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Agricultural Value Chain Finance Models And Sustainable Industrialisation: Comparative Insights From Zimbabwe And South Africa

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Abstract
Agricultural Value Chain Finance (AVCF) models, including contract farming, outgrower schemes, and aggregator arrangements, are increasingly recognised as strategic mechanisms to bridge financing gaps and link smallholder farmers to formal markets in Southern Africa. This conceptual paper synthesises evidence from South Africa and Zimbabwe to examine the structures, benefits, challenges, and sustainability implications of these models. Findings highlight that while contract farming and outgrower schemes provide farmers with access to inputs, credit, technical support, and assured markets, they also face risks related to power asymmetries, side-selling, and gender disparities in land ownership and participation in contracts. Aggregator models enhance collective bargaining and resource access but require improved governance and equitable benefit-sharing. The analysis highlights the crucial role of AVCF in promoting sustainable industrialisation, rural employment, and food security, all of which align with multiple Sustainable Development Goals. As a conceptual study, it proposes an integrative review research design that combines qualitative case studies and quantitative impact assessment as the most suitable methodology for empirically evaluating the effectiveness and inclusivity of these models. Policy and practice must therefore focus on strengthening institutional frameworks, securing land tenure, promoting gender inclusion, and integrating sustainable agricultural practices to harness the full potential of these financing models for inclusive and resilient rural development.
Keywords: *Agricultural Value Chain Finance (AVCF), Sustainable Industrialisation, Contract Farming, Outgrower Schemes, Aggregator models.*

1. INTRODUCTION

Agriculture remains a foundational pillar for economic development in many Sub-Saharan African countries, serving as a primary source of livelihoods, employment, and food security (van Rooyen, 2014). However, increasing evidence suggests that limited access to financial services remains a significant obstacle to improving agricultural productivity among rural farmers in sub-Saharan Africa (Kassouri & Kacou, 2022). Among the most critical challenges is the limited access to finance, particularly for smallholder farmers and agribusinesses operating in fragmented value chains. Although African agriculture holds significant potential for rapid growth, a new range of policy tools is necessary to help smallholder farmers access modern agricultural technologies and financing, adapt to climate change, and implement sustainable land use practices that enable them to participate in emerging global carbon markets (Adesina, 2010). In response, Agricultural Value Chain Finance (AVCF) has gained interest for enabling value chain participants to utilise social capital to meet their financial needs, aiming to improve access to credit and reduce transaction costs (Villalba et al., 2023).

AVCF encompasses a variety of financing models designed to embed capital, input provision, and technical support directly into value chain relationships. These include contract farming, aggregator schemes, outgrower programmes, and farmer or producer organisations. Each model facilitates different mechanisms of coordination and risk-sharing among value chain actors, offering tailored solutions to financing constraints

across diverse agricultural systems. By enabling more predictable production and market linkages, these models not only mitigate lender risk but also contribute to the long-term viability and resilience of agribusiness ecosystems.

Importantly, AVCF models are increasingly recognised for their potential to contribute to sustainable industrialisation, a development paradigm that emphasises inclusive growth, employment creation, gender equity, environmental sustainability, and enhanced value addition (Ba, 2022; Shanmuka et al., 2025). By channelling investment into rural-based agro-processing, stimulating organised production, and fostering backwards and forward linkages across sectors, AVCF can act as a catalyst for structural transformation in agrarian economies (Dürr, 2017). This aligns with the broader agenda of the United Nations Sustainable Development Goals (SDGs), especially those related to poverty reduction (SDG 1), zero hunger (SDG 2), gender equality (SDG 5), decent work and economic growth (SDG 8), industry and innovation (SDG 9), and sustainable production systems (SDG 12).

This article adopts a conceptual and comparative lens to explore how AVCF models are theorised and how they have been implemented in two contrasting Southern African economies: Zimbabwe and South Africa. While both countries share a regional context, they differ significantly in terms of institutional frameworks, financial ecosystems, and agricultural industrialisation trajectories. The paper examines how these models have evolved within each national setting and assesses their contribution to sustainable industrial development.

The article proceeds as follows: Section 2 presents a literature review of AVCF and sustainable industrialisation. Section 3 conceptualises the four primary AVCF models as well as analyses how these models have emerged and functioned in Zimbabwe and South Africa. Section 4 explores their contributions to sustainable industrialisation objectives. Section 5 discusses theoretical and policy implications. The final section is the conclusion, and suggests directions for further research.

