

REVIEW

Impact of Rural Microfinance on Small Farmers' Participation in Agri-Food Value Chains in South Africa: A Systematic Review

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ABSTRACT

The study addresses empirical evidence on the impact of rural microfinance on smallholder farmers' participation in agri-food value chains in South Africa. The study objectives were to categorize evidence on how microfinance influences smallholder farmers' integration into agri-food value chains and evaluate which financial services have the most significant effect on productivity and market participation. The study adopted the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020, using the prescribed strategies to allow for transparency and replicability. The information sources encapsulate peer-reviewed journal articles, government reports, and grey literature. Procedurally, databases and numerous sources were searched as follows: Academic Databases, including Scopus, Web of Science, Science-Direct, EBSCOhost, SpringerLink; and regional sources such as African Journals Online (AJOL), Sabinet, Institutional Repositories which encompass the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD), World Bank, and the Department of Agriculture, Land Reform and Rural Development (DALRRD) reports; ResearchGate, Google Scholar, and Non-Governmental Organization (NGO) reports. The study reveals that access to microcredit and savings helps enhance smallholder participation in agri-food value chains by empowering investments in inputs, farm expansion, and productivity. For microfinance instruments, credit exhibited the strongest evidence of impact, facilitating market-oriented production and value chain integration. Savings groups significantly contribute to resilience

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and social capital, while insurance remains underutilized due to affordability and awareness constraints. Further, gender and socio-economic differences continue to mediate outcomes, necessitating tailored financial products and training programmes to ensure equitable participation. The study recommends improvement of micro-financial programme design, institutional partnerships, gender-responsive policies, and farmer education.

Keywords: Rural Microfinance; Smallholder Farmers; Savings; Insurance; Agri-Food Value Chain; South Africa

1. Introduction

South Africa has been endowed with a dualistic agricultural system where commercial agriculture is largely white-owned and occupies about 72% of farmland, with the dominance of grains, oilseeds, and meat production. While about 2 million black smallholders and subsistence farmers thrive on just 4% of land, often exhibited on communal holdings, engulfed with low productivity, inadequate mechanization, and negligible access to finance and markets. Smallholder agriculture in South Africa remains very critical to rural livelihoods, food security, and transformation policy agendas such as the National Development Plan (NDP); nonetheless, it remains relegated in agro-processing and formal value chains^[1]. The value chains in South Africa's agri-food sector span production, processing, post-harvest handling, distribution, and retailing. The commercialized agricultural activities involving the production of maize, sugarcane, poultry, and fruits are well-developed and vertically integrated. Smallholder agriculture typically operates in informal or semi-formal agricultural chains and faces multiple challenges and limited market access^[2]. However, smallholders occupy a small share of land and contribute relatively little to national GDP, but they are critical for rural food security and livelihoods. The contributions of agriculture to GDP amount to about 2.5–2.6% and formal employment 5%, while casual labour in smallholder farming also provides income to numerous rural workers. Furthermore, smallholder farmers encounter a range of structural constraints limiting their performance. This includes inadequate access to land and tenure insecurity. Communal land tenure systems reduce investment incentives and limit credit access. Land reform has transferred about 30% of land via “willing-buyer, willing-seller” transfers, but often with communal ownership regimes that hinder

productivity; secondly, limited finance and rising input costs manifest in poor access to affordable credit, despite schemes such as Micro Agricultural Financial Institutions (MAFISA) and government agricultural subsidies; input costs remain exorbitant^[3]. Thirdly, endemic and weak infrastructure—poor roads, inadequate storage facilities, irrigation, and unreliable electricity hamper production and transport, leading to post-harvest losses and market exclusion. Fourthly, restricted and declining extension services and technical education, low training levels in agro-processing, and lack of entrepreneurial skills further limit value-chain participation^[4]. Fifthly, the market access barriers translate into selling farm products via informal channels. However, institutional and policy support are abounded and cut across government programmes: Key initiatives include the National Development Plan; the Agricultural Policy Action Plan; the Comprehensive Agricultural Support Programme (CASP); Agri-Processing Support Scheme (APSS); the Agriculture & Agro-processing Master Plan (AAMP); and youth training via the National Rural Youth Service Corps (NARYSEC); co-operatives and aggregation which are promoted as facilitators for aggregation and market leverage; Roof of private actors/NGOs which entails organizations such as Solidaridad and AgriSA which support women and youth by, providing training, inputs, technical support and linking farmers to formal buyers. Finally, digital innovation, which drives the uptake of digital tools, mobile advisory services, e-marketplaces, remote sensing, and traceability systems, improves market access, financial inclusion, input management, and planning; yet, adoption faces connectivity gaps and literacy constraints^[5].

In South Africa, the structure of the agri-food value chain is made up of formal, vertically-integrated, dominated by large-scale producers, processors and retailers, notably in sectors like maize, sugar, fruit, poultry,

and dairy, and these chains give quality control and export orientation while the low-entry informal or semi-formal chains are usually dominated by smallholders, traders, local markets, roadside stalls, or own consumption. However, there are pathways for smallholder participation which encompass three main entry routes: a) contract farming or out-grower schemes where buyers (e.g., processing firms, mills, horticultural exporters, supermarkets) contract smallholders to produce specified crops under defined quality, quantity, and delivery schedules. Often, buyers supply inputs, technical advice, loans, or transport. Such schemes are common in the sugar, tobacco, cotton, fruit, poultry, and forestry sectors^[6]. With good management, integrate smallholders into formal markets; however, contracts may pose difficulty for farmers if power is lopsided. b) Aggregation via cooperatives or clusters also exists where smallholders join producer organizations or clusters, enabling shared logistics, collective certification, and negotiation power. However, some successful models like Solidaridad horticulture project across Gauteng, Limpopo, Eastern Cape, Mpumalanga, and KwaZulu-Natal enabled local certification for some farmers, linking them to Pick n Pay, Yukon, Food Lovers, Dewcrisp, and Hello Choice retailers^[7]. Lastly, c) the institutional and NGO-led market initiatives, like the NGOs and PPPs, provide bridging support: training in good agronomic practices, record-keeping apps (e.g., WADI Virtual Assistant, Farming Solutions App), quality control, certification support, traceability systems, and linking to markets.

