments for Forest Environmental Services (PFES), which provide an important buffer against market and climate shocks. Small farm sizes (typically <2 ha), limited access to credit, and low input use constrain coffee profitability and value addition, with most farmers selling fresh cherries or small volumes of sun-dried coffee.

In Sa Thay, larger coffee holdings (commonly >2 ha) and higher levels of commercialisation generate substantially higher returns. Well-managed farms earn 540–648 million VND/ha/year, while improved sustainable models can achieve net profits of up to 489 million VND/ha. However, high dependence on a single crop increases exposure to market risks: a VND 5,000/kg price decline can reduce household income by over 100 million VND/ha. Limited local processing continues to constrain value addition, despite the sector's potential to generate employment through expanded roasting and processing.

These contrasts point to distinct strategic priorities: diversification, agroforestry, credit access, and cooperative development in Dak Glei, versus processing infrastructure, irrigation efficiency, selective harvesting, traceability, and branding in Sa Thay.

3.3. Gender and social inclusion

Gender roles, access to productive resources, and levels of social inclusion shape how women and ethnic minorities participate in and benefit from coffee value chains in Kon Tum Landscape. These dynamics differ markedly between Dak Glei and Sa Thay, and have direct implications for equity, resilience, and value chain performance.

In Dak Glei, women undertake most on-farm agricultural work, while men more often engage in wage labour or forest-based activities. Women commonly manage household finances and participate in decision-making; however, their engagement in coffee value chains is constrained by structural barriers. These include high illiteracy rates (up to 26.56%), limited land ownership, restricted access to credit, and weak market linkages. In the district, women play a central role (60 – 70%) in coffee cultivation and agroforestry practices, positioning them as key actors in sustainable Arabica production and climate-smart systems, despite limited opportunities for value addition and formal market engagement.

In Sa Thay, gender roles within coffee production remain strongly differentiated. Labour division follows conventional gender norms: men lead land preparation, planting, harvesting, and market engagement, while women shoulder substantial unpaid care work and remain underrepresented in cooperatives and price negotiations. Joint land-use certificates are more common than in Dak Glei, and women's access to credit is relatively better, though still limited, particularly for female-headed households. Women's limited involvement in selective harvesting, post-harvest handling, and traceability constrains both gender equity and overall value chain performance. Strong dependence on a single crop heightens (over 70% of household income from coffee) livelihood vulnerability, amplifying the economic consequences of unequal participation and limited decision-making power.

Within Sa Thay, pronounced disparities exist between indigenous ethnic minority farmers and migrant Kinh farmers in farm size, production practices, productivity, and market access (Table 1). Indigenous farmers typically operate small, fragmented plots using traditional, low-input practices and have limited access to standards, cooperatives, and formal markets. In contrast, migrant Kinh farmers manage larger farms, adopt higher-yielding varieties, apply more intensive techniques, and maintain stronger linkages with traders and certification schemes.

Table 1: Comparative Analysis of Coffee Production Between Indigenous and Migrant Farmers in Sa Thay

Criteria	Indigenous Farmers (Ethnic Minorities)	Migrant Farmers (Kinh Ethnic Group)
Main ethnic groups	Xo Dang, Gia Rai	Kinh (mostly from northern province)
Farming model	Smallholder, subsistence-based, traditional	Farm-scale, commercial-oriented
Coffee farm size	Small plots (often <1 ha), scattered	Larger holdings (3–10 ha, some >10 ha)
Coffee varieties used	Traditional, low-yield varieties	New high-yielding varieties (e.g., TRS1, TRS4, TR9)
Cultivation techniques	Basic, low input, minimal irrigation or pest control	Intensive farming with better technical application and inputs
Productivity	Low (typically <2.5 tonnes of fresh cherry/ha)	Higher yields (3–4 tonnes of fresh cherry/ha with better care)
Mechanisation	Minimal to none	Partial mechanization (tillage, irrigation, harvesting)
Market access	Sell to local collectors without contracts	Often connected to cooperatives or private traders because of near the street
Quality standards	Do not follow VietGAP or OCOP; limited awareness	Some meet OCOP 3-star or VietGAP standards
Environmental risks	Risk of deforestation, soil erosion, poor water retention	Fertilizer/pesticide runoff if improperly managed
Improvement potential	High, with access to training, inputs, and market linkage	High, especially in value addition and compliance with export regulations

In both districts, gender and social inclusion are closely linked to production choices, access to resources, and exposure to risk. Unequal participation in decision-making, post-harvest processes, and market-facing activities limits not only gender equity but also the efficiency and resilience of coffee value chains.