2. LITERATURE REVIEW

Agricultural value chain finance (AVCF) has increasingly been recognised in academic and policy literature as a mechanism that integrates financial solutions into agrarian systems to promote growth, reduce poverty, and stimulate structural transformation. This section reviews empirical studies that examine the relationship between AVCF models, such as contract farming, outgrower schemes, aggregator models, and producer organisations and key elements of sustainable industrialisation, including productivity, employment, women's empowerment, environmental sustainability, and export promotion. Adopting a funnel approach, the literature is organised from global to regional to national contexts, to ground the study in a comparative African framework.

Globally, evidence from countries such as China, India, Indonesia, and Nepal highlights how AVCF can enhance productivity, improve incomes, and reduce poverty. However, outcomes vary widely depending on the nature of the value chain model and the socio-economic context. In China, Wang et al. (2021) found that participation in agricultural value chains reduced poverty levels among kiwifruit farmers by increasing access to sustainable technology and financial inputs, although the benefits differed by gender. Ren et al. (2021) used an endogenous switching regression (ESR) model to show that contract farming was positively associated with environmental sustainability, primarily due to the increased adoption of eco-friendly practices. Similarly, Lin et al. (2022) confirmed that cooperatives significantly improved rice productivity, although regional differences persisted in terms of the impact's strength.

In India, (Ray et al., 2021) observed that while contract farming improved incomes and reduced debt burdens, many smallholder farmers struggled with access to inputs and compliance with quality standards, undermining their welfare gains. In Nepal, Kafle et al. (2022) and Mishra et al. (2016) noted that contract participation correlated with increased farmer income and asset accumulation. In contrast, Khan et al. (2019)

found that the benefits of contract farming varied by crop, positively influencing the income of potato farmers but having no effect on maize producers. Similar inconsistencies were identified in Indonesia, where (Jahroh & Meliala, 2021) found that aggregator models shortened distribution channels and enhanced price transparency; however, their findings were based on a limited sample size, suggesting a need for broader validation.

Within Sub-Saharan Africa, a similar pattern of mixed but context-specific findings emerges. In Benin, Olounlade et al. (2020) applied propensity score matching (PSM) and the local average treatment effect (LATE) model to analyse the impact of contract farming on income and food security. Contrary to global trends, the study found a negative correlation: participation in contract farming reduced both income and food security, as farmers were compelled to grow non-food crops. Guillaume and Paule (2018) in Senegal observed similar divergences, noting that while production contracts enhanced income, marketing contracts had little effect on income and negatively influenced food security. Ruml and Qaim (2020) in Ghana distinguished between resource-providing and marketing contracts, showing that the former increased productivity while the latter had no significant effect. Their later study Debela et al. (2022), also highlighted how women-led contracts were more likely to yield positive nutritional outcomes, stressing the role of gender in AVCF effectiveness.

In East Africa, evidence from Ethiopia generally supports the claim that AVCF contributes to rural income growth. Bezabeh et al. (2020), using a Probit model, reported that contract farming in the chickpea and vegetable sectors enhanced farmer incomes but did not promote women's empowerment. Wendimu et al. (2016) found, however, that outgrower schemes negatively affected farmers' income and asset accumulation, with traditional farming methods yielding better results. Machio and Meemken (2023), examining five countries including Tanzania, noted that contract farming is male-dominated and that conclusive evidence on its impact on women's welfare is still lacking.

Turning to the national level, studies in Zimbabwe predominantly focus on contract farming within tobacco, cotton, and sugarcane value chains. Pangapanga-Phiri et al. (2024) used ESR and PSM models to confirm that contract farming boosts production levels a finding echoed by (Mukucha & Chari, 2024) in cotton farming. (Mazwi et al., 2018), found that contract farmers gained access to inputs, extension services, and asset accumulation; however, they were vulnerable to debt due to high interest charges and limited price control. Their follow-up study Mazwi et al. (2020) showed that many outgrowers exited schemes due to unfavourable output pricing. Similarly, Chingosho et al. (2021) revealed that 66% of tobacco farmers were trapped in debt cycles, which risked reinforcing rural poverty. These findings align with those of Nuhu et al. (2021) and Ndimbo and Haulle (2024), who concluded that contract farming can worsen inequality, contribute to land dispossession, and cause environmental degradation through disproportionate benefits to medium-scale farmers, loss of land for the poorest, and increased use of harmful agricultural practices. In sugarcane production, Mazwi (2020) noted that power asymmetries allowed contractors to dominate outgrowers, eroding the latter's ability to accumulate capital and creating conditions of structural indebtedness.