There are key challenges that inhibit smallholder inclusion in the value chain: i) inadequate affordable inputs, credit, poor extension advice, climate vulnerability, water and energy shortages ii) limited capacity for sorting, grading, cold storage, quality control, and certification compliance iii) supermarkets have high entry requirements, and as such there is slow integration of black small medium producers and high mark ups in fresh produce markets; iv) most co-operatives are under-resourced and poorly governed^[8]. Nevertheless, there are emerging enablers to enhance performance and ameliorate some of the constraints of smallholder access to the value chain and they include public-private part-

nerships (PPPs): initiatives through DALRRD, NEF and NDP emphasize infrastructure, agro-processing hubs, value-chain services and procurement preferences for black, women and youth producers; digital and Agri-tech solutions: Apps and platforms improve access to market information, weather data, traceability, input orders and remote advisory thereby improving productivity and incomes if well adopted; strengthening of cooperatives and certification: aggregation and certification unlock market access, improve compliance and enable premium pricing; and adoption of credit models by smallholders: credit risk models, inclusive of finance schemes and supplier funds support farmers through off-take arrangements and affordable lending^[9].

In South Africa, microfinance spans financial services such as microcredit, micro-savings, microinsurance, and payment services, targeted at low-income populations who lack adequate access to formal banking and financial systems. The aim is to enhance financial inclusion, support livelihood strategies, and build resilience among the poor by providing small loans, savings mechanisms, and insurance tools tailored to rural contexts. In most rural South Africa, access to formal banking remains limited, with many smallholder farmers and rural households lacking collateral and a credit history. Against this backdrop, programmes such as MAFISA (Micro Agricultural Finance Scheme of South Africa) and VSLAs (Village Savings and Loan Associations) have emerged to address these financial gaps and facilitate credit, savings, and insurance schemes tailored to local needs^[10].

In conclusion, the article synthesizes evidence on the impact of rural microfinance on smallholder farmers' participation in agri-food value chains in South Africa. The article first characterized agriculture in South Africa: the dualistic nature of agriculture, smallholder and commercial, typical farming systems, challenges, and enabling supports. It surveys the structure of agri-food value chains, with attention to smallholder participation pathways, challenges, and institutional actors. Finally, it discusses emerging trends such as aggregation, cooperatives, contract farming, digital tools, and public-private partnerships. It starts with an abstract that explicitly summarizes the objectives, rationale, and main findings.

The method adopted encapsulates a systematic review strategy and follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines (see **Supplementary Materials**), which imbue transparency and replicability. The procedure includes stated eligibility criteria, data sources, search strategies, screening processes, data removal methods, and synthesis techniques. In the discussion and conclusion, the article succinctly synthesizes the findings and the policy implications.

2. Problem Statement and Rationale

In South Africa, agriculture remains the basic source of livelihood for rural households, particularly the smallholder farmers who contribute to food security, poverty alleviation, and rural employment. Notwithstanding their significance, smallholder farmers continue to function at the margins of the agri-food economy, branded by low productivity, subsistence-oriented production levels, and marginal participation in formal value chains. Another challenge inhibiting smallholder commercialization and value chain participation is limited access to financial services, including credit, savings, and insurance mechanisms tailored to rural contexts^[11]. Another issue is the inadequate formal credit penetration among smallholders, where access to finance becomes a precondition for smallholders to invest in quality inputs, adopt improved technologies, and meet the volume and quality requirements of competitive agri-food value chains^[12]. A study^[13] reports that formal credit access in rural South Africa remains negligible, with most smallholders excluded from commercial banking systems due to a lack of collateral, irregular incomes, and high transaction costs^[14]. In closing gaps, credit programmes like the Micro Agricultural Finance Scheme of South Africa (MAFISA) were introduced, yet their coverage and presence have been limited. Indications show that MAFISA loans often favour better-resourced farmers who already possess productive assets, while marginal farmers who make up a considerable number are left out^[15]. In addition, smallholder farmers often rely on

informal financing approaches, such as rotating savings and credit associations (ROSCAs) and village savings and loan associations (VSLAs), which provide small loan amounts^[16]. The exclusion constraints smallholders' ability to procure better-quality seeds, fertilizer, farm mechanization services, and irrigation infrastructure, which are vital for meeting value chain requirements. As a result, their participation remains confined to informal markets where returns are low, and risk exposure is high^[17]. Some constraints manifest in discriminatory lending practices, lower asset ownership, and cultural norms that limit poor households' control over resources and decision-making. Studies^[18] reveal that some smallholder farmers receive significantly less agricultural credit than commercial farmers, despite evidence that smallholder farmers invest more in household welfare and productivity. Besides, contractual arrangements in formal value chains more often require compliance with strict standards and reliable supply volumes. These prevailing conditions are not achievable by small farmers without integrated support packages that combine finance, training, and infrastructure^[19]. Nonetheless, the forms of savings, like VSLAs, have shown positive effects on household and women's empowerment, but their influence on formal value chain integration is bleak^[20]. In conclusion, the article enumerated gaps: low formal credit access among smallholders, including inadequate finance, infrastructure, and capacity; and limited evidence on which financial services most effectively enhance productivity and value chain participation. Tackling these gaps requires evaluation of microfinance interventions and their role in facilitating inclusive value chain development. Against this backdrop, the article evaluates the impact of rural microfinance on smallholder farmers' participation in agri-food value chains in South Africa.

