

Enhancing credit access for “missing middle” and last-mile borrowers in African coffee value chains: Evidence from five coffee-producing countries

Authors

Morris Akiri
Fredrick Mbugua
Adugna Debela
Frederick Kawuma
Celestin M. Gatarayiha
Charles Agwanda

Daniel Karanja
Denis Seudieu
Negussie E. Gurmessa
Hyacinthe Founsié
Rahab Njunge
Solomon S. Rutega
Monica K. Kansiime

July 2026



Credit: Negussie Efa, CABI



The copyright holder of this work is CAB International (trading as CABI). It is made available under a Creative Commons Attribution-Non-commercial Licence (CC BY-NC). For further details please refer to <http://creativecommons.org/licenses>.

This CABI Working Paper was internally peer-reviewed. It may be cited as follows:

Akiri, M., Mbugua, F., Debela, A., Kawuma, F., Gatarayiha, C.M., Agwanda, C., Karanja, D., Seudieu, D., Gurmessa, N.E., Founsié, H., Njunge, R., Rutega, S.S. and Kansiime, M.K. (2026) Enhancing credit access for “missing middle” and last-mile borrowers in African coffee value chains: Evidence from five coffee-producing countries. *CABI Working Paper* 38, 24 pp. <https://dx.doi.org/10.1079/CABICOMM-62-8197>

Morris Akiri, CABI, Canary Bird, 673 Limuru Road, Muthaiga, PO Box 633-00621, Nairobi, Kenya. Email: m.akiri@cabi.org; ORCID: 0009-0002-0515-3551

Fredrick Mbugua, Canary Bird, 673 Limuru Road, Muthaiga, PO Box 633-00621, Nairobi, Kenya. Email: f.mbugua@cabi.org; ORCID: 0000-0002-3168-3671

Adugna Debela, Coffee and Tea Authority of Ethiopia. Email: adugnad16@gmail.com

Frederick Kawuma, IACO, Côte d'Ivoire. Email: fkawuma@gmail.com

Celestin M. Gatarayiha, IACO, Côte d'Ivoire. Email: cgatarayiha@iaco-oiac.org

Charles Agwanda, CABI, Canary Bird, 673 Limuru Road, Muthaiga, PO Box 633-00621, Nairobi, Kenya. Email: charles.otienoagwanda@gmail.com

Daniel Karanja, CABI, Canary Bird, 673 Limuru Road, Muthaiga, PO Box 633-00621, Nairobi, Kenya. Email: d.karanja@cabi.org; ORCID: 0000-0001-8167-7395

Denis Seudieu, ICO, United Kingdom. Email: Seudieu@ico.org

Negussie Efa Gurmessa, CABI, Canary Bird, 673 Limuru Road, Muthaiga, PO Box 633-00621, Nairobi, Kenya. Email: e.negussie@cabi.org; ORCID: 0000-0002-3771-5275

Hyacinthe Founsié, PEA-Jeunes - Programme de Promotion de l'Entreprenariat Agropastoral des Jeunes (FIDA), Cameroon. Email: founsie@yahoo.com

Rahab Njunge, CABI, Canary Bird, 673 Limuru Road, Muthaiga, PO Box 633-00621, Nairobi, Kenya. Email: r.njunge@cabi.org; ORCID: 0000-0002-7569-281X

Solomon S. Rutega, IACO, Côte d'Ivoire. Email: srutega@iaco-oiac.org

Monica K. Kansiime, CABI, Canary Bird, 673 Limuru Road, Muthaiga, PO Box 633-00621, Nairobi, Kenya. Email: m.kansiime@cabi.org; ORCID: 0000-0003-1036-8469

Front page photo: Smallholder farmer drying semi-washed coffee in Ethiopia. Photo credit: Negussie Efa Gurmessa, CABI.

Table of contents

Acronyms and abbreviations	4
Summary	5
1 Introduction.....	5
2 Methodology	7
2.1 Countries covered by the study	7
2.2 Data collection	7
2.2.1 Literature review	7
2.2.2. Survey of value chain actors	8
2.3 Data analysis	8
3 Results and discussion.....	8
3.1 Agriculture financing landscape in Africa	8
3.2 Financing gaps in the coffee sectors in selected countries	10
3.3 The anatomy of the financing gap and finance access by the “missing middle” and last-mile borrowers.....	10
3.3.1 Structural misalignment.....	11
3.3.2 Institutional gaps in risk management	11
3.3.3 Individual capacity gaps	12
3.4 Emerging innovations for increasing finance access by the “missing middle” and last-mile borrowers.....	12
3.4.1 Alternative credit scoring and alternative collateral.....	13
3.4.2 Risk-sharing mechanisms and credit guarantees	13
3.4.3 Bundled financial services	14
3.4.4 Leveraging information and communication technology (ICT) and mobile payment platforms.....	14
3.4.5 Blended finance	14
3.5 Enabling conditions for the adoption and sustainability of innovative financing	15
3.5.1 Policy support and legal reforms to incentivize agri-finance innovation	16
3.5.2 Public–private partnerships and institutional collaboration.....	16
3.5.3 Foundational investments in human capital and enterprise	17
3.5.4 Supply-side reforms for tailored and accessible financial products	17
4 Conclusions and recommendations	18
Acknowledgements.....	19
References	19

Acronyms and abbreviations

AfDB	African Development Bank
ENABLE	Enhancing Access to Benefits while Lowering Emissions (World Bank project)
IACO	Inter-African Coffee Organisation
ICO	International Coffee Organization
IFAD	International Fund for Agricultural Development
IFC	International Finance Cooperation
SACCOs	Savings and Credit Cooperatives Organizations
SMEs	Small and medium-sized enterprises
USD	United States dollar
VSLA	Village Savings and Loan Association

Summary

This study examines the financing landscape for smallholder farmers and small and medium-sized enterprises (SMEs), often referred to as the "missing middle", and last-mile borrowers within Africa's coffee value chain, with the specific objective of identifying pathways to enhance their access to commercial lending. Through a mixed-methods approach combining an extensive desk review with primary data from 101 key informant interviews across five African countries, the research diagnoses barriers to accessing financing for these groups and identifies context-specific innovations to address them. The results reveal that just a quarter of farmers' credit needs is currently met by both formal and informal institutions, with commercial banks contributing only 7% of formal credit. Key barriers, validated through interviews, include prohibitively high interest rates (10–30%), rigid collateral requirements that disproportionately exclude women and youth, and a fundamental mismatch between loan terms and coffee production cycles. Emerging financial innovations, such as alternative credit scoring using non-traditional data, risk-sharing guarantee schemes, and digital lending platforms, present promising pathways to de-risk agricultural lending. The study concludes that transitioning to sustainable commercial finance requires coffee-specific financial products, supported by policy reforms to recognize movable collateral, strategic public–private partnerships, and integrated capacity building for both farmers and financial institutions. Implementing these tailored solutions is crucial for building more resilient, productive, and inclusive coffee value chains across the continent.

Key words: collateral, blended finance, coffee, inclusive finance, last-mile borrowers, missing middle, women.

1 Introduction

Coffee plays an important role in the economies of producing countries in Africa, providing livelihood support to more than 12 million households continent-wide (ICO, 2015; Krishnan, 2017). The commodity is the mainstay of rural economies in several countries. For example, over 38% of the population in Burundi, 23% in Tanzania, 22% in Uganda, 17% in Côte d'Ivoire, 14% in Ethiopia, and 13% in Cameroon depend on coffee farming (IACO, 2020). Coffee also plays a key role in women's economic empowerment: 20% to 30% of coffee farms are female-operated and up to 70% of labour in coffee production is provided by women, depending on the region (ICO, 2018). Coffee is also a key source of foreign currency earnings for many of the producing countries, accounting for over 30% of their total export earnings (AfDB, 2017; Wege, 2018). For example, the crop is a major pillar in the rural economy of Ethiopia, generating about 30–35% of the country's total export earnings and contributing to the livelihoods of 25% of the country's population (USDA and GAIN, 2023). Similarly, in Uganda, coffee is an important livelihood source, being grown by over 1.8 million households and employing over 12 million people (Nalunga, 2021). Evidence shows that households engaged in coffee production have a lower incidence of poverty, and that coffee production remains a pro-poor intervention (Mbowa *et al.*, 2017).