In South Africa, the focus of AVCF literature is more diversified, with a stronger emphasis on producer organisations and market access. Sinyolo and Mudhara (2018) found that village-based producer organisations improved farmer income but were marred by gender inequality, with men benefiting more than women. Contrarily, Mdoda and Christian (2022) observed that the commercialisation of vegetable farming, particularly in irrigated systems, enhanced women's empowerment. Their findings were supported by (Christian et al., 2024), who found that 70% of irrigated vegetable farmers in the Eastern Cape were women. That participation significantly improved their market access and income generation.

In summary, the literature reviewed at global, regional, and national levels demonstrates that AVCF holds the potential to make a meaningful contribution to sustainable industrialisation. However, results remain

inconsistent and highly contingent on factors such as contract design, institutional support, gender dynamics, and crop specificity. The tendency of contract models to concentrate benefits among already-resourced farmers, while marginalising women and the ultra-poor, is a recurring theme. Similarly, while AVCF often increases productivity, it does not uniformly improve food security, employment quality, or environmental sustainability. These mixed outcomes underscore the need for further conceptual work and comparative analysis to clarify the conditions under which AVCF can foster inclusive, sustainable transformation.

This article addresses this need by conceptually analysing AVCF models and exploring their implementation in Zimbabwe and South Africa. In doing so, it aims to identify their contributions and limitations in driving the core elements of sustainable industrialisation in Southern Africa.

3. Agricultural Value Chain Finance (AVCF) Models

AVCF models refer to structured financial frameworks that facilitate access to finance for actors within agricultural value chains ranging from production to processing and marketing. These models reduce risk and address financing gaps by leveraging linkages among value chain participants. Among the dominant models are contract farming, outgrower schemes, and aggregator-led financing, each tailored to specific commodity dynamics and the capacities of various actors (Kyamagero et al., 2024).

3.1 Outgrower Schemes Vs Contract Farming

Although often used interchangeably, outgrower schemes and contract farming differ in structure and institutional engagement (Abramovich & Krause, 2025; Schüpbach, 2014). Outgrower models typically feature a central 'nucleus' firm that supports smallholder production through inputs, technical assistance, and guaranteed markets, as is common in plantation crops such as sugarcane, tea, and tobacco (Brüntrup et al., 2018; Dieterle, 2022). Contract farming, in contrast, involves pre-agreed terms on pricing and delivery but may lack a physical nucleus or extensive support systems, making it more flexible but also more variable in its execution (Ncube, 2020; Ruml & Qaim, 2020). Essentially, outgrower schemes are a more integrated and formalised subset of contract farming (Kyamagero et al., 2024).

Furthermore, (Bellemare & Bloem, 2018) cite Glover (1990), who distinguishes outgrower models as typically state-led or NGO-supported, while private firms primarily drive contract farming. Empirical studies indicate that outgrower schemes can significantly improve farmers' productivity, incomes, and market access, thereby contributing to rural industrialisation, employment, and exports (Nhan et al., 2020; Umoh et al., 2019).

3.2 Outgrower Schemes.

Outgrower schemes establish formal partnerships between agribusinesses and smallholders, where firms supply inputs, offer technical training, and guarantee off-take, while farmers commit to cultivating specific commodities under agreed conditions (Abegunde, 2021; Farnworth & Gallina, 2017). These backwards linkages benefit both parties: firms secure supply, and farmers gain access to markets, finance, and production support (Abegunde, 2021). However, implementation risks include side-selling, high operational costs, logistical challenges, and farmer default (Brüntrup et al., 2018; Mango & Kugedera, 2022). Parallel trading, where contracted farmers sell to third parties for better terms, is a common practice that erodes trust and contract stability (Abramovich & Krause, 2025; Action for Research, 2009). Firms engage in outgrower models to expand production capacity, reduce input costs, avoid land purchases, and enhance social legitimacy (José Leonardo de Moraes Gonçalves et al., 2020; Kyamagero et al., 2024). On the farmer side, motivations include access to credit, subsidised inputs, training, and guaranteed payments (Akuriba & Tangonyire, 2020; Konja & Abdulai, 2024). Participation is influenced by demographic and structural factors, such as gender, education, farm size, and proximity to the contracting firm (Konja & Abdulai, 2024; Kyamagero et al., 2024).