3. Research Questions and Objectives

The study posed the research question: What is the impact of rural microfinance (microcredit, savings, and insurance services) on smallholder farmers' participation in agri-food value chains in South Africa?

Objectives

- i) To identify and synthesize evidence on how microfinance influences smallholder farmers' integration into agri-food value chains.
- ii) To assess which financial services (credit, savings, insurance) have the most significant effect on productivity and market participation.

4. Research Methodology

The study adopted an orderly review, which follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines that allow transparency, replicability, and methodological rigor. The review was designed to synthesize empirical evidence on the impact of rural microfinance on smallholder farmers' participation in agri-food value chains in South Africa. The protocol includes clearly defined objectives, eligibility criteria, data sources, search strategies, screening processes, data extraction methods, and synthesis approaches^[21]. The review was prepared to capture empirical evidence on the impact of rural microfinance on smallholder farmers' participation in agri-food value chains in South Africa. The procedure includes worded objectives, eligibility criteria, data sources, search strategies, screening processes, data extraction methods, and amalgamation approaches.

4.1. Identification

For identification, an all-inclusive search was conducted across multiple electronic databases, including Scopus, Web of Science, Google Scholar, and ScienceDirect, using predefined keywords such as "microfinance," "microcredit," "savings," "insurance," "value chain participation," and "South Africa". However, the initial search generated 820 records. Also, an additional 45 records were identified through manual searches of reference lists, institutional repositories, and grey literature sources such as IFAD, FAO, and World Bank reports. This resulted in a total of 865 records before duplicates were removed.

4.2. Screening

In the screening process, all identified records were transferred into a reference management tool (EndNote X9) to facilitate duplicate removal. However, after removing 85 duplicates, 780 unique records were left for screening. The titles and abstracts were screened against the inclusion and exclusion criteria (**Figure 1**) to regulate relevance. Progressively, 600 records were excluded for reasons such as: not related to rural microfinance, not focused on smallholder farmers, and no linkage to agri-food value chains. At this stage, 180 articles were for full-text review.

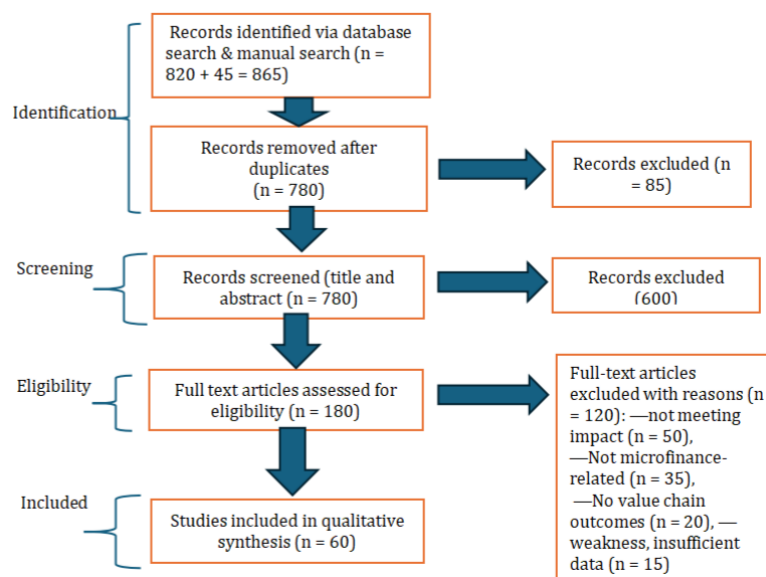


Figure 1. PRISMA flow diagram depicting methodological synthesis.

Source: own compilation, 2025.

4.3. Eligibility

Full-text screening was conducted on 180 articles to assess compliance with all eligibility criteria. These included: studies or articles published between 2010 and 2024, studies focused on rural microfinance services (credit, savings, insurance), studies examining impact on smallholder farmers in South Africa (or comparative sub-Saharan Africa (SSA) contexts with relevance), and inclusion of outcomes related to agricultural productivity, market participation, or value chain addition. In the interim, 120 articles were excluded for the following reasons: Not meeting the analysis on microfinance impact specifically ($n = 50$), aligned and referenced to commercial or large-scale farming ($n = 35$), lacked value chain or market participation indicators ($n = 20$), and had methodological weaknesses or insufficient data ($n = 15$).

4.4. Included

In summary, 60 studies met the inclusion criteria and were incorporated into the study, as this number sufficiently provided quantitative and qualitative synthesis, as depicted in the PRISMA flow diagram in **Figure 1**.

5. Results

The study succinctly used a systematic review to examine the impact of rural microfinance on small farmers' participation in agri-food value chains in South Africa (**Table 1** and **Figure 2**). The objectives of the study were: to identify and synthesize evidence on how microfinance influences smallholder farmers' integration into agri-food value chains, and assess which financial services (credit, savings, insurance) have the most significant effect on productivity and market participation. These objectives were categorized into 6 thematic areas (sub-objectives) to indicate the balance of evidence.