Despite the vital role the commodity plays in the economies of producer countries, coffee production and exports from Africa have been declining over several decades because of a decline, or stagnation, in production in many countries. The quality and quantity of coffee from African countries are below the biological potential of the farmed coffee varieties, given the genetic diversity and climatic conditions of the production. In Kenya, for example, Arabica

coffee productivity hovers around 2–3 kg of cherry per tree, against a potential of 30 kg of cherry per tree (Muriithi, 2016). Ethiopia and Uganda are exceptions to the declining production trends, registering significant growth in production in the last few years. However, even in these two countries the productivity of coffee still lags below the potential. The level of productivity in Ethiopia, for example, is estimated to be 40% less per hectare than in Uganda and just one-third of what farmers in Colombia produce (Technoserve, 2023).

The observed decline in coffee production across many African countries is largely attributed to the limited financial capital available to smallholder farmers, especially women, who have systematically lower access to resources than men (ICO, 2018). This hinders their ability to sustain both production and their livelihoods between harvests. Typically, coffee is harvested only once a year, which means farmers receive their income annually. During the months between these payments, they must cover substantial production expenses, including the cost of fertilizers, pruning, harvesting, storage, and other costs. Due to the strain of daily expenses and limited cash flow, farmers often forgo essential maintenance and agronomic practices, leading to lower quality and reduced yields (Maundu and Karugu, 2018; Ullah *et al.*, 2022), as well as reduced investment in local-level value addition (Gichichi *et al.*, 2019). Some even choose to exit coffee farming altogether. Compounding these challenges is the absence of effective incentive systems for the production and delivery of high-quality coffee cherries. Practices such as innovative cherry grading at processing facilities, payments based on cherry quality, or non-monetary incentives like long-term contracts for farmers committed to sustainable production methods are largely lacking (Clay *et al.*, 2018; Lemeilleur *et al.*, 2020).

While financing could help bridge this investment gap in coffee value chains, it remains persistently out of reach for most farmers in Sub-Saharan Africa. In particular, the financing landscape continues to overlook the specific needs of the “missing middle” and last-mile borrowers. The term “missing middle” is applied to commercial smallholder farmers and small to medium-sized enterprises (SMEs) and refers to the lack of capital appropriate for their risk profile and available in the amounts they need. They require larger sums than microfinance allows and longer terms (for equipment, irrigation, storage) but cannot meet the stringent requirements or provide the standardized collateral demanded by mainstream banks. Concurrently, the financing needs of last-mile borrowers, especially women, are also neglected. Last-mile borrowers are mostly located in remote regions, with limited physical infrastructure and underdeveloped technological systems, which hinders the effective delivery of financial services to them (Falola *et al.*, 2022; Weng *et al.*, 2022). This dual failure stifles investment in the very actors who are essential for upgrading value chains and improving rural livelihoods.

Initiatives to address the financing gap for farmers in Africa have primarily focused on non-commercial financing through development projects by non-governmental organizations or short-term government efforts aimed at boosting productivity or market competitiveness. Value chain financing is another important source of working capital funding, particularly for last-mile borrowers, but it is yet to gain traction in most coffee-producing countries. Value chain financing is mostly in-kind and includes advance purchase and pre-financing loans (iBAN and BOPIC, 2019) mortgaged against the farmer’s coffee as a guarantee (ICO, 2017). Farmers do not have a bargaining voice in this arrangement, being liquidity trapped, and are thus inclined to be price takers (Charles, 2023). Lending groups and credit cooperatives are alternative credit sources for small-scale farmers, reducing transaction costs, although the effectiveness of these lending arrangements has been mixed, mainly stemming from issues

in implementation. Mobile banking and digital finance have also played a crucial role in improving financial inclusion for farmers. Platforms like M-Pesa in Kenya have revolutionized the way farmers handle their finances by allowing them to save, borrow, and transfer money using their mobile phones (Ouma *et al.*, 2017).

In the quest for long-term sustainability, commercial lending is crucial. Commercial or market-based lending involves financial institutions and private sector entities providing financial services like credit, savings, payment systems, and insurance (among others) to farmers and agribusinesses. This approach not only ensures that farmers have access to sustainable financing solutions but also integrates them into formal financial systems, fostering economic resilience and stability. Boccaletti *et al.* (2024) show that access to market-based finance has a positive effect on a firm's growth, and in particular SMEs display relatively higher growth in fixed assets. Other studies, for example, Bruhn and Love (2014), Chaiya *et al.* (2023), and Sakyi-Nyarko *et al.* (2022) show positive linkages between access to finance and poverty alleviation.

This study examines the financing landscape of the coffee subsector in Africa, with a focus on understanding the barriers that hinder access to credit for the “missing middle” and last-mile borrowers. Drawing on data from five African coffee-producing countries, the study has employed a mixed-methods approach that combines an extensive review of existing literature and policy documents with key informant interviews from financial institutions, cooperatives, government agencies, and private sector actors. Based on this analysis, the study proposes a series of policy and institutional interventions to optimize credit access. These include legal and regulatory reforms, innovative lending mechanisms, and targeted capacity-building efforts aimed at supporting inclusive, sustainable coffee value chains and improving livelihoods for marginalized actors, including youth and women.

2 Methodology

2.1 Countries covered by the study

The study covers five African coffee-producing countries: Cameroon, Côte d'Ivoire, Ethiopia, Kenya, and Uganda. These countries were purposively selected to reflect a fair representation of the diversity of coffee-producing countries in Africa, including the main coffee species grown, Arabica and Robusta, and the various states of production trajectories (increasing, declining or stagnating) currently experienced in the continent.

2.2 Data collection

The study employed mixed methods, combining an extensive review of existing literature and interviews with key informants along the coffee value chain.

2.2.1 Literature review

A desk-based analysis was conducted to map the agricultural financing landscape in the selected countries and identify structural gaps in access for “missing middle” and last-mile borrowers within coffee value chains. Rather than cataloguing specific loan products, the review focused on understanding the systemic nature of the financing gap. It assessed the general features of the financial market, including the types of providers, prevailing lending practices, and typical terms, and analysed how these factors are misaligned with the operational realities and credit needs of smallholder farmers and agri-SMEs.

The review further examined the underlying demand-side and supply-side constraints contributing to this mismatch, and scoped existing and emerging financial innovations with potential to address these gaps. Findings from this desk study directly informed the design of the primary data collection tools, ensuring the fieldwork would probe the most critical barriers and opportunities identified in the literature.

2.2.2. Survey of value chain actors

Primary data were collected through key informant interviews using semi-structured guides. In-depth discussions were held with a diverse range of stakeholders, including financial service providers, coffee SMEs, farmers' organizations, regulators, development partners, and market actors (see Table 1). Interviews focused on current financing sources, the adequacy and terms of available credit, barriers to accessing commercial loans, and the credit-readiness of "missing middle" and last-mile borrowers. Insights from these interviews were used to triangulate and ground-truth findings from the desk study.

Table 1. Main categories of respondents interviewed during the field study.

Category of value chain actors	No. of respondents
Farmers' cooperatives	40
Farmers' unions	6
Financial service providers	22
Coffee micro enterprises and SMEs	16
Development partners	9
Regulators responsible for coffee industry development	8
Total	101

2.3 Data analysis

The information gathered through the desk review and key informant interviews was subjected to descriptive, content, and thematic analyses to provide insights into the underlying themes and patterns relevant to the financing landscape of the coffee value chains in the selected countries and to determine concrete interventions necessary to achieve optimal financing of the "missing middle" and last-mile borrowers through commercial loans. The findings from the desk review established an overview of the landscape of coffee production in Africa. Insights from the key informant interviews were then integrated to validate, contextualize, and provide concrete, country-specific examples for these themes, ensuring the analysis was grounded in the practical realities of coffee value chains.

3 Results and discussion

3.1 Agriculture financing landscape in Africa

Documented information indicates that access to agricultural finance remains a persistent and critical barrier in developing countries. While financing gaps impact all categories of farmers—commercial, semi-commercial, and subsistence—the challenge is most acute for smallholders, who often lack collateral, credit histories, or formal financial relationships. These farmers require finance across multiple dimensions: i) short-term working capital for production inputs such as seeds, fertilizer and labour; ii) medium- to long-term investment capital for improvements like irrigation, high-yield crop varieties, and post-harvest processing

infrastructure; and iii) household-level finance for non-agricultural needs and consumption smoothing.