4. FROM FARM TO CUP: MARKET SYSTEM AND VALUE CHAIN

Although operating within the same global coffee market, the value chains in Dak Glei (Arabica) and Sa Thay (Robusta) differ fundamentally in scale, organisation, and value capture. Dak Glei represents a smallholder-based Arabica system closely linked to forest landscapes and informal domestic markets, while Sa Thay functions as a high-volume Robusta hub integrated into national supply chains dominated by immediate cash transactions. In both districts, producers capture only a small share of final value, but upgrading pathways differ.

Arabica production in Dak Glei is dominated by an informal “bucket coffee” chain, accounting for over 85% of output. Farmers sell fresh cherries with low ripeness (50–60%) through village grocery stores. These intermediaries provide short-term credit but offer no incentives for quality improvement or sustainability.

A small specialty segment, representing 10–15% of output and led by cooperatives such as Phuong Hoang, purchases highly ripe cherries (>90%) and undertakes basic processing and branding for the domestic specialty market. Net profits from this model are more than ten times higher than selling fresh cherries. However, expansion is constrained by limited cooperative capacity, inadequate drying and storage infrastructure, and EUDR-related risks linked to fragmented land tenure and forest proximity. The Arabica value chain remains largely linear and informal (Figure 4).

Figure 4: Arabica Coffee Supply Chain In Dak Glei District

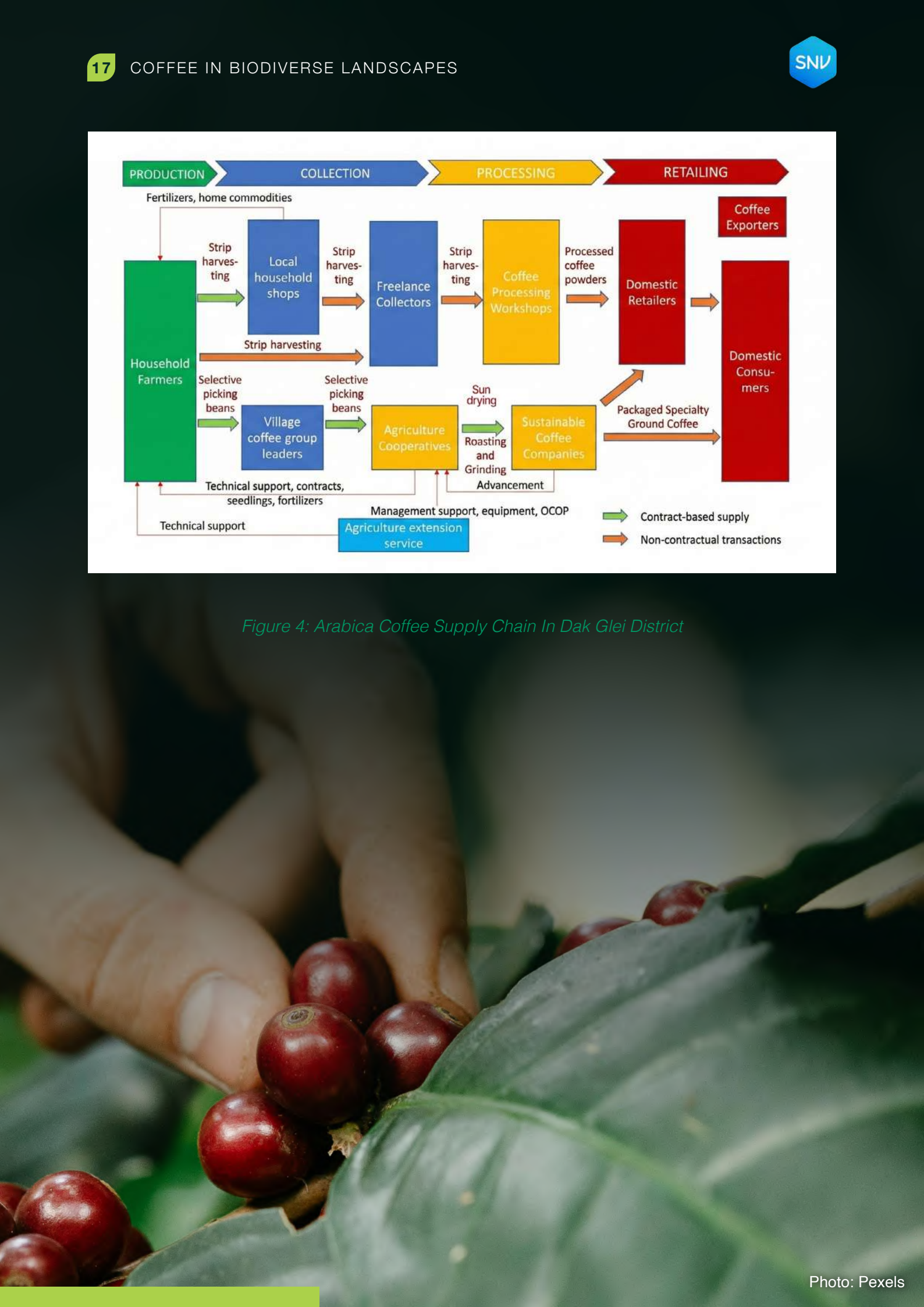

Photo: Pexels

Case Study: Phuong Hoang Eco-Agriculture Cooperative

Phuong Hoang Eco-Agriculture Cooperative illustrates local value addition within the Arabica coffee chain in Dak Glei. Led by Ms. Huynh Thi Phuong, the Cooperative has 40 members, mostly ethnic minority women from Xop, Dak Man, and nearby communes.

The Cooperative prioritises quality over volume, purchasing cherries harvested at over 90% ripeness and offering commitment contracts and price premiums. It processes specialty coffee for the domestic market and has developed two OCOP 3-star products, specialty coffee and dried macadamia, with annual revenues of around 500 million VND. Sales rely primarily on digital channels, including Shopee and TikTok, complemented by limited linkages with specialty roasters in Gia Lai.

Despite these achievements, Phuong Hoang lacks basic post-harvest infrastructure, particularly drying yards and storage facilities in high-rainfall areas such as Xop. Management systems remain informal, with limited bookkeeping and digital records. The Cooperative is not yet able to meet international sustainability standards, including 4C, RA, and the EUDR, restricting access to higher value markets and external investment.