5.1. Frequency Distribution of Reviewed Literature

In the area of access to credit, 28 studies (31%) were used, indicating the most researched area with strong evidence that rural finance primarily serves to

increase smallholder farmers' access to financial capital in South Africa (**Table 1** and **Figure 2**). However, numerous studies^[34] demonstrate that microcredit and savings groups assist in reducing credit challenges, although some caution about the likelihood of over-indebtedness. The impact on productivity and market participation (**Figure 2**) highlights an important cluster of literature with 22 studies representing 24%, showing the positive role of microfinance in improving productivity, commercialization, and integration into the markets. Nevertheless, there is mixed evidence: although access to credit can boost input use and increase yields, poor infrastructure and market volatility may limit long-term benefits^[35]. About value chain linkages, 19 studies (21%) were sampled. The value chain linkages appear critical, with results revealing how microfinance can integrate smallholder farmers into the agri-food value chain through contract farming and value chain finance^[36]. Studies also emphasize the empowerment of women and the sidelined groups of the community through microfinance. But gender inequality will persist if authorities fail to address endemic and systemic barriers like land ownership, land rights, and household decision-making^[37]. The challenges and risk category had 12 studies examined, amounting to 13% of the selected literature. The body of work concentrated on risk, such as debt cycles, the sustainability of MFIs, and financial exclusion. Some studies^[38] warned against assuming that microfinance is a "magic silver bullet" and further highlight the importance of harmonizing services. In the complementary services group, the reviewed literature was 10 studies (11%), which explored insurance, savings, extension services, and digital finance. However, this group is inadequately represented but is known as important in making microfinance interventions more workable^[39].

5.2. Identification and Synthesis of Evidence on How Microfinance Influences Smallholder Farmers' Integration into Agri-Food Value Chains

The role of microcredit in rural South Africa cannot be underestimated because it assists in enhancing the livelihoods of smallholder farmers and low-income

households by giving access to small loans that support agricultural production, micro-enterprises, and household needs. Notwithstanding the challenges such as high interest rates, limited financial literacy, and collateral requirements, microcredit schemes have enabled rural communities to invest in seeds, livestock, tools, and market access, thereby contributing to food security, employment, and local economic development. There are numerous microcredits instituted in South Africa:

i) The Micro Agricultural Financial Institutions, South Africa (MAFISA) was initiated by the South African Department of Agriculture, Land Reform and Rural Development as a targeted rural microcredit facility. MAFISA has successfully incentivized new entrants into farming but often failed to align credit supply with smallholders' needs, provided inadequate technical mentorship, and exhibited bias toward larger livestock borrowers, while minimal flows went toward vegetable (2.2%) and poultry production (<1%) in the 2016 loan book. MAFISA, as a scheme, suffered from weak targeting as marginal and vulnerable farming groups were underrepresented, coupled with the absence of on-site training and reduced loan effectiveness. MAFISA evaluation recommended better linkages between credit provision and extension services, and tailoring design to farmer category diversity. The impact of MAFISA on rural livelihoods appears dauntingly constrained: without integrated advisory support or value-chain linkages, loans often yielded limited income gains. The twist toward larger asset holders further marginalized subsistence and emerging farmers. However, the policy analysis called for a more coherent design linking financial services with mentoring, business training, and inclusive targeting^[40].

ii) Savings and Insurance: VSLAs and Community-based Mechanisms

The Village Savings and Loan Association (VSLA) is a community-managed savings group of mainly 10–

25 local members. The group holds meetings regularly, pools small savings, and internally lends them to members with simple group-determined interest and repayment rules and regulations. At the end of a defined cycle, savings plus interest are distributed. VSLAs also create emergency or social funds resembling micro-insurance. VSLA is adopted in most rural areas of South Africa. Nevertheless, VSLA impact studies originated from Uganda, Malawi, Ghana, and other African contexts, with similar models operating in South African rural areas via NGOs and other stakeholders. Remarkably, VSLAs serve women, youth, and marginal rural households as accessible financial platforms where formal banks are absent^[41]. The savings initiatives, such as Village Savings and Loan Associations (VSLAs) and stokvels, provide a vital safety net for households, allowing them to manage cash flows, absorb economic shocks, and invest in productive assets^[42]. Microcredit schemes have also enabled smallholder farmers and micro-entrepreneurs to access capital that is otherwise unavailable through traditional banking systems, thereby enhancing business growth and increasing agricultural productivity. Nevertheless, access to credit remains uneven, and interest rates are often prohibitively high, limiting the transformative impact of loans for the most vulnerable groups. Additionally, financial products and microfinance in South Africa build social capital by encouraging group-based lending, collective savings, and peer monitoring, which foster trust and community cohesion^[43]. The micro-insurance services in South Africa, though still emerging, protect against agricultural risks, health emergencies, and climate-related shocks, thereby reducing vulnerability and enhancing the resilience of smallholder farmers. Mutually, these microfinance components contribute to financial inclusion and rural development, but their effectiveness depends on inclusive policy frameworks, improved financial literacy, and support for women and marginalized populations.

Table 1. Tabulated Frequency Distribution of Reviewed Literature.

Review Objective	References	Frequency (No. of Studies)
1. Examine the role of microfinance in improving access to credit for smallholder farmers	Armendáriz and Morduch (2015) ^[22] ; Bateman (2010) ^[23] ;	28

Table 1. Cont.

Review Objective	References	Frequency (No. of Studies)
2. Assess the impact of microfinance on agricultural productivity, commercialization, and market participation	Greenberg (2013) ^[24] ; Aliber and Hall (2012) ^[25]	22
3. Explore microfinance linkages with agri-food value chains (value chain finance, input-output models, contracts)	FAO (2016) ^[26] ; IFAD (2022) ^[27]	19
4. Analyze gender and inclusivity issues in microfinance and value-chain participation	Agholor (2019) ^[28] ; Fletschner and Kenney (2014) ^[29] ; FAO (2020) ^[30]	15
5. Evaluate challenges, risks, and limitations of microfinance interventions	Chapman et al. (2021) ^[31]	12
6. Review evidence on complementary services (insurance, savings, extension, digital finance, policy)	IFAD (2022) ^[32] ; Hill et al. (2019) ^[33]	10