Based on these categories of needs and farmer segmentation, the Mastercard Foundation research estimated a 200 billion US dollar (USD) financing need for an estimated 270 million smallholder farmers in Latin America, Sub-Saharan Africa and South and Southeast Asia (Mastercard Foundation, 2022). However, the gap between the financial needs of smallholders and the supply of financial services remains significant. Credit provided by informal and formal financial institutions, as well as value chain actors, currently only meets less than a quarter of farmers' credit needs (approximately USD 50 billion), with formal financial institutions supplying only USD 14 billion. Of the formal credit, commercial banks contribute about 7%, the vast majority coming from state banks largely active in Asia (64%), microfinance institutions (MFIs) (21%), non-government organizations, and social lenders primarily backed by concessional capital (Mastercard Foundation, 2022).

With a huge gap in formal lending, a large portion of the financial requirements of these value chain actors are financed through non-formal loan sources, including own savings, loans accessed from savings and credit cooperatives organizations (SACCOs) and credit from traders, family members, or friends (Mersha and Ayenew, 2018; Negasa *et al.*, 2019). Village savings and loans associations (VSLAs) function as revolving funds, allowing members to save optional amounts, access loans at specified interest rates, and participate in regular meetings and training sessions. They are designed for groups of women and offer loans with unrestricted use. They play a crucial role in closing the financing gap, particularly for women in agriculture.

As a vital source of working capital, value chain financing commonly serves last-mile borrowers through in-kind arrangements: farmers receive inputs and technical advice in exchange for committing their harvest to a specific buyer at a pre-agreed price (ICO, 2017). This model mitigates lender risk by securing repayment through future sales, but it creates a significant trade-off for farmers. Locked into the arrangement by immediate liquidity needs, smallholders often surrender pricing leverage, becoming passive price takers (Charles, 2023). Recognizing its potential to de-risk agricultural lending, commercial financial institutions are increasingly formalizing this model. In Kenya, for instance, products like the Cooperative Bank's supply chain financing and the Kenya Commercial Bank's contracted crop loan exemplify this trend, integrating value chain logic into mainstream banking offerings (Cooperative Bank, 2023; KCB, 2023).

Other emerging financing mechanisms include initiatives led by multilateral and regional development banks, international donors, national financial institutions, and private philanthropic foundations. These actors support smallholders and agricultural SMEs through a variety of models. Multilateral and regional development banks, such as the African Development Bank (AfDB), typically work with governments and commercial banks to de-risk agricultural lending through guarantees, blended finance instruments, and capacity building—making it more attractive for financial institutions to lend to agri-SMEs. International donors, such as the International Fund for Agricultural Development (IFAD), support inclusive rural finance by funding national programmes that build institutional capacity, expand outreach, and pilot innovative financing approaches targeted at underserved farming populations.

National financial institutions like the Uganda Development Bank, Kenya's Agricultural Finance Corporation, and the Development Bank of Ethiopia, offer concessional credit lines and targeted loan products for agri-SMEs, although access is often constrained by

bureaucracy and limited outreach to grassroots levels. Meanwhile, private philanthropic foundations such as the Gates Foundation, IKEA Foundation, and Mastercard Foundation fund digital finance innovations, data-driven credit scoring models, and last-mile delivery platforms that aim to bring financial services closer to smallholder farmers. Collectively, these mechanisms help close the agricultural finance gap by blending public, private, and philanthropic capital and tailoring financial solutions to the unique needs of small-scale actors in agriculture.

3.2 Financing gaps in the coffee sectors in selected countries

Gaps in financing agriculture in general mirror the dearth of financing for the coffee sector in most African coffee-producing countries. Key informant interviews strongly corroborate this documented challenge, with respondents from all five study countries consistently highlighting a severe, pervasive shortage of capital for smallholder coffee farmers and agri-SMEs. While the precise magnitude of the financing gap is unknown in most cases, interview data, combined with secondary sources, point to a deficit that is substantial and that constrains sector growth.

In Kenya and Uganda, secondary data provide indicative figures. In Kenya, for instance, the deficit in financing has been relatively consistent since 2016, when it was estimated at USD 100 million (Cheruiyot, 2016). Uganda, on the other hand, had an indicative demand of USD 332 million as of 2023, to revamp production and undertake expansion of the coffee area, and an additional USD 80.5 million to modernize primary processing for both Robusta and Arabica coffee (UCDA, 2023).

For Ethiopia, secondary estimates quantify the scale of needed investment. For example, the national requirement for farm rejuvenation through stumping is estimated at a staggering USD 702 million, given the total coffee area of 540,000 hectares (USDA and GAIN, 2023). Key informants provided critical ground-level perspectives on the current supply against this massive demand, reporting that only about 5% of Ethiopia's coffee production financing requirements are currently met through commercial loans. This aligns with broader evidence of a systemic credit gap in the country (Bastin and Matteucci, 2007).

In Cameroon and Côte d'Ivoire, specific national estimates are lacking, but evidence from key informant interviews and sector plans confirms significant deficits. For Cameroon, key informants provided data on cooperative-level needs, citing an average annual working capital requirement of USD 48,800 per cooperative. Extrapolated across the country's 52 coffee cooperatives, this suggests an annual coffee financing requirement of at least USD 3.6 million for working capital and investment, a figure key informants considered a significant underestimate. This perception is supported by external estimates, such as the Global Coffee Platform's assessment of a USD 10 million annual need over 10 years (GCP, 2016).

3.3 The anatomy of the financing gap and finance access by the “missing middle” and last-mile borrowers

Our analysis, based primarily on insights from key informant interviews, indicates that the persistent financing gap for smallholders, especially coffee farmers, is a direct outcome of three interlocking systemic failures: (1) structural misalignment between financial systems and the agricultural reality; (2) institutional gaps in risk management; and (3) individual-level capacity deficits.

3.3.1 Structural misalignment

Interview data revealed a fundamental mismatch between banking models and coffee farming, which manifests in three critical areas:

1. **Prohibitive interest rates on loans.** Key informants across all five study countries indicated that prohibitive interest rates were a primary barrier, citing rates of 10–21% in Kenya, 16% in Côte d'Ivoire, 18–21% in Ethiopia, and 25–30% in Uganda. Lenders attributed these rates to the substantial transaction costs of due diligence and monitoring for small, dispersed farmers. Lenders also cited the inherent risks of smallholder agriculture (given its susceptibility to climate shocks, yield variability, and volatile market prices) as the core justification for these rates. This perception is empirically supported by portfolio studies showing agricultural loan default rates are highly correlated with climate events (e.g. Karlan *et al.*, 2014), creating a rational basis for the risk premiums described by our study respondents.
2. **Mismatch between financial supply and agricultural demand cycles.** Interview data revealed that financial products persistently fail to reflect the seasonality of coffee farming, offering loans without grace periods aligned to harvests. This disconnect, which systematically transforms viable seasonal businesses into high-risk borrowers, is a recognized structural flaw in agricultural finance. A recent systematic review by Khan *et al.* (2024) confirms that temporal mismatch between credit repayment schedules and farm revenue cycles is a primary driver of financial exclusion in developing countries. This alignment of primary evidence with the broader literature underscores that the issue is not anecdotal but a systemic failure requiring that products be redesigned.
3. **Rigid collateral requirements.** Interview data confirm that stringent demands for formal land titles systematically disqualify the majority of borrowers. This problem is especially acute for women and youth, who respondents noted, own less than 15% of agricultural land. This finding illustrates a systemic bias that has been documented globally: as Doss (2013) argues, collateral requirements often embed historical gender inequalities in property rights into modern financial systems, creating a "catch-22" for women borrowers. Furthermore, the underdevelopment of movable collateral registries in most Sub-Saharan African countries, a gap noted by our study respondents, prevents the use of alternative productive assets, like stored crops or equipment.

3.3.2 Institutional gaps in risk management

Institutional weaknesses do not merely reflect risk—they actively construct and amplify it, transforming the inherent uncertainties of agriculture into prohibitive financial barriers. This is evident in three critical areas where systemic gaps erode the trust and transparency necessary for credit markets to function.

1. **Information asymmetry and the formality trap.** A foundational institutional failure is the dual problem of unenforceable contracts and pervasive informality of coffee enterprises in Africa, which together create an insurmountable information gap for lenders. Weak contract enforcement leads to side-selling risk, undermining the core trust required for structured value chain finance. Concurrently, the informality of coffee enterprises creates a fundamental information vacuum.
2. **Infrastructure deficits as a risk multiplier.** The physical remoteness of coffee farmers is compounded by institutional failures in regard to providing basic infrastructure, imposing a direct financial penalty on lending. Respondents estimated that poor rural roads and

limited digital access in Uganda, Ethiopia, and Tanzania increase transaction costs for due diligence and monitoring by 15–30%. For lenders, these costs make serving remote areas commercially unviable, despite viable demand.