Photo: SNV

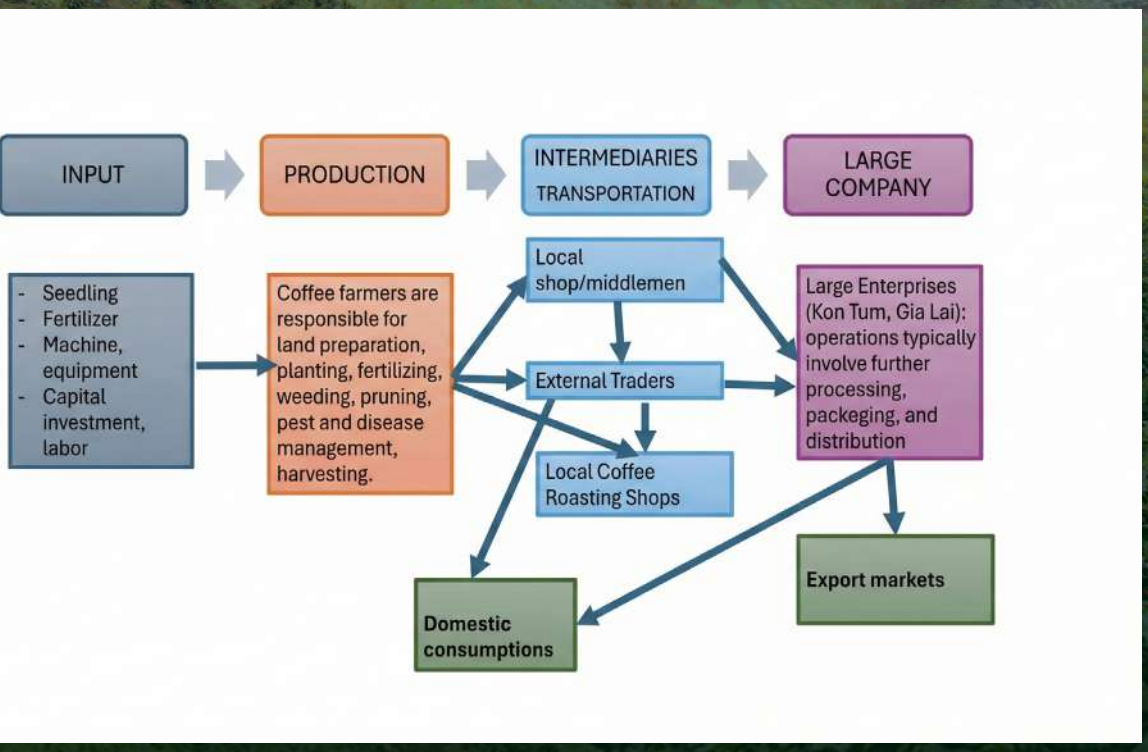

Figure 5: Coffee value chain in Sa Thay

In Sa Thay, over 90% of farmers sell fresh cherries to external traders, prioritising immediate cash returns over quality differentiation. As a result, certification, traceability, and local value addition remain limited.

Large national exporters sourcing from the district are largely certification- and EUDR-ready. However, reliance on local agents suppresses farmgate prices in Sa Thay. Small farmer-led wet mills demonstrate potential for decentralised aggregation but remain limited in scale. The Robusta value chain involves multiple interconnected actors (Figure 5).

Case Study: Vinh Hiep Company Limited – A Leading Exporter and Sustainability Benchmark

Vinh Hiep Company Limited, headquartered in Gia Lai, is one of Vietnam's leading coffee exporters. Approximately 85% of its output is exported, including 43% to European markets. The company operates multiple processing facilities, including a green coffee factory with a capacity of 200,000 tonnes per year.

Around 70% of Vinh Hiep's coffee is certified under schemes such as 4C and RA. With technical support from IDH, the company developed a digital area management and traceability application, enabling EUDR-ready exports from late 2024. A dedicated Sustainable Coffee Department oversees farmer training and social issues, including household financial management and women's labour participation.

While Vinh Hiep's main sourcing areas are in Gia Lai, the company also sources Robusta from Sa Thay and Dak Ha through local agents. Long transport distances reduce farmgate prices in Sa Thay, despite transparent purchasing policies. Priority interventions identified by the company include improved quality measurement, local drying yards and processing

Across both districts, value capture increases sharply with quality differentiation and processing. Evidence from Phuong Hoang Cooperative shows that roasted specialty coffee generates profits more than ten times higher than fresh cherry sales. Converting even 15% of total output into specialty or value-added products could increase local value retention by two to three times. Key bottlenecks remain the dominance of informal trader-led markets, limited post-harvest infrastructure, weak cooperative governance, and low readiness for sustainability standards (4C, RA) and the EUDR.


Photo: SNV

5.COFFEE PRODUCTION AND MARKET SYSTEM POSITIONING

This integrated SWOT analysis synthesises product characteristics, market readiness, and market system dynamics for coffee production in Dak Glei (Arabica) and Sa Thay (Robusta), providing a consolidated basis for strategic intervention design (Table 2)