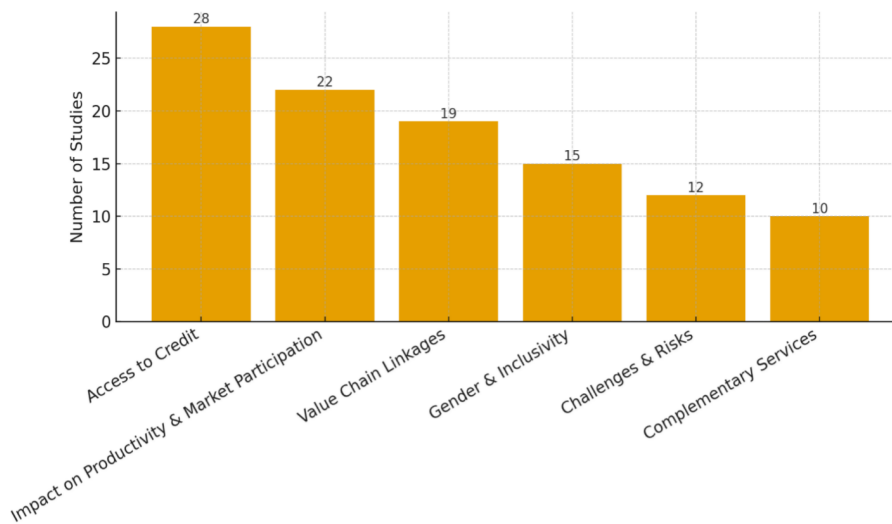


Figure 2. Bar chart of the frequency distribution of reviewed literature across thematic areas.

5.3. Financial Services (Credit, Savings, Insurance) and Significant Effects on Productivity and Market Participation

In general, microcredit has emerged as a central pillar of rural financial inclusion strategies in sub-Saharan Africa (SSA), including South Africa, aimed at enabling smallholder farmers to overcome liquidity constraints and enhance their engagement in agriculture. Codified access to credit is hypothetically linked to greater adoption of improved technologies, investment in farm inputs, and participation in organized agri-food value chains^[44]. Through the relaxation of capital constraints, microcredit is expected to increase productivity and profitability, enabling smallholders to comply with the quality, volume, and timing requirements of high-value

markets^[45]. However, empirical evidence on these outcomes is mixed, both within South Africa and across the SSA context.

Several studies^[46] have assessed the role of credit in facilitating smallholder integration into structured markets in SSA. Evidence from the “Transforming South African Agriculture (TSAA)” study indicates that access to formal or semi-formal credit was significantly associated with farm expansion, technology adoption, and higher levels of commercialization. Smallholder farmers with access to microcredit are more likely to participate in organized value chains, such as supplying supermarkets, agro-processors, and contract farming arrangements, as compared to their counterparts without credit access. However, the approach underpinning these outcomes is primarily linked to the ability of credit recipi-

ents to purchase high-quality inputs, invest in irrigation and mechanization, and cover transaction costs associated with market entry^[42]. For example, credit enables farmers to produce the consistent quantity and quality demanded by formal buyers, thereby meeting stringent procurement standards. In the absence of such financial leverage, smallholder farmers remain confined to informal local markets characterized by low and volatile prices^[47]. The government has, over the years, addressed these concerns of inadequate finance by introducing MAFISA to address these gaps by providing affordable credit tailored to smallholder needs. The assessments of MAFISA demonstrated modest success, such that beneficiaries reported increased participation in institutional markets, although outreach remains limited, and loan defaults persist as a challenge^[48]. Community-based mechanisms, such as Village Savings and Loan Associations (VSLAs), have also contributed to strengthening financial inclusion and indirectly enhancing market participation by improving liquidity and resilience^[49]. Nevertheless, these informal schemes often lack the scale to finance the substantial investments required for integration into high-value chains such as horticultural exports or large-scale processing.

Notwithstanding the positive outlook, structural constraints, such as inadequate extension services, poor infrastructure, and weak coordination between credit providers and value chain actors, continue to limit the transformative potential of microcredit. Therefore, while evidence from South Africa supports the hypothesis that access to credit enhances value chain integration, this relationship is not instinctive but requires complementary interventions^[50].

5.4. Broader Evidence from Sub-Saharan Africa: Mixed Outcomes

Within the length and breadth of SSA, the relationship between microcredit and agricultural commercialization is unclear. A study^[51] reports significant positive impacts, while others highlight negligible or even negative outcomes. For example, studies in Kenya and Ghana show that microcredit improved smallholder participation in contract farming schemes and high-value horticultural markets by easing liquidity constraints for input

purchases and compliance with quality standards. In a similar vein, in Ethiopia, access to rural credit was associated with a shift from subsistence crops to market-oriented production, thereby deepening farmers' integration into domestic and export value chains^[52]. On the other hand, evidence from countries such as Malawi and Uganda reveals limited impact of microcredit on value chain participation when loans were too small, repayment terms were rigid, and complementary services such as extension and market linkages were inadequate^[50, 51]. However, the conglomeration of outcomes underscores the importance of contextual factors, including loan design, interest rates, repayment schedules, and the presence of enabling infrastructure. Credit interventions that are integrated with technical support, input supply systems, and market access programmes tend to yield stronger results than standalone credit schemes^[53].

5.5. Productivity Gains through Microcredit

Apart from market participation, microcredit influences agricultural productivity primarily through its role in enabling technology adoption and efficiency improvements. In the context of South Africa, access to credit has been linked to increased use of improved seeds, fertilizers, and mechanization services, all of which contribute to higher yields^[54]. Empirical evidence suggests that credit-driven technology adoption can raise agricultural productivity by approximately 14% on average, and this is mainly due to improved input use and better farm management practices^[55]. Comparable findings have been reported in SSA more broadly, for instance, in Nigeria, credit recipients achieved significantly higher yields of maize and rice, attributed to timely input purchases and the adoption of improved agronomic practices^[56]. Similarly, studies in Ghana and Tanzania also indicate that credit enhances labour productivity and reduces inefficiencies by enabling farmers to access mechanized services rather than relying solely on manual labour^[57]. Throughout SSA, productivity gains are contingent on the effective utilization of credit for productive purposes. However, where credit and funds are diverted to non-agricultural purposes or where high transaction costs limit their

timely disbursement, yield improvements remain very little^[58]. Additionally, credit alone cannot address systemic productivity constraints such as climate risks, soil degradation, and inadequate extension support. Therefore, while credit is a necessary enabler, it is not sufficient without complementary investments in knowledge transfer, infrastructure, and risk management instruments like insurance.