3.2.1 Regional Experiences in Outgrower Schemes

Outgrower schemes have evolved from their early origins in the United States during the 1930s to become a widely adopted model across developing economies since the 1960s. In countries such as Thailand, Vietnam,

and across Latin America, these models have been applied to aquaculture, cotton, and sugarcane sectors. While productivity gains have often been realised, issues around unequal risk-sharing and contract enforcement remain prominent (Joffre et al., 2020; Marks, 2022). In Africa, outgrower arrangements have served as mechanisms to modernise agriculture and integrate smallholders into formal markets. Nigeria and Ghana have employed these schemes in cassava, maize, cocoa, and oil palm production, leading to increased yields and incomes. However, their success depends heavily on institutional support and equitable benefit sharing (Asravor et al., 2025). Kenya's tea and horticulture industries are built on contract farming networks, although they continue to face challenges, including enforcement issues and delayed payments (Qiang et al., 2021; Ulrich, 2014). In Zambia, Malawi, and Mozambique, schemes in sugar, tobacco, and cotton have yielded mixed results due to factors such as market volatility, infrastructure limitations, and unstable input supply chains (Leite et al., 2020; Ncube, 2020).

In South Africa, outgrower models have been strategically positioned as tools for post-apartheid agrarian reform. Large agribusinesses in sugarcane, forestry, and poultry such as Mondi Zimele and Rainbow Chicken have collaborated with black farmers to promote inclusive rural economic development and strengthen their supply chains (Greyling et al., 2015; Marokane, 2024; Ndlela & Worth, 2021). These arrangements have contributed to entrepreneurship and job creation; however, persistent barriers, such as insecure land tenure, imbalanced contract negotiations, and weak farmer capacity, continue to hinder their transformative potential (Meyfroidt et al., 2022; Peskett et al., 2023). A successful future for these models in South Africa will depend on stronger institutional frameworks, effective land reform, and improved farmer support systems (Ndhlovu, 2025).

In Zimbabwe, following the disruptions of the Fast Track Land Reform Programme (FTLRP), outgrower arrangements became central to rebuilding broken value chains. Supported by both private firms and NGOs, schemes in tobacco, sugarcane, and poultry have revitalised production and exports. For instance, companies such as Tian Ze Tobacco and Tongaat Hulett have enabled smallholder access to finance and markets (José Leonardo de Moraes Gonçalves et al., 2020; Kyamagero et al., 2024). In the poultry sector, firms such as Irvine's and Nhema Chickens support broiler producers through bundled services, including input provision, technical support, and off-take guarantees, often complemented by microfinance institutions and NGOs (Chimonyo et al., 2023; Masuka et al., 2025). Despite ongoing challenges such as price manipulation, high input costs, and macroeconomic instability (Mafigu et al., 2024; Phiri et al., 2023), poultry outgrower schemes remain a scalable and relatively inclusive pathway for rural economic development (Chigwada et al., 2022; Shonhe et al., 2020).

3.2.2 Benefits of outgrower schemes

Outgrower arrangements offer a range of mutual benefits for both contracting companies and smallholder farmers. For firms, these schemes secure consistent raw material supply, enable production standardisation, reduce costs, diversify geographic risks, and allow flexible labour strategies. Companies also benefit from enhanced supply chain control and opportunities for product quality assurance and export readiness, often supported by state programs. For farmers, participation typically offers access to inputs, technical training, credit facilities, and guaranteed markets, all of which contribute to improved productivity and household incomes. In addition, outgrower schemes provide smallholders with learning opportunities, enhance transparency in transactions, and create pathways into export markets and commercial agriculture. Overall, these arrangements support rural industrialisation by integrating smallholders into competitive agro-industries.

3.3 Contract Farming

Contract farming is a structured agricultural arrangement where farmers commit to producing specific crops or livestock under predefined terms set by buyers, such as agribusinesses or processors. This system aims to

integrate smallholder farmers into commercial value chains, providing them with access to markets, inputs, and technical support.