Table 2. SWOT Analysis of the Coffee Value Chain in Dak Glei and Sa Thay

Dimension	Dak Glei	Sa Thay
Strengths	• High-altitude agroecological conditions suited to quality Arabica • Low use of fertilisers and pesticides, enabling organic and agroforestry-based systems • Forest-adjacent landscape supports biodiversity-compatible production • Emerging specialty initiatives and cooperatives with women's participation • Government support for cold-climate coffee development	• High dependence on coffee income, increasing vulnerability to shocks • Very limited value addition; over 95% sold as fresh cherries • Weak and largely nominal cooperatives • Low awareness of quality, certification, and traceability requirements (RA, 4C, EUDR) • Inefficient irrigation and pest management practices
Weaknesses	• Low productivity due to limited investment, capital access, and technical capacity • Fragmented production and insufficient volumes for export markets • Weak processing capacity and limited post-harvest infrastructure • Remote location and high transport costs • Cooperatives remain at an early stage with limited business and market skills	• High dependence on coffee income, increasing vulnerability to shocks • Very limited value addition; over 95% sold as fresh cherries • Weak and largely nominal cooperatives • Low awareness of quality, certification, and traceability requirements (RA, 4C, EUDR) • Inefficient irrigation and pest management practices
Opportunities	• Growing demand for organic and specialty Arabica • Donor and government support for training, improved varieties, and market linkages • Declining returns from cassava and fruit crops encourage conversion • Administrative restructuring may strengthen local coordination if effectively implemented	• Rising demand for traceable, deforestation-free Robusta under EUDR • Increasing private-sector interest in certified sourcing areas • Investment potential in processing, drying, roasting, and branding • Adoption of climate-smart and water-saving practices • Inclusive value chain models engaging women and ethnic minorities
Threats	• Labour shortages linked to youth outmigration • Weak extension services during administrative transitions • Climate risks (drought, frost, erosion, landslides) • Market price volatility and limited access to affordable finance	• Increasing climate stress and water scarcity • Price volatility linked to spot-market dependence • Soil degradation from chemical overuse • Environmental and social risks from uncoordinated expansion

The integrated SWOT analysis highlights two distinct but complementary development pathways. In Dak Glei, Arabica production is best positioned for quality-led growth through organic, agroforestry-based systems linked to specialty markets and forest conservation. In Sa Thay, Robusta systems require productivity upgrading and value addition through improved irrigation, processing, traceability, and stronger market integration to reduce vulnerability and meet emerging regulatory requirements.

6. CLIMATE, LANDSCAPE RISKS AND MARKET READINESS


Photo: SNV

Although both Dak Glei and Sa Thay benefit from favourable agroecological conditions, these districts face different but interconnected climate, environmental, and regulatory risks. These risks increasingly influence biodiversity outcomes, water security, and the long-term viability of coffee-based livelihoods. The contrast between forest-adjacent Arabica systems and commercially oriented Robusta production shapes both exposure to risk and readiness for sustainable markets.

Climate and environmental risk profiles

In Dak Glei, Arabica coffee is mainly grown in forest-adjacent areas near the Ngoc Linh Nature Reserve, a nationally important biodiversity and watershed landscape. Production risks here relate less to yield stability and more to land-use practices and post-harvest constraints. Many coffee plots are located on or near formerly forested land and lack formal Land Use Right Certificates (LURCs). This situation increases risks of biodiversity degradation and exposes farmers to potential market exclusion under the EUDR.

The local climate supports high-quality Arabica, with cool temperatures and high humidity. However, prolonged rainfall during the harvest period severely limits on-farm drying. Farmers struggle to dry coffee cherries effectively, leading to post-harvest losses, higher transport costs, and quality deterioration during the rainy season.

In contrast, Robusta production in Sa Thay faces more direct climate related yield risks. Dry season water scarcity is the most critical constraint, especially during drought years such as 2024, when irrigation capacity becomes severely limited. Seasonal frost events between December and February further reduce yields, particularly in unshaded monoculture systems. In this context, forest conservation plays a critical role in maintaining watershed functions that support irrigation, linking landscape management directly to climate resilience and production stability.


Photo: SNV

Enabling environment and market readiness gaps

Despite these differing risk profiles, the assessment identifies a consistent gap between policy intent and operational readiness in both districts (Table 3).

In Dak Glei, provincial and district authorities have established policy frameworks to support quality upgrading and coffee branding, including Conclusion No. 1228-KL/TU (2023). Several cooperatives, such as Phuonng Hoang, actively engage in value addition and have developed limited OCOP-certified products. However, weak land tenure security, the absence of farm-level geolocation data, and the lack of batch separation in forest-adjacent areas create a high risk of EUDR non-compliance. Even specialty coffee faces the risk of exclusion due to difficulties in demonstrating deforestation-free origin and preventing product mixing between certified and non-certified batches.

In Sa Thay, readiness for sustainable and compliant coffee production remains at an earlier stage. Sustainability policies have not been effectively localised, and institutional support for certification, traceability, and EUDR is largely absent. The value chain remains highly informal. More than 90% of coffee is sold as fresh cherries without grading, documentation, or proof of origin. As a result, major certified exporters avoid direct sourcing from the district due to insufficient compliance systems, weak traceability, and limited volume aggregation.