5.6. The Role of Savings and Insurance in Smallholder Agriculture

In Sub-Saharan Africa (SSA), smallholder farmers face recurring challenges in accessing formal financial services, which constrain their ability to invest in productivity-improving technologies and participate in structured agri-food value chains. Although microcredit has received substantial attention in developmental discourse, the roles of savings and insurance services are equally critical in building resilience, smoothing consumption, and facilitating agricultural investment^[59]. The provision of financial tools provides smallholder farmers with a method to manage risk and accumulate capital, while reducing dependence on expensive informal credit or distress sales during periods of economic stress.

5.7. Role of Savings: VSLAs and Livelihood Resilience

In South Africa, savings are vital for smallholder households operating under income uncertainty and limited access to formal banking services. The Village Savings and Loan Associations (VSLAs) have emerged as an effective community-based strategy for promoting financial inclusion and enabling incremental investment in agriculture^[60]. VSLAs are self-managed groups, mobilizing savings among members, and providing a platform for small loans and emergency funds without requiring collateral. A collection of evidence indicates that participation in VSLAs enhances household resilience to shocks, such as drought, illness, or market price fluctuations, by providing access to emergency funds^[61]; while the accumulation of savings allows smallholders to make small-scale agricultural investments, including the pur-

chase of improved seeds, fertilizers, and tools. Although the loan amounts available through VSLAs are relatively modest compared to formal credit schemes, they play a significant role in reducing vulnerability and supporting livelihood diversification. Contextually, VSLAs have been linked to improved food security and income stability, particularly among women farmers, who constitute most members in such groups^[61]. Apart from financial benefits, VSLAs foster social cohesion and strengthen informal safety nets, creating a foundation for collective action in agricultural marketing and value chain engagement. However, the scale of capital mobilization remains insufficient for large investments in mechanization or infrastructure, limiting their capacity to drive full integration into high-value chains^[62].

5.8. Role of Insurance: Risk Management and Constraints

Figure 3 depicts the conceptual framework of the role of savings and insurance in value chain participation. The risky nature of agriculture cuts across high exposure to climatic shocks, pests and diseases, and price volatility. The weather index and risk insurance have been promoted as a tool for mitigating farm production risk, enabling farmers to invest in higher-yielding technologies^[63]. Through ensuring compensation in the event of adverse weather conditions, insurance reduces farmers' risk aversion and encourages the adoption of productivity-enhancing inputs. Nevertheless, the commitment to agricultural insurance in SSA and South Africa specifically remains low and unattractive^[64]. Studies^[65] indicate that smallholders exhibit limited willingness to pay for insurance premiums, primarily due to low farm incomes, inadequate understanding of insurance products, and a lack of trust in financial institutions. Inadequate insurance education and income levels have been identified as key determinants of the adoption of insurance policies. Furthermore, these constraints are heightened by high transaction costs, poor infrastructure for premium collection, and the complexity of index-based products^[66]. Additionally, bundled insurance schemes, where insurance is offered alongside microcredit by microfinance institutions (MFIs), failed to enhance the rate of adoption of insur-

ance services. For example, in Malawi and Kenya, adoption of insurance services remained below 20% despite subsidies and extensive awareness campaigns^[67]. By im-

plication, financial literacy, product design, and affordability constraints persist as barriers to scaling insurance in rural markets and households.

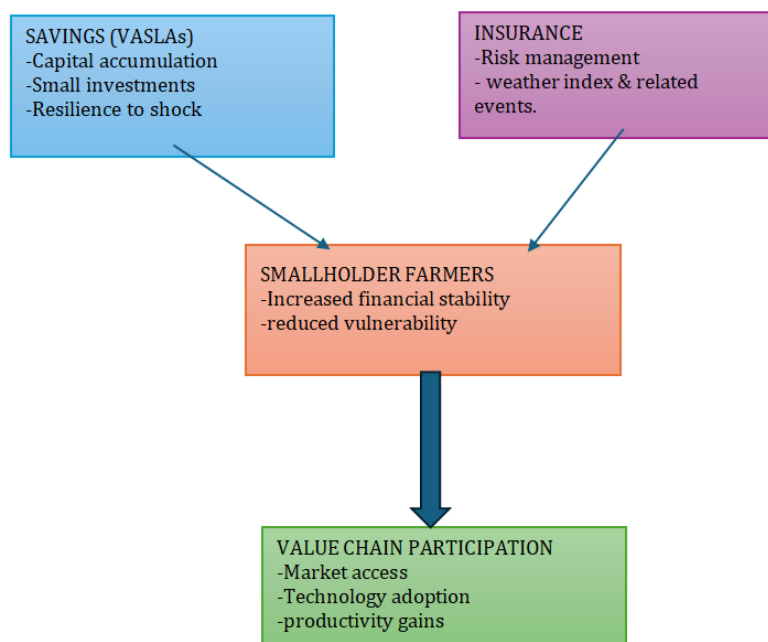


Figure 3. Conceptual framework depicting the role of savings and insurance in value chain participation.

Source: own compilation, 2025.