3.3.1 Types of Contract Farming

Contract farming can be classified into four main types: marketing contracts, production contracts, resource-providing contracts, and one-tier or two-tier contracts. Marketing contracts are standard among farmers producing perishable goods, such as fruits and vegetables, where the farmer retains autonomy over production while the buyer sets the terms for price, volume, and delivery (Ruml et al., 2022; Silva & Rankin, 2013). These contracts provide market security and offer opportunities for off-farm income. Production contracts, in contrast, involve buyers supplying inputs and making key production decisions in exchange for specified outputs, with farmers providing land and labour (Bellemare & Lim, 2018; Pramana & Rondhi, 2020). Resource-providing contracts focus on overcoming rural credit constraints by supplying inputs, loans, and technical support, which boost productivity and incomes (Debela et al., 2021; Ruml & Qaim, 2020). Lastly, one-tier and two-tier contracts differ in their delivery structures: in one-tier systems, firms contract directly with farmers, whereas in two-tier models, intermediaries or agents manage the relationship between firms and farmers (Susanty et al., 2021).

3.3.2 Models of Contract Farming

Contract farming takes several forms, each reflecting different organisational arrangements suited to specific crops, value chains, and institutional capacities (Anh et al., 2019; Eaton & Shepherd, 2001). The centralised model involves companies sourcing produce directly from numerous smallholders, assigning quotas, and overseeing production through field agents to ensure quality control, processing, and marketing (Action for Research, 2009; Will, 2013). This model is commonly applied to high-value crops such as tobacco, coffee, cotton, and poultry. The nucleus estate model combines a contractor-managed estate with support for surrounding smallholders, often sharing infrastructure like processing facilities and offering training and input provision (Abegunde, 2021; Konja & Abdulai, 2024). The multipartite model introduces collaboration among government bodies, private companies, and farmer organisations, with shared responsibilities for credit, extension services, and marketing (Abegunde, 2021). The informal model consists of loose, seasonal arrangements without input loans or formal agreements, typically used for perishable produce that requires minimal processing (Dhillon et al., 2006; Will, 2013). Lastly, the intermediary model places agents or brokers between farmers and processors; while suitable for low-value crops, it introduces risks such as diminished quality control and price distortion (Anh et al., 2019; Will, 2013).

3.3.3 Benefits of contract farming.

The benefits of contract farming are extensive and span multiple levels. For farmers, contract arrangements offer access to critical inputs, credit, technical assistance, and guaranteed markets, all of which help reduce production and market risks while improving income, skills, and value chain integration (Abegunde, 2021; Vink & Van Rooyen, 2009). Companies benefit through assured raw material supply, better control over quality and standards, reduced transaction costs, and more efficient supply chain management (Abegunde, 2021). At the macroeconomic level, contract farming promotes rural development, stimulates job creation, enables technology transfer, and drives agricultural commercialisation, making it a vital mechanism for linking smallholders to formal markets and supporting sustainable industrialisation (Abegunde, 2021; Vink & Van Rooyen, 2009).

3.3.4 Contract Farming in South Africa

In South Africa, contract farming is a critical strategy for integrating smallholder and emerging farmers into commercial agriculture, addressing historic racial inequities (Makhetha, 2024; Sihlobo & Qobo, 2021). Government programs, such as CASP and LRAD, facilitate access to inputs and markets, emphasising agrarian transformation and Black Economic Empowerment (Martiniello & Azambuja, 2019). Contract farming spans sugarcane, horticulture, forestry, grains, and, notably, the poultry sector, with vertically

integrated firms such as Illovo Sugar, Astral Foods, and Rainbow Chicken supplying inputs and technical support, while farmers provide labour and housing (Rusman et al., 2025; SAPA, 2022). Challenges include unequal power relations, limited negotiation capacity, insecure land tenure, and high costs for smallholders (Musa et al., 2018; Wilk et al., 2013). Enhancing knowledge sharing, policy clarity, and tailored finance are proposed to address these (Wilk et al., 2013).

3.3.5 Contract Farming in Zimbabwe

Zimbabwe's contract farming has been shaped by the Fast Track Land Reform Programme, which redistributed land but disrupted production systems (Chambati, 2011; Nkala, 2023). Contract farming remains essential for integrating new landholders, particularly in the production of export crops such as tobacco and cotton (Masuka, 2012; Parirenyatwa & Mago, 2014). Given limited formal credit access and rain-fed vulnerability, contract farming provides inputs credit and production support, reducing risks (Koloma & Kemeze, 2022; Ropafadzo et al., 2020; Tawodzera, 2014). The poultry sector is growing through contract arrangements with companies such as Irvine's Zimbabwe, supported by microfinance and NGOs. This model enables smallholders, particularly women, to generate income and improve food security despite economic challenges (Munyanyi, 2018; Zengeni, 2014). Constraints include feed cost volatility, disease outbreaks, delayed payments, and contract exploitation, indicating a need for improved regulatory frameworks and transparency (Zengeni, 2014).