Across both districts, several structural constraints limit access to higher-value and sustainable markets. These include insecure land tenure, the absence of farm-level GPS mapping and digital traceability systems, limited participation in recognised certification schemes such as 4C and RA, and weak cooperative governance and management capacity. Together, these gaps prevent climate and environmental risks from being managed through market-based incentives.

Photo: Unsplash

Table 3. Climate, landscape risks and market readiness

Dimension	Dak Glei	Sa Thay
Landscape & biodiversity risk	High risk in forest-adjacent buffer zones near Ngoc Linh Nature Reserve; high sensitivity to land-use change and biodiversity loss	Moderate direct forest pressure; strong dependence on watershed and forest ecosystem functions
Climate exposure	Moderate yield risk; high post-harvest losses caused by high humidity during the harvest period	High exposure; drought and seasonal frost (Dec–Feb) directly affect yields
Water stress	Currently low but likely to increase with area expansion and infrastructure limits	Severe dry-season water stress; irrigation-dependent production systems
Key production vulnerabilities	Land-use uncertainty; lack of LURCs; drying and transport constraints during rainy season	Irrigation dependency; frost damage in unshaded monoculture systems
Production system characteristics	Smallholder, forest-adjacent, low-input Arabica systems	Larger farms (often >2 ha); high-yield Robusta varieties (TR4, TRS1, TR9); commercially oriented monocultures
Certification & standards	No international certification (4C, RA, UTZ, Organic). Limited 3-star OCOP products. High risk of mixing certified and non-certified coffee	No certification schemes applied (4C, RA, UTZ, Organic). Coffee sold entirely through informal channels; certification not demanded by buyer
Traceability & batch control	Not implemented. No batch separation. QR codes applied only to OCOP products. High risk of origin mixing	Absent. >90% of coffee sold as fresh cherries without grading, documentation, or proof of origin
Land tenure, mapping & EUDR readiness	Many plots near forest areas lack LURCs and farm-level geolocation data; high deforestation and EUDR compliance risk	Many plots lack land titles and GPS mapping; coffee not included in provincial traceability pilots; very low EUDR readiness
Policy direction	Clear provincial and district roadmap under Conclusion No. 1228-KL/TU (2023), with targets to 2025 and vision to 2030 (area expansion, quality upgrading, branding)	No specific district level policy or incentives for certified or traceable coffee; policy focus remains on basic production targets
Institutional support	Some support for cooperatives (equipment, OCOP promotion, trade fairs, extension on sustainable cultivation)	Extension services focus on agronomy only; no mandate or capacity for certification or traceability
Role of cooperatives	Active but capacity-limited; lack digital systems, certification readiness, and professional governance	Mostly nominal cooperatives; weak market orientation; no role in quality control or traceability
Private sector engagement	Linked to small specialty buyers on limited volumes; no export-scale value chain	Major certified exporters avoid direct sourcing due to distance, volume constraints, and lack of compliance

The combined effects of climate exposure, landscape sensitivity, and limited market readiness indicate that coffee development in Kon Tum Landscape requires an integrated and location specific approach. Improving productivity or climate resilience alone will not deliver sustainable livelihood outcomes unless compliance, traceability, and market access constraints are addressed in parallel. Targeted investments that link land mapping, traceability, cooperative strengthening, and forest-compatible production models are therefore critical to building inclusive, deforestation free, and market compliant coffee value chains.


Photo: SNV

Coffee processing machinery and transportation vehicles


FCA Coffee Roaster


Photo: SNV

FCA Branded Vehicles

7. CONCLUSION AND RECOMMENDATIONS

7.1 Strategic conclusion

Coffee has clear potential to support sustainable livelihoods in Kon Tum Landscape, particularly in Sa Thay and Dak Glei, while contributing to climate resilience and forest-compatible land use in the Northern Central Highlands of Vietnam. However, this potential remains largely unrealised. Productivity and quality are constrained by outdated practices, inconsistent harvest and post-harvest handling, weak market integration, and limited readiness for emerging sustainability and deforestation free sourcing requirements.