3. **Cooperative governance.** Key informants indicated that weak governance within farmer organizations limits creditworthiness. This is a well-documented phenomenon. A study by Shiferaw *et al.* (2011) across multiple African countries demonstrated that the managerial capacity of farmer cooperatives is a stronger predictor of their access to formal finance and markets than the size of their membership. A poorly governed cooperative does not merely represent a single bad borrower: it signals a breakdown in the collective responsibility and peer monitoring that make group lending models work.

3.3.3 Individual capacity gaps

Rather than being secondary drivers, demand-side capacity constraints are primary and active drivers of financial exclusion. They create a self-reinforcing cycle where individual-level deficits validate systemic risk perceptions, locking smallholders out of formal markets. These gaps manifest most acutely in financial literacy, value chain positioning, and intersectional exclusion.

1. **Financial literacy deficits.** A critical barrier identified by key informants is low financial literacy. Many smallholders and producer organizations lack basic financial skills, such as budgeting, loan management, and record-keeping, making it difficult for them to interpret loan conditions or manage repayment schedules. This finding is robustly supported by recent empirical work. For instance, Kaiser and Menkhoff (2017), in a meta-analysis of financial literacy interventions, found that low literacy consistently correlates with higher default probabilities, as borrowers fail to align loan use with productive investment cycles. Thus, financial illiteracy does not just hinder borrowing, it actively constructs the high-risk profile that justifies exclusion, creating a trap that supply-side reforms alone cannot solve.
2. **Value chain positioning challenges.** The inability of smallholders to upgrade product quality and access premium markets is also a capacity constraint that directly undermines creditworthiness. Key informants noted that limited technical knowledge and investment in post-harvest handling confine farmers to volatile, low-value market segments.
3. **Intersectional exclusion.** The most severe capacity gaps are not randomly distributed but are systematically concentrated at the intersections of gender, age, and location. Our data show that eligibility requirements and embedded cultural norms disproportionately exclude women and youth across all five study countries. The 2023 UN Food and Agriculture Organization report “The Status of Women in Agrifood Systems” (FAO, 2023) finds that even when women have equal operational control over farms, they are 20% less likely than men to access credit due to collateral requirements, mobility constraints, and literacy gaps. For young people, the barriers are compounded by a lack of asset history and social capital. This dual exclusion from both informal group loans and formal national schemes is not an oversight but a design flaw in financial systems built around adult male asset ownership. Consequently, intersectional exclusion is a deliberate outcome of financial system design, not a passive reflection of societal norms. Targeted, disaggregated interventions are needed to address this design flaw.

3.4 Emerging innovations for increasing finance access by the “missing middle” and last-mile borrowers

Mitigating the lending constraints identified in Section 3.3 requires directly addressing the specific barriers to credit access. Emerging financial innovations offer commercial banks and

financial institutions new pathways to reach the “missing middle” and last-mile borrowers, particularly women and youth, by redesigning products and processes around these actors’ realities. These approaches are summarized in Table 2 and in the paragraphs below.

3.4.1 Alternative credit scoring and alternative collateral

This innovation directly tackles the rigid collateral requirements and information asymmetry that exclude borrowers without formal land titles or documented financial histories. Key informants from financial institutions acknowledged the limitations of traditional models but highlighted nascent interest in more flexible approaches. The use of alternative credit scoring leverages non-traditional data, such as mobile money transactions, agro-dealer purchase records, and satellite imagery showing farm health, to assess creditworthiness. An example is Pula Advisors, which uses satellite data and machine learning (Kene-Okafor, 2021). Key informant interviews revealed that while promising, the replication of these models by mainstream banks often hinges on partnerships with fintech or agri-tech firms, which are still in the process of being developed.

Concurrently, the use of alternative collateral, such as warehouse receipts, future purchase agreements, or group guarantees, addresses the same asset-based exclusion. Stakeholders, particularly from coffee cooperatives, pointed to the success of models like Root Capital, which uses tripartite agreements between an off-taker, a farmer organization, and the lender to secure loans against the future crop (World Bank, 2015). The lending model shows strong potential for Africa’s coffee value chains, as Root Capital is already active in several countries in Africa, including the Democratic Republic of Congo, Ghana, Kenya, Rwanda, Tanzania, and Uganda, where the institution is engaged in the coffee value chain, among other activities. However, respondents from Cameroon and Côte d’Ivoire noted that the legal and regulatory frameworks for enforcing such movable collateral remain weak, a key institutional gap that was identified earlier.

3.4.2 Risk-sharing mechanisms and credit guarantees

Government-backed instruments like partial credit guarantees, concessional first-loss capital, and loan loss guarantee schemes are designed to lower the perceived high credit risk and associated high cost of lending that commercial banks attribute to agriculture. Discussions with development partners and regulators confirmed that these instruments are critical for building lender confidence. Examples include the World Bank funded scheme in Rwanda (World Bank, 2019; Gurmessa *et al.*, 2022) and government-backed guarantee funds in Côte d’Ivoire and Cameroon. In Kenya, the government-owned Agricultural Finance Corporation supports access to agricultural credit for farmers working through SACCOs that have greater reach in rural areas and among the target market (FSD Kenya, 2023). Yet key informants from the banking sector in these countries reported that these funds are often undercapitalized and burdened with complex bureaucratic requirements, limiting their uptake and impact.

To bridge this gap, interviewees emphasized the need for more deliberate engagement with commercial banks. Models like Rabobank’s partnerships, supported by risk-sharing tools from entities like the Mastercard Foundation, demonstrate how guarantees can catalyse sustainable commercial lending. The consensus from interviews was that scaling these instruments requires designs that explicitly incentivize private bank participation, thereby addressing banks’ liquidity constraints and risk aversion directly.

3.4.3 Bundled financial services

Bundled financial services present a promising pathway to de-risk agricultural lending. These integrated packages combine credit with crop insurance, savings, and extension services, to manage the multiple risks that contribute to income instability and high default risk on the part of smallholders. Case examples from providers like One Acre Fund and Pula Insurance, cited by several respondents, show how integrated insurance can protect against climate shocks that would otherwise trigger loan defaults. However, key informants from farmer organizations and SMEs highlighted a critical demand-side barrier: low adoption due to high perceived costs, complexity, and limited awareness of benefits (Kinyanjui and Matula, 2018; Pålsson, 2019; Syah *et al.*, 2023). This aligns with the low financial literacy barrier identified earlier, necessitating targeted awareness campaigns that are designed based on local impact data, to improve uptake (Kinyanjui and Matula, 2018; Van Asseldonk *et al.*, 2020).

For scaling, respondents suggested that commercial banks must move beyond mere credit provision. By partnering with insurance companies and extension service providers, banks can co-create bundled products. As one financial service provider in Kenya noted, this not only de-risks the loan portfolio but also adds value for the customer, potentially improving repayment rates and customer loyalty.

3.4.4 Leveraging information and communication technology (ICT) and mobile payment platforms

An emerging innovation with significant potential to transform agricultural lending is the integration of digital financial platforms into commercial banking operations. Digital finance solutions directly address the infrastructure deficits and remoteness that increase transaction costs and limit physical access to banks. Mobile money platforms enable loan disbursement and repayment via phone, drastically reducing the cost of serving last-mile borrowers. The success of *M-Shwari* in Kenya, which has reached millions of borrowers and processed billions in transactions (FSD Kenya, 2023; The EastAfrican, 2020), was frequently referenced by interviewees as proof of concept.

Nevertheless, key informants, especially those focused on gender inclusion, sounded a crucial note of caution. Studies and on-the-ground experiences suggest that digital lending can exacerbate inequalities if it is not designed inclusively (Johnen and Mußhoff, 2023; Ba and Dieng, 2025). This connects directly to the barrier of intersectional exclusion, as women and older farmers may face greater hurdles regarding digital literacy, phone ownership, and network access. Therefore, innovation must be coupled with intentional efforts to close the digital divide through strategies such as low-tech platform design, literacy-focused training, and community access models.

3.4.5 Blended finance

Blended finance, which uses public or philanthropic capital to de-risk private investment, is an overarching mechanism that can be used to address the high-risk, high-cost perception that deters commercial capital from long-term, impactful investments in agriculture. It is particularly relevant for financing climate-smart practices, processing infrastructure, and other capital-intensive needs identified as large financing gaps in the earlier sections. Interviews with development agency representatives pointed to instruments like the World Bank's Enhancing Access to Benefits while Lowering Emissions (ENABLE) youth programme and various International Finance Cooperation (IFC) and AfDB facilities that use first loss guarantees,

concessional loans, and technical assistance grants (World Bank, 2019; Havemann *et al.*, 2020).

The critical insight from key informants was that blended finance is most effective when it “crowds in” rather than “crowds out” commercial banks. By absorbing a portion of the initial risk or cost, these instruments make agricultural lending commercially viable for banks, enabling them to offer more tailored financial products with appropriate tenors and grace periods aligned to coffee cycles, thereby solving the mismatch between financial supply and demand.

Table 2. Emerging financial innovations for the “missing middle” and last-mile borrowers in agricultural lending and enabling conditions.

Innovation	Description	Examples	Enabling conditions for scaling/effectiveness
Alternative credit scoring and alternative collateral	Use of non-traditional data (e.g. mobile usage, agro-dealer records, satellite imagery) to assess creditworthiness; loan terms aligned with agri-specific needs (e.g. crop cycles, group guarantees, alternative collateral).	Apollo Agriculture (Kenya), APA Insurance, Ibero, M-Kopa	• Legal and regulatory support on use of non-traditional data for credit scoring, and use of movable assets as alternative collateral • Partnerships with agri-tech and fintech providers to obtain data • Gender-responsive loan design
Risk-sharing mechanisms and credit guarantees	Partial credit guarantees, concessional interest rates, loan loss schemes, and bundled services (insurance, savings, extension).	Government-backed guarantee funds (Côte d'Ivoire, Cameroon), Agriculture Finance Corporation (Kenya)	• Government- or donor-backed guarantee funds • Capacity-building for smallholders and cooperatives, including financial literacy support • Impact data to support awareness and trust
Bundled financial services	Integrated financial products that combine credit with complementary services such as crop insurance, savings facilities, and extension/technical advice.	One Acre Fund, Pula Advisors	• Strong partnerships • Digital platforms for delivery, premium collection, and claims payout • Supportive regulatory environment for bundled products and index-based insurance
ICT and mobile payment platforms	Use of mobile money, fintech, and digital banking to reduce transaction costs and improve outreach.	M-Shwari (Kenya), DigiFarm	• Mobile network coverage • Digital identity systems • Data integration with lending institutions
Blended finance instruments	Use of concessional or philanthropic capital to attract private investment; helps reduce perceived risk and bridge financing gaps in rural markets.	ENABLE Youth (World Bank), IFC blended agri-finance, IFAD value chain programmes	• Strong anchor institutions • Clear investment pipelines • Risk-tolerant public/private capital • Policy frameworks for blended finance coordination

3.5 Enabling conditions for the adoption and sustainability of innovative financing

Many of the innovative financing mechanisms mentioned above already exist, as made clear in the examples listed. However, a number have not achieved their full potential in reaching the “missing middle” and last-mile borrowers in the coffee and broader agricultural value chains. To enable the adoption of these mechanisms and ensure their sustainability, several

enabling conditions are essential, spanning policy reforms, institutional collaboration, and supply-side capacity building.

3.5.1 Policy support and legal reforms to incentivize agri-finance innovation

Gender-responsive policy reforms aimed at strengthening land tenure security, such as formalizing land titles, are critical in order to expand credit access and agriculture investment, particularly for women and youth (Ali *et al.*, 2016). For instance, a randomized roll-out of land registration in Rwanda helped to provide a basis for an incipient mortgage market secured against agricultural land (Ali *et al.*, 2014), and increased agricultural investment, especially among female-headed households (Ali *et al.*, 2014). Similarly, sound legal and regulatory frameworks are needed to support the use of movable assets, such as livestock, stored crops, and farm machinery, as collateral. Countries like Ghana, Liberia, and Malawi have successfully introduced online collateral registries. According to IFC data (reported by Verdant Capital, 2020), this approach has facilitated approximately USD 3 billion in loans secured with movable assets in Ghana, and about USD 230 million in Liberia, of which 30% has been for women entrepreneurs. In Malawi, nearly 16,000 micro enterprises and SMEs have been able to access financing using their movable assets.

3.5.2 Public–private partnerships and institutional collaboration

Public–private partnerships and institutional collaboration are essential for scaling innovative financial solutions that reach smallholder farmers and last-mile borrowers. Effective collaboration requires actions from both regulatory and financial institutions to address the systemic barriers identified in this study.

Regulators, financial institutions, and technology providers can jointly pilot and validate new models—such as digital lending platforms, blockchain-based traceability, and tokenized smart contracts—within controlled regulatory sandboxes. For instance, the Central Bank of Nigeria launched a regulatory sandbox in 2021 to foster fintech innovation while ensuring consumer protection, with an emphasis on expanding financial inclusion (CBN, 2021). Expanding such frameworks to explicitly include agriculture-focused innovations would reduce entry barriers for agri-fintechs, allowing regulators to better understand sector-specific risks and craft proportionate policies.

For collaboration to yield tailored financial products, supply-side reforms within financial institutions are necessary. This includes building internal capacity through dedicated agri-finance units and training loan officers in coffee agronomy and value chain economics. Such expertise enables lenders to move beyond rigid collateral-based assessments and design products with features such as repayment schedules that are aligned with harvest cycles, directly addressing the mismatch between financial supply and agricultural demand cycles that has been noted as a key barrier. This internal capacity also allows banks to better assess and mitigate the perceived high credit risks associated with smallholder agriculture.

Collaboration should extend beyond fintech to include the growing ecosystem of last-mile agri-service providers, such as input suppliers, certified agronomists, and digital platform agents. As Kansime *et al.* (2025) highlight, these private and social enterprise actors are increasingly filling the vacuum left by weak public extension systems. Their role is evolving from purely agronomic support to becoming vital intermediaries for financial inclusion. By partnering with these trusted, field-based providers, financial institutions can overcome information asymmetries and lower the high transaction costs associated with reaching remote borrowers.

Finally, tripartite arrangements involving off-takers, farmers, and financial institutions further mitigate credit risk by ensuring structured repayment through guaranteed markets (Haryono *et al.*, 2023). Farmer cooperatives are often well-placed to coordinate these arrangements, helping to strengthen contract enforcement and reduce side-selling risks, which are identified as critical institutional gaps. Such models not only secure repayment for lenders but also provide farmers with more stable market access, enhancing their creditworthiness over time.

3.5.3 Foundational investments in human capital and enterprise

Although the nature of SMEs and their capacity influence the constraints they face regarding access to needed financing, smallholder coffee farmers require adequate information and financial skills to identify potential suppliers of credit funds (Masuka *et al.*, 2025). Targeted programmes that combine financial literacy, business skills training, and mentorship equip smallholders to transition from being subsistence farmers to being agricultural entrepreneurs (Kuteesa and Kyotalimye, 2019; Onuoha, 2020; Hakimi *et al.*, 2025). This builds a pipeline of viable borrowers and stimulates demand for diverse financial products, from startup capital to investment loans. Concurrently, technical capacity building in good agricultural practices, climate-smart agriculture, and value-added processing is needed to improve coffee quality and profitability. Burundi offers a good example here: producers who processed their coffee saw significant quality improvements and forged sustainable trade relationships with international buyers (Bro and Clay, 2017). Formalizing and strengthening farmer cooperatives enhances their role as financial intermediaries, improving access to group lending and increasing their credibility with financial institutions (Poole and Donovan, 2014; Hung Anh *et al.*, 2019).

3.5.4 Supply-side reforms for tailored and accessible financial products

To effectively serve the agricultural sector, financial institutions must implement internal reforms that bridge critical knowledge gaps and redesign delivery systems to enhance accessibility. This begins with building in-house agricultural expertise through dedicated agri-finance units and specialized training for loan officers to accurately assess the sector's unique risks and move beyond rigid collateral-based models. This deepened understanding enables the design of customized financial products, such as loans with harvest-aligned repayments and flexible collateral options, which directly address the mismatch between financial and agricultural cycles and stringent collateral requirements that currently exclude smallholders.

However, well-designed products are ineffective without last-mile reach and client capability. This challenge is compounded by the fact that the "missing middle" and last-mile smallholders are often similarly underserved by public agricultural extension systems, creating a dual service gap (Kuteesa and Kyotalimye, 2019). To bridge this dual service gap, financial institutions must look beyond their own branches and forge strategic partnerships with the growing ecosystem of last-mile agri-service providers. These providers, operating at the intersection of extension and commerce (Kansiime *et al.*, 2025), are uniquely positioned to explain integrated products, facilitate enrolment, and provide the ongoing support that ensures proper utilization and repayment.

Ultimately, product adoption depends not only on physical access but also on farmer understanding and trust. Therefore, financial literacy must be integrated into these last-mile partnerships. Targeted education on products such as credit and climate insurance (Survase and Gohil, 2024), should be delivered through the same agri-service providers and agent networks that provide access, ensuring that financial concepts are contextualized and that ongoing support is available. This interlinked approach of building internal expertise,

partnering with last-mile intermediaries, and embedding literacy into delivery creates a cohesive supply-side strategy capable of transforming product design into tangible financial inclusion.

4 Conclusions and recommendations

The study identifies a persistent financing gap affecting the "missing middle" and last-mile borrowers in Africa's coffee-producing countries. Drawing on evidence from Cameroon, Côte d'Ivoire, Ethiopia, Kenya, and Uganda, the findings confirm that this gap is rooted in entrenched risk perceptions among lenders, who view these borrowers as high-risk due to their limited collateral, informal operations, and susceptibility to climate and market shocks. On the borrower side, formal loans are often seen as costly and poorly adapted to their cash flow cycles and business models. Traditional lending frameworks that rely on rigid collateral requirements, high interest rates, and uniform repayment terms are considered ill-suited for agriculture and coffee, where seasonal variability, climate shocks, and price volatility are endemic. Consequently, informal lending fills the void, but it lacks the scale, predictability, and inclusivity needed for long-term sector transformation. However, the study also identifies a compelling economic and social case for inclusive finance models that engage underserved segments, especially women and youth, who are systematically excluded due to gender biases and tenure insecurity, and presents actionable, coffee-specific pathways forward.

To move from diagnosis to action, the following recommendations are tailored for stakeholders within African coffee value chains:

For financial institutions and lenders, the priority is to develop coffee-specific loan products with flexible repayment aligned to harvest cycles, and to accept alternative collateral such as warehouse receipts or forward sales contracts. Partnering with trusted last-mile agri-service providers and cooperatives can lower due diligence costs and improve farmer readiness.

For policymakers and regulators, fast-tracking legal reforms that recognize movable assets—like stored coffee or processing equipment—as legitimate collateral is critical, drawing on models from Ghana and Liberia. Establishing regulatory sandboxes for testing coffee-focused fintech, such as digital traceability platforms, can foster innovation while managing risk.

For development partners and blended finance architects, concessional capital must be used strategically to de-risk lending for underserved segments. This includes creating partial credit guarantees for loans to women's cooperatives or youth-led SMEs, and co-funding bundled insurance products that protect against climate and price shocks specific to coffee.

For coffee value chain actors—exporters, processors, and buyers—enhancing financial inclusion involves formalizing purchase agreements that farmers can use as collateral and digitizing transactions to build transparent repayment histories. Strengthening the governance and financial management of cooperatives is critical, in order to turn them into bankable intermediaries.

Finally, **cross-cutting efforts** should foster multi-stakeholder platforms to coordinate action and share learning. Future research must evaluate the impact of these financing models and recommendations on coffee yield, quality, and the inclusion of women and youth. By aligning financial products with the realities of coffee farming and leveraging collaborative partnerships, stakeholders can build a more resilient and inclusive financial ecosystem for Africa's coffee sector.

Acknowledgements

This study was funded by the African Export–Import Bank (AFREXIMBANK), and jointly undertaken by CABI, Inter-African Coffee Organization (IACO), the Coffee and Tea Authority of Ethiopia, and the International Coffee Organization (ICO). The support received from stakeholders in both the public and private sectors in the five study countries is gratefully acknowledged.

CABI, as an international intergovernmental not-for-profit organization, gratefully acknowledges the generous support received from our many donors, sponsors and partners. In particular we thank our Member Countries for their vital financial and strategic contributions.

References

- AfDB (2017) *Africa's coffee sector: Status, challenges and opportunities for growth*. African Development Bank, Abidjan, Côte d'Ivoire.
https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Africa_s_Coffee_Sector_Status_Challenges_and_Opportunities_for_Growth.pdf (accessed 16 March 2026)
- Ali, D.A., Deininger, K. and Goldstein, M. (2014) Environmental and gender impacts of land tenure regularization in Africa: pilot evidence from Rwanda. *Land and Property Rights* 110, 262–275. <https://doi.org/10.1016/j.jdevco.2013.12.009>
- Ali, D.A., Collin, M., Deininger, K., Dercon, S., Sandefur, J. and Zeitlin, A. (2016) Small price incentives increase women's access to land titles in Tanzania. *Journal of Development Economics* 123, 107–122.
<https://doi.org/10.1016/j.jdevco.2016.06.001>
- Ba, K. and Dieng, S.A. (2025) Digital financial inclusion: socioeconomic and demographic factors of access and usage in Senegal. *African Development Review* 37(2), e70015.
<https://doi.org/10.1111/1467-8268.70015>
- Bastin, A. and Matteucci, N. (2007) Financing coffee farmers in Ethiopia: challenges and opportunities. *Savings and Development* 3, 251–283.
- Boccaletti, S., Ferrando, A., Rossi, E. and Rossolini, M. (2024) European SMEs' growth: The role of market-based finance and public financial support. *Small Business Economics* 64, 691–727. <https://doi.org/10.1007/s11187-024-00918-y>
- Bro, A. and Clay, D.C. (2017) Transforming Burundi's coffee sector through strategic value chain investments. *Journal of Agribusiness in Developing and Emerging Economies* 7(3), 218–230. <https://doi.org/10.1108/JADEE-11-2015-0053>
- Bruhn, M. and Love, I. (2014) The real impact of improved access to finance: Evidence from Mexico. *The Journal of Finance* 69(3), 1347–1376. <https://doi.org/10.1111/jofi.12091>
- CBN (2021) *Framework for Regulatory Sandbox Operations*. Central Bank of Nigeria (CBN), Abuja.
<https://www.cbn.gov.ng/out/2021/ccd/framework%20for%20regulatory%20sandbox%20operations.pdf> (accessed 16 March 2026)

- Chaiya, C., Sikandar, S., Pinthong, P., Saqib, S.E. and Ali, N. (2023) The impact of formal agricultural credit on farm productivity and its utilization in Khyber Pakhtunkhwa, Pakistan. *Sustainability* 15(2), 1217. <https://doi.org/10.3390/su15021217>
- Charles, S. (2023) How access to finance became coffee producers' biggest obstacle. *Coffee Intelligence*. <https://intelligence.coffee/2023/07/access-to-finance-coffee-producers/> (accessed 16 March 2026)
- Cheruiyot, N.C. (2016) *Financing coffee: A Kenyan experience*. <http://dev.ico.org/documents/cy2014-15/Presentations/5th-forum-9-commodities-fund-e.pdf> (accessed 16 March 2026)
- Clay, D.C., Bro, A.S., Church, R.A., Ortega, D.L. and Bizozza, A.R. (2018) Farmer incentives and value chain governance: Critical elements to sustainable growth in Rwanda's coffee sector. *Journal of Rural Studies* 63, 200–213. <https://doi.org/10.1016/j.jrurstud.2018.06.007>
- Cooperative Bank (2023) *Supply Chain Financing*. Cooperative Bank, Kenya. Retrieved 20 January 2026 from <https://www.co-opbank.co.ke/borrow/supply-chain-financing/> (accessed 16 March 2026)
- Doss, C. (2013) Intrahousehold bargaining and resource allocation in developing countries. *The World Bank Research Observer* 28(1), 52–78.
- Falola, A., Mukaila, R. and Abdulhamid, K.O. (2022) Informal finance: Its drivers and contributions to farm investment among rural farmers in Northcentral Nigeria. *Agricultural Finance Review* 82(5), 942–959.
- FAO (2023) The status of women in agrifood systems. FAO - Food and Agriculture Organization of the United Nations, Rome, Italy. <https://doi.org/10.4060/cc5343en>
- FSD Kenya (2023) *New Agri-financing models*. Financial Sector Deepening (FSD) Kenya. <https://www.fsdkenya.org/wp-content/uploads/2023/06/New-agrifinancing-business-models-Investment-Papers—Popular-Version.pdf> (accessed 16 March 2026)
- GCP (2016) *African Investment Review: Full Reports*. Global Coffee Platform. <https://www.globalcoffeeplatform.org/resources/2016/african-investment-review-full-reports/> (accessed 16 March 2026)
- Gichichi, M.S., Mukulu, E. and Odhiambo, R. (2019) Influence of access to entrepreneurial finance and performance of coffee smallholders' micro and small agribusinesses in Murang'a County, Kenya. *Journal of Entrepreneurship and Project Management* 32(2), 17–34.
- Gurmessa, N.E., Ndinda, C., Agwanda, C. and Akiri, M. (2022) Partial credit guarantee and financial additionality for smallholders' coffee cooperatives: Experience from Ethiopia. *Development in Practice* 32(8), 1049–1062. <https://doi.org/10.1080/09614524.2021.1958161>
- Hakimi, A., Saidi, H. and Adili, L. (2025) Achieving a more inclusive financial system: what does the MENA region need? A sensitivity analysis for GCC and non-GCC countries. *Economies* 13(7), 190. <https://doi.org/10.3390/economies13070190>

- Haryono, A., Maarif, M.S., Suroso, A.I. and Jahroh, S. (2023) The design of a contract farming model for coffee tree replanting. *Economies* 11(7), 185. <https://doi.org/10.3390/economies11070185>
- Havemann, T., Negra, C. and Werneck, F. (2020) Blended finance for agriculture: Exploring the constraints and possibilities of combining financial instruments for sustainable transitions. *Agriculture and Human Values* 37(4), 1281–1292. <https://doi.org/10.1007/s10460-020-10131-8>
- Hung Anh, N., Bokelmann, W., Thi Nga, D. and Van Minh, N. (2019) Toward sustainability or efficiency: The case of smallholder coffee farmers in Vietnam. *Economies* 7(3), 66. <https://doi.org/10.3390/economies7030066>
- IACO (2020) *The African Coffee Facility*. Internal document. Inter-African Coffee Organisation (IACO). <https://iaco-oiac.org/>
- iBAN and BOPIC (2019) *Innovative finance opportunities for inclusive agri-business*. https://www.inclusivebusiness.net/sites/default/files/2018-12/Innovative_finance_for_inclusive%20agri.pdf (accessed 16 March 2026)
- ICO (2015) *Sustainability of the coffee sector in Africa*. International Coffee Organization. <https://www.ico.org/documents/cy2014-15/icc-114-5-r1e-overview-coffee-sector-africa.pdf> (accessed 16 March 2026)
- ICO (2017) *Country coffee profile—Cameroon*. International Coffee Organization. <http://www.ico.org/documents/cy2016-17/icc-120-5e-profile-cameroon.pdf> (accessed 16 March 2026)
- ICO (2018) *Gender equality in the coffee sector: An insight report from the International Coffee Organization*. International Coffee Organization (ICO), United Kingdom. Retrieved 20 January from https://www.ico.org/documents/cy2017-18/Presentations/ICO_report_on_gender_equality_in_the_coffee_sector_Dr_Christoph_Saenger.pdf
- Johnen, C. and Mußhoff, O. (2023) Digital credit and the gender gap in financial inclusion: Empirical evidence from Kenya. *Journal of International Development* 35(2), 272–295. <https://doi.org/10.1002/jid.3687>
- Kaiser, T. and Menkhoff, L. (2017) Does financial education impact financial literacy and financial behavior, and if so, when? *The World Bank Economic Review* 31(3), 611–630. <https://doi.org/10.1093/wber/lhx018>
- Kansiime, M.K., Aliamo, C., Alokite, C., Rware, H., Murungi, D., Kamulegeya, P., Ssenyonga, A., Sseryazi, A., Mayambala, G., Kiarie, L.W., Kadzamira, M.A.T.J., Akiri, M. and Mulema, J.M.K. (2025) Pathways and business models for sustainable youth employment in agriculture: a review of research and practice in Africa. *CABI Agriculture and Bioscience* 6(1), 0045. <https://doi.org/10.1079/ab.2025.0045>
- Karlan, D., Osei, R., Osei-Akoto, I. and Udry, C. (2014) Agricultural decisions after relaxing credit and risk constraints. *The Quarterly Journal of Economics* 129(2), 597–652. <https://doi.org/10.1093/qje/qju002>
- KCB (2023) *Contracted crop loan*. Kenya Commercial Bank. Retrieved 20 January 2026 from <https://ke.kcbgroup.com/for-your-biashara/get-a-loan/for-agri-business/agri-business-loans> (accessed 16/03/2026)

- Kene-Okafor, T. (2021) *Kenyan insurtech startup Pula raises \$6M Series A led by TLcom Capital*. TechCrunch. <https://techcrunch.com/2021/01/25/kenyan-insurtech-startup-pula-raises-6m-series-a-led-by-tlcom-capital/> (accessed 16/03/2026)
- Khan, F.U., Nouman, M., Negrut, L., Abban, J., Cismas, L.M. and Siddiqi, M.F. (2024) Constraints to agricultural finance in underdeveloped and developing countries: A systematic literature review. *International Journal of Agricultural Sustainability* 22(1). <https://doi.org/10.1080/14735903.2024.2329388>
- Kinyanjui, M. and Matula, D.P. (2018) Factors influencing adoption of agriculture insurance: A case of smallholder farmers in Imenti South sub-County, Meru County, Kenya. *International Journal of Economics, Business and Management Research* 2(6), 326–342.
- Krishnan, S. (2017) *Sustainable Coffee Production*. In Shugart, H. (ed.): *Oxford Research Encyclopedia of Environmental Science*. New York, NY, online edition, Oxford Academic. <https://doi.org/10.1093/acrefore/9780199389414.013.224>
- Kuteesa, A. and Kyotalimye, M. (2019) Documentation and data handling: How can Africa promote record keeping and investment in data management? *African Journal of Food, Agriculture, Nutrition and Development* 19(1), 14171–14189. <https://doi.org/10.18697/ajfand.84.BLFB1014>
- Lemeilleur, S., Subervie, J., Presoto, A.E., Souza Piao, R. and Saes, M.S.M. (2020) Coffee farmers' incentives to comply with sustainability standards. *Journal of Agribusiness in Developing and Emerging Economies* 10(4), 365–383. <https://doi.org/10.1108/JADEE-04-2019-0051>
- Mastercard Foundation (2022) *Inflection point: Unlocking growth in the era of farmer finance*. https://www.accesstoseeds.org/app/uploads/2018/07/Inflection-Point_April-20160-accessible.pdf (accessed 16 March 2026)
- Masuka, A., Rukasha, T. and Tatsvarei, S. (2025) Determinants of financial inclusion among smallholder farmers in Zimbabwe. *Journal of Agricultural Policy* 8(2), 1–14. <https://doi.org/10.47941/jap.2660>
- Maundu, L.M. and Karugu, W.N. (2018) Financial factors affecting coffee production among small-scale farmers in Kiambu County, Kenya. *International Journal of Social Sciences and Information Technology* 4(9), 73–88.
- Mbowa, S., Odokonyero, T., Muhumuza, T. and Munyambonera, E. (2017) Does coffee production reduce poverty? Evidence from Uganda. *Journal of Agribusiness in Developing and Emerging Economies* 7(3), 260–274. <https://doi.org/10.1108/JADEE-01-2016-0004>
- Mersha, D. and Ayenew, Z. (2018) Financing challenges of smallholder farmers: A study on members of agricultural cooperatives in Southwest Oromia Region. *African Journal of Business Management* 12(10), 285–293. <https://doi.org/10.5897/AJBM2018.8517>
- Muriithi, L. (2016) *Viability of coffee farming as a business*. <https://es.scribd.com/document/479090533/2016-Coffee-ruiru-fair-presentation-LUCY> (accessed 16 March 2026)
- Nalunga, A. (2021) *Essays on the coffee supply chain in Uganda*. <https://hdl.handle.net/2097/41312> (accessed 16 March 2026)

- Negasa, E., Mitiku, A. and Mitiku, F. (2019) Analysis of coffee value chain finance in Bodji Dirmeji district of West Wollega, Ethiopia. *Ethiopian Journal of Environmental Studies & Management* 12(1), 32–42. <https://doi.org/doi:https://ejesm.org/doi/v12i1.3>
- Onuoha, O.C. (2020) Capitalization and co-operative competitiveness in Nigeria: the linkage. *Forshen Hub International Journal of Entrepreneurial and Cooperative Studies* 3(1), 34–44.
- Ouma, S.A., Odongo, T.M. and Were, M. (2017) Mobile financial services and financial inclusion: Is it a boon for savings mobilization? *Review of Development Finance* 7(1), 29–35. <https://doi.org/10.1016/j.rdf.2017.01.001>
- Pålsson, C. (2019) *Microfinance in Ugandan coffee farming—A case study of coffee farmers in the Ugandan savings & credit cooperative “Buikwe Riis Coffee Farmers”* [Master's thesis in Business Administration, Swedish University of Agricultural Sciences, Uppsala, Sweden]. <https://core.ac.uk/download/pdf/227532985.pdf>
- Poole, N. and Donovan, J. (2014) Building cooperative capacity: the specialty coffee sector in Nicaragua. *Journal of Agribusiness in Developing and Emerging Economies* 4(2), 133–156. <https://doi.org/10.1108/JADEE-01-2013-0002>
- Sakyi-Nyarko, C., Ahmad, A.H. and Green, C.J. (2022) The role of financial inclusion in improving household well-being. *Journal of International Development* 34(8), 1606–1632. <https://doi.org/10.1002/jid.3661>
- Shiferaw, B., Hellin, J. and Muricho, G. (2011) Improving market access and agricultural productivity growth in Africa: what role for producer organizations and collective action institutions? *Food Security* 3(4), 475–489. <https://doi.org/10.1007/s12571-011-0153-0>
- Survase, M. and Gohil, A. (2024) Empowering self-help groups: The impact of financial inclusion on social well-being. *Journal of Risk and Financial Management* 17(6). <https://doi.org/10.3390/jrfm17060217>
- Syah, M.A., Prastiwi, W.D., Santoso, W. and Mukson (2023) The attributes of insurance products as determinant factors of coffee farmers' participation in agricultural insurance. In: Setiawan, R.F. et al. (eds) *Proceedings of the 3rd International Conference on Agriculture* (ICA 2022), pp. 139–150. https://doi.org/10.2991/978-94-6463-168-5_16
- Technoserve (2023) *New study: Incentives could help Ethiopia's coffee farmers dramatically increase yields and incomes*. <https://www.technoserve.org/news/new-study-incentives-could-help-ethiopias-coffee-farmers-dramatically-increase-yields-and-incomes/> (accessed 16 March 2026)
- The EastAfrican (2020) *Kenya's M-Shwari transactions hit \$445.9 million*. <https://www.theeastafrican.co.ke/tea/business-tech/kenya-s-m-shwari-transactions-hit-445-9-million--1319076> (accessed 16 March 2026)
- UCDA (2023) *Coffee Sub-Sector Strategy (2020/21 – 2024/25)*. Uganda Coffee Development Authority, Kampala, Uganda. <https://ugandacoffee.go.ug/index.php/resource-center/publications> (accessed 16 March 2026)

- Ullah, A., Saqib, S.E. and Kächele, H. (2022) Determinants of farmers' awareness and adoption of extension recommended wheat varieties in the rainfed areas of Pakistan. *Sustainability* 14(6), 3194. <https://doi.org/10.3390/su14063194>
- USDA and GAIN (2023) *Coffee Annual: Ethiopia*. United States Agency for Development (USDA) and Global Agricultural Information Network (GAIN), Addis Ababa, Ethiopia. <https://fas.usda.gov/data/ethiopia-coffee-annual-8> (accessed 16 March 2026)
- Van Asseldonk, M., Muwonge, D., Musuya, I. and Abuce, M. (2020) Adoption and preferences for coffee drought index-based insurance in Uganda. *Studies in Agricultural Economics* 12(3), 162–166. <https://doi.org/10.7896/j.2053>.
- Verdant Capital (2020) *Collateral registry for movable assets: Helping unlock access to finance for MSMEs across Africa*. <https://verdant-cap.com/collateral-registry-for-movable-assets-helping-unlock-access-to-finance-for-msmes-across-africa/> (accessed 16 March 2026)
- Wege, O. (2018) *Commodities at a glance: Special issue on coffee in East Africa*. https://unctad.org/system/files/official-document/ditccom2018d1_en.pdf (accessed 16 March 2026)
- Weng, C., Wang, H., Heerink, N. and van den Berg, M. (2022) Credit constraints and rural households' entrepreneurial performance in China. *Emerging Markets Finance and Trade* 58(2), 570–583.
- World Bank (2015) *Risk and finance in the Coffee sector: A compendium of case studies related to improving risk management and access to finance in the coffee sector*. World Bank Group Report No. 93923-GLB. <https://documents1.worldbank.org/curated/en/742751467997014983/pdf/93923-WP-P144423-Box385447B-PUBLIC-Series-Agriculture-global-practice-disc-paper-Coffee-Sector-web-2-2-20-15-v3.pdf> (accessed 16 March 2026)
- World Bank (2019) *How to address unique risks in agriculture credit guarantee schemes: Lessons learned from credit guarantees for agriculture*. <https://documents1.worldbank.org/curated/en/990041591247465912/pdf/How-to-Address-Unique-Risks-in-Agriculture-Credit-Guarantee-Schemes-Lessons-Learned-from-Credit-Guarantees-for-Agriculture.pdf> (accessed 16 March 2026)

Contact CABI

Africa

Kenya

CABI, Canary Bird
673 Limuru Road, Muthaiga
PO Box 633-00621
Nairobi, Kenya
T: +254 (0)20 2271000 / 20
E: africa@cabi.org

Ghana

CABI, CSIR Campus
No. 6 Agostino Neto Road
Airport Residential Area
P. O. Box CT 8630, Cantonments
Accra, Ghana
T: +233 (0)302 797 202
E: westafrica@cabi.org

Zambia

CABI, Southern Africa Centre
5834 Mwange Close
Kalundu
P.O. Box 37589
Lusaka, Zambia
T: +260 967 619 665
E: southernafrica@cabi.org

Americas

Brazil

CABI, UNESP-Fazenda Experimental
Lageado, FEPAF (Escritorio da CABI)
Rua Dr. Jose Barbosa de Barros 1780
Fazenda Experimental Lageado
CEP:18.610-307
Botucatu, São Paulo, Brazil
T: +55 (14) 3880 7670
E: y.colmenarez@cabi.org

Trinidad & Tobago

CABI, 59 Gordon Street, St Augustine
Tunapuna 331323
Trinidad and Tobago
T: +1 868 6457628
E: caribbeanLA@cabi.org

USA

CABI, 6 Liberty Square #2775
Boston, MA 02109, USA
T: +1 (617) 682-9015
E: h.jansen@cabi.org

Asia

China

CABI, Beijing Representative Office
Internal Post Box 85
Chinese Academy of Agricultural Sciences
12 Zhongguancun Nandajie
Beijing 100081, China
T: +86 (0)10 82105692
E: china@cabi.org

India

CABI, 2nd Floor, CG Block,
NASC Complex, DP Shastri Marg
New Delhi – 110012, India
T: +91 (0)11 25841906
E: india@cabi.org

Malaysia

CABI, Building A19
MARDI, 43400 Serdang
Selangor, Malaysia
T: +60 (0) 3 89432921
E: cabisea@cabi.org

Pakistan

CABI, Opposite 1-A,
Data Gunj Baksh Road
Satellite Town, PO Box 8
Rawalpindi, Pakistan
T: +92 51 9292062
T: +92 51 8434979
E: cabi.cwa@cabi.org

Europe

Switzerland

CABI, Rue des Grillons 1
CH-2800 Delémont, Switzerland
T: +41 (0)32 4214870
E: europe-CH@cabi.org

UK

CABI, Nosworthy Way
Wallingford, Oxfordshire, OX10 8DE, UK
T: +44 (0)1491 832111
E: corporate@cabi.org

CABI, Silwood Park, Buckhurst Road,
Ascot, Berkshire, SL5 7PY, UK
T: +44 (0)1491 829080
E: cabieurope-uk@cabi.org
E: microbialservices@cabi.org