3.4 Aggregator Schemes

Aggregator schemes involve the collective organisation of farmers and stakeholders to enhance market access, reduce production costs, and increase agricultural output (Abraham et al., 2022; Cooper et al., 2022). These models typically feature intermediaries, such as cooperatives, companies, or NGOs, that link smallholders to larger markets by offering bundled services, including input provision, credit access, technical support, and logistics (Jahroh & Meliala, 2021; Shepherd, 2018). Types of aggregation include spot market deals, collective marketing, and contracted sales (Wiggins & Compton, 2016). Benefits include economies of scale, reduced transaction costs, and enhanced bargaining power (Ochieng et al., 2017). In South Africa, aggregation schemes support rural transformation by integrating smallholders into value chains for horticulture and poultry, facilitated by partnerships with companies like Rainbow Chicken and policy support from CASP and AgriBEE (Materechera & Scholes, 2022; Ncube, 2024). Similarly, in Zimbabwe, aggregation has helped revive agriculture post-land reform by enabling market coordination in maize and poultry through firms like Irvine's and NGO support (Chigunhah et al., 2020; Phiri et al., 2023). Despite challenges such as high input costs and unequal power dynamics, aggregator models remain essential for promoting inclusive growth, rural development, and food system resilience in both countries (Tinarwo & Erasmus, 2025).

3.5 Producer Organisations

Producer organisations (POs) are farmer-led collectives that help smallholders access resources, markets, and services more effectively. They range from informal groups to formal cooperatives and unions, functioning to enhance bargaining power, reduce transaction costs, and facilitate economies of scale (Bijman & Iliopoulos, 2014). POs play a critical role in input supply, credit facilitation, quality control, training, and collective marketing (Abraham et al., 2022). By uniting farmers, these organisations improve access to technology, finance, and policy support, and can advocate for farmers interests. In South Africa and Zimbabwe, POs contribute to rural development by integrating farmers into structured value chains, enhancing food security, and supporting government-led development initiatives (Botha, 2021; Chigunhah et al., 2020). However, challenges such as weak governance, limited capital, and member commitment can hinder their performance. Strengthening institutional capacity and ensuring accountability are crucial to unlocking their full potential in transforming smallholder agriculture (Kushitor et al., 2022; Mamabolo et al., 2021).

4. Agricultural Value Chain Financing and Sustainable Industrialisation

Agricultural Value Chain Financing (AVCF) plays a pivotal role in promoting sustainable industrialisation by facilitating the flow of financial products and services to various actors within the agricultural value chain. These include loans, input supplies, extension services, and technical support all intended to reduce risk, enhance efficiency, and foster production. According to Osei et al. (2023), AVCF addresses structural challenges in agriculture by ensuring access to resources that enable stakeholders to engage effectively in production and distribution activities. By improving access to finance and enhancing technical capacity, AVCF boosts agricultural productivity, generates employment opportunities, reduces poverty, and improves community welfare. Moreover, it supports the competitiveness of agro-processing industries. It promotes exports through value addition, thereby building a resilient industrial base that aligns with several Sustainable Development Goals (SDGs), particularly SDGs 1, 2, 5, 8, 9, and 13.

4.1 Outgrower Schemes and Sustainable Industrialisation

Outgrower schemes integrate smallholder farmers into structured value chains, offering quality inputs, technical support, and guaranteed markets. These schemes promote inclusive agricultural participation and sustainable production Abramovich and Krause (2025), contributing to food security and economic growth in line with SDG 2 (Konja & Abdulai, 2024). Furthermore, they create both direct and indirect employment opportunities, thereby enhancing incomes and reducing poverty, which aligns with the objectives of SDG 1 and SDG 8 (Hall et al., 2017; Manda et al., 2020; Ruben, 2024). Additionally, these schemes improve livelihoods, as shown by increased household asset accumulation and better living standards (José Leonardo de Moraes Gonçalves et