Climate risks further compound these challenges, though their nature differs across locations. In Sa Thay, recurrent drought and water stress directly affect yields and production stability. In Dak Glei, high rainfall, steep terrain, and difficult access conditions increase risks related to post-harvest handling, drying, and transport, particularly in forest-adjacent areas. These differentiated risk profiles underscore the need for context specific, climate responsive solutions rather than uniform interventions.

The assessment confirms that Sa Thay and Dak Glei represent two structurally distinct coffee systems requiring tailored pathways. Sa Thay functions as a high-volume Robusta production zone integrated into national supply chains, but characterised by informal trading, limited quality control, and weak traceability. Coffee accounts for over 70% of household income, making farmers highly exposed to price volatility and climate shocks. By contrast, Dak Glei represents a fragmented, smallholder-based Arabica system embedded in forest-adjacent landscapes, where coffee contributes only 10–30% of household income and forms part of diversified livelihoods that include subsistence crops and forest-based activities.

These findings highlight the importance of adaptive, locally grounded interventions that strengthen production foundations, enable cooperative led value addition, and prepare farmers and local institutions for compliance with sustainability and legally compliant, deforestation-free sourcing requirements. With appropriate sequencing, risk management, and partnerships, coffee can transition from a vulnerable livelihood to a more resilient, inclusive, and climate-smart land-use option within the Kon Tum landscape.

Photo: Pexels


Photo: Freepik

7.2. Recommendation to make coffee work for people and forests

The assessment shows that coffee can support livelihoods and forest protection in the Kon Tum Landscape, but only if the way coffee is produced, organised, and sold changes in practical and inclusive ways. The following recommendations highlight what needs to happen next to turn potential into lasting impact.

Start with better coffee on the farm: The biggest losses in value begin at the farm. Poor harvest timing, basic post-harvest handling, and growing climate stress mean farmers often work hard but earn little. Improving quality and resilience at farm level must be the first step. Farmers need support to adopt simple, climate-smart practices that work in local conditions, such as harvesting coffee at the right ripeness, conserving soil and water, integrating trees into coffee plots, and managing pests sustainably. Practical demonstration plots and farmer-to-farmer learning can help turn knowledge into action quickly. When coffee quality improves at the source, farmers are better positioned to benefit from any market opportunity that follows.

Make cooperatives work for farmers, not just buyers: Without strong organisation, smallholders remain dependent on informal traders and volatile prices. Cooperatives should become the engine of value creation, not just collection points. This requires investing in basic, decentralised post-harvest infrastructure such as drying areas, grading and weighing equipment, and small-scale processing where feasible. Equally important is strengthening cooperative management so that members trust their organisations, understand costs and benefits, and receive real services in return. When cooperatives function well, more value stays in the community and incomes become more predictable.

Build traceability step by step, not all at once: New market rules around sustainability and deforestation are often seen as a threat by smallholders. In reality, they can become an opportunity if approached gradually and realistically. Rather than pushing full compliance immediately, traceability should start with simple steps. These include mapping farms, keeping basic records, and clearly defining where coffee is sourced. Over time, this builds confidence and capacity while reducing the risk of excluding farmers from markets. A step-by-step approach helps ensure that new requirements support inclusion rather than create new barriers.

Put women and ethnic minorities at the center of change: Women and ethnic minority farmers already do much of the work in coffee production, yet they capture only a small share of the benefits. This imbalance weakens both livelihoods and long-term sustainability. Future efforts should create practical economic roles for women and ethnic minorities in quality control, processing, and value-added activities. Targeted training and women-led groups within cooperatives can help ensure that upgrading the value chain expands opportunities instead of reinforcing existing inequalities. Inclusive systems are more resilient and deliver broader social benefits.

Connect markets, livelihoods, and forest protection: Coffee will only deliver long-term benefits if economic gains go hand in hand with environmental responsibility. Clear sourcing areas, forest-friendly production systems, and agroforestry practices can reduce pressure on forests while supporting stable incomes.

By linking better farming, stronger cooperatives, gradual compliance, and inclusive participation, coffee can become part of the solution. It can support rural livelihoods, strengthen climate resilience, and contribute to protecting the forest landscapes on which communities depend.

Photo: SNV

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