5.9. Limited Impact Due to Low Coverage

Although insurance has the potential to stabilize farm income, its impact remains low due to inadequate coverage and poor acceptance of insurance policies. In situations where insurance products are available, only a small proportion of farmers participate, indicating that risk-pooling benefits are minimal and operational costs remain high for insurers^[68]. In addition, weather index insurance, though innovative, faces challenges where insurance payouts do not match actual farm losses, cascading to further loss of confidence by smallholder farmers. Agricultural insurance markets are average, developed for commercial farmers, but remain inaccessible to smallholder farmers due to affordability and structural barriers^[69]. Most programmes targeting smallholders, including public-private partnerships, have achieved limited success in reducing these barriers. Consequently, most smallholders continue to rely on informal coping strategies, such as savings groups and social networks, to manage agricultural risks associated with farm production^[70].

The trend in socio-economic disparities remains an important determinant of financial inclusion and agricultural transformation in SSA, including South Africa. In SSA, rural microfinance enhances smallholder participation in markets and improves livelihoods, but structural inequalities, such as unequal land ownership, educational gaps, and social norms, often mediate their effectiveness^[71]. Considering these dynamics is vital for designing inclusive financial systems that address the needs of marginalized groups, particularly women and low-income farmers. This study explores the gendered and socio-economic dimensions of microfinance access and its implications for agricultural productivity and value chain participation. However, in South Africa, women farmers encounter barriers to accessing formal credit, including collateral requirements tied to land ownership and discriminatory lending practices and extension advisory services. Notwithstanding the expansion of microfinance institutions (MFIs) and targeted programmes such as the MAFISA, evidence reveals that gaps persist in formal financial access^[72]. Through-

out SSA, women account for a substantial share of the agricultural workforce yet receive less than 10% of agricultural credit and own only about 12% of land. These limitations hinder women's ability to secure agricultural extension services and loans that require land as collateral. Subsequently, women often depend on informal financial mechanisms, such as VSLAs, which emphasize trust-based lending and flexible terms. However, these arrangements enhance women's liquidity and resilience, but generally provide smaller loan amounts, constraining their ability to make large-scale agricultural investments^[73]. Female borrowers in SSA more often make smaller investments compared to men but exhibit higher reliability in repayment. In addition, their financial priorities often include post-harvest technologies, such as storage facilities and small-scale processing equipment, aimed at reducing losses and adding value to produce^[74]. On the contrary, male borrowers tend to allocate more resources to input-intensive production, including fertilizers, pesticides, and mechanization, as well as renewable energy investments like solar panels^[75]. Therefore, these different investment patterns reflect not only gendered preferences but also the challenges women face in accessing larger loan amounts and engaging in capital-intensive farming^[76]. Similar patterns exist in South Africa, where women smallholders prioritize household food security, while men invest more in market-oriented activities^[77]. There are intersectional factors such as age, marital status, single parenthood, and educational level that influence access to and outcomes from microfinance services^[78]. Studies abound depicting younger farmers and single mothers often facing greater barriers to formal credit due to perceived higher risk and lack of collateral^[79]. Levels of education play an important role in financial literacy, loan application success, and effective utilization of credit for productive investments^[80]. Smallholder farmers with higher educational attainment are more likely to access credit and achieve greater productivity gains, irrespective of gender^[81]. The disparity in income level also determines the ability to leverage credit for agricultural transformation. More affluent smallholder farmers, both male and female, can complement microfinance loans with personal savings or other resources, enabling them to invest in profitable

ventures. In contrast, less affluent farmers often divert loans toward immediate consumption needs, reducing their developmental impact^[82]. Therefore, these socioeconomic dynamics highlight the need for tailored financial products that consider the heterogeneity within gender groups in the community.

6. Implications of the Impact of Rural Microfinance on Smallholder Farmers' Participation in Agri-Food Value Chains in South Africa

Smallholder farmers' integration into agri-food value chains is central to agricultural transformation and rural poverty reduction in South Africa, given that the tactical role of microcredit, savings mechanisms, and insurance in addressing liquidity constraints, enabling investments in technology and inputs, and enhancing resilience to shocks^[83]. Firstly, in South Africa, microcredit shows the strongest evidence of impact on productivity gains, farm expansion, and market participation, especially when credit is affordable and flexible. Nevertheless, many smallholders remain excluded from formal credit markets due to collateral requirements and risk perceptions by lenders. In addressing this challenge, expanding credit guarantee schemes and designing tailored financial instruments with favourable terms such as lower interest rates, seasonal repayment structures, and group lending models could significantly enhance access^[84]. Secondly, the integration of village savings groups, for example, VSLA, with formal financial systems has proven effective in promoting incremental investments and household resilience^[85]. But their limited capital base constrains larger investments. However, integrating VSLAs with formal credit systems, such as linking them to microfinance institutions or cooperative banks, could enable members to access higher-value loans while retaining the social capital benefits of savings groups^[86]. Such hybrid models have been piloted in South Africa with promising results, enhancing both financial inclusion and empowerment, particularly for women^[87]. Thirdly, financial literacy remains a barrier to the effective use of microfinance among smallholders^[88]. Also, gender disparities in access to credit per-

sist across SSA, with women often receiving smaller loan amounts or entirely facing exclusion, limiting their participation in value chains despite being major contributors to agricultural production.

The ambiguity and limited understanding of loan terms, repayment schedules, and risk management often lead to over-indebtedness or underutilization of credit^[89]. However, incorporating financial education and debt-management training, particularly targeting women and low-income smallholders, could improve credit use and investment outcomes. Laudable in this direction is the Mahlathini Development Foundation, which has demonstrated that farmer training programmes on budgeting, record-keeping, and savings planning significantly enhance resilience and loan repayment performance^[90]. In South Africa, insurance uptake remains extremely low despite its potential to mitigate risk and encourage investment in productivity-enhancing technologies^[91]. The main obstacles are cost-related, lack of trust, and limited awareness of insurance products. Addressing this will depend on index-based insurance with microcredit and providing education on pricing and benefits^[92]. Also, introducing subsidies or premium-sharing mechanisms during the initial rollout phase could improve affordability and build trust among smallholders^[93].

7. Discussion

The study presents the impact of rural microfinance on smallholder farmers' participation in agri-food value chains in South Africa. The study reveals that microfinance services, comprising credit, savings, and insurance, play critical but differentiated roles in enhancing smallholder farmers' productivity and integration into agri-food value chains. Nevertheless, the impact of these services is highly contingent on programme design, farmer characteristics, and broader socio-economic constraints. Access to credit has demonstrated positive effects on farm productivity, market participation, and farm expansion, primarily through increased input use. Findings from South Africa's *Transforming South African Agriculture* study show that credit facilitates mechanization, the use of improved seeds, and

participation in formal markets. This results in higher yields and household incomes, with yield improvements estimated at approximately 14%, largely driven by technological adoption and technical efficiency gains. However, these impacts vary across programme designs like interest rates, collateral requirements and farmer characteristics, including education level, resource endowment, and tolerance to risk.

The savings aspects, particularly VSLA, play a critical role in incremental agricultural investments and risk management. Findings from South Africa indicate that VSLAs enhance liquidity, enable the purchase of small agricultural inputs, and reduce reliance on informal lenders. Apart from financial benefits, savings groups foster social capital, mutual trust, and collective action, which indirectly facilitate market engagement. Whereas savings mechanisms do not typically enable large-scale farm expansion but contribute significantly to household resilience against shocks such as drought and price volatility. Concerning agricultural insurance, especially weather index-based products, remains underutilized among smallholders in SSA, including South Africa. The adoption rates are low due to high premiums, limited financial literacy, and low trust in insurers.

Results indicate that gender and socio-economic differences significantly influence the impact of microfinance. Women and worse-off smallholders often benefit less in scale due to smaller loan sizes and structural barriers such as a lack of collateral and limited land rights. Nevertheless, women tend to invest in risk-averse strategies, such as post-harvest technologies and small-scale value addition, rather than high-risk, input-intensive production. The intersectional factors, including education, income, and household status, further shape credit access and utilization patterns. Abating these disparities requires targeted interventions that combine financial inclusion with gender-responsive agricultural development policies.

Addressing these challenges requires integrating financial inclusion strategies with broader gender equity policies, including land reform, education, and social protection measures. Microfinance programs alone cannot overcome entrenched structural barriers; they must be part of holistic interventions that enhance women's

agency and socio-economic capabilities.

In South Africa, the outlook between 2010 and 2024 indicates that microfinance in rural areas has evolved into a mixed picture, presenting MAFISA as a formal microcredit intervention with potential for agrarian transformation but hampered by weak targeting, lack of technical support, and limited penetration among marginal farmers. On the contrary, VSLAs and community-based savings groups provide accessible, sustainable platforms for savings, credit, and informal insurance, especially for women and youth in underserved areas. Forthcoming progress depends on integrating these modalities, including VSLAs as entry points for financial literacy and foundational capital, linking groups to formal credit schemes and advisory services, and developing microinsurance products tailored to rural risk profiles. Strengthening governance structures, embedding financial products within broader agricultural development strategies, and ensuring equitable outreach to less privileged households are crucial. The paper recommends a context-sensitive, inclusive, and supportive framework that can make meaningful contributions to rural resilience, agricultural productivity, and poverty reduction. Nevertheless, scale-up will require alignment of policy, technical support, and institutional coordination to ensure that both credit and savings services deliver developmental impact.

8. Conclusion

The review paper underscores the vital role of rural microfinance in enhancing smallholder farmers' participation in agri-food value chains in South Africa. Collectively, credit, savings, and insurance each account for distinct ways to enhance productivity and resilience. Credit has exemplified enough potential for improving input use, mechanization, and market engagement, with evidence of yield increases and household income growth. Nevertheless, restrictive loan conditions and collateral requirements limit access for many marginal farmers.

The savings instruments, especially Village Savings and Loan Associations (VSLAs), serve as accessible options for financial inclusion because they improve liquidity, support small-scale agricultural investments, and of-

fer assistance through collective action. Although they rarely facilitate large-scale farm expansion, their impact on household resilience and social capital is substantial, particularly for women and youth in underserved communities. On the other hand, agricultural insurance remains underutilized due to high costs and limited awareness, despite its potential to manage risks in climate-challenged areas.

The results also highlighted persistent gender and socio-economic disparities. Women and less privileged farmers often access smaller loan sizes and face barriers such as limited land rights and collateral, limiting their capacity to scale investments. Nonetheless, their investments in value-adding, risk-averse strategies point to the need for gender-responsive microfinance models that complement financial inclusion.

Smallholder farmers in South Africa have mixed experiences between 2010 and 2024, with initiatives such as MAFISA demonstrating potential but remaining constrained by weak targeting and limited technical support. Going forward, and integrating these approaches within broader agricultural development strategies, supported by institutional coordination and policy alignment, may offer the most promising pathway for strengthening rural resilience, enhancing productivity, and reducing poverty through inclusive participation in agri-food value chains.

9. Recommendation

The evidence base is heavily weighted toward access to credit and productivity impacts, reflecting the traditional microfinance focus. In the main, value chain linkages and inclusivity are growing research areas, and align with current agricultural development discourse in South Africa. The challenges, risks, and complementary services are relatively underexplored, suggesting a potential gap for further research.

Supplementary Materials

The supporting information can be downloaded at <https://journals.nasspublishing.com/files/RWAE-2627-Supplementary-Materials.zip>.

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Conflicts of Interest

The author declares no conflict of interest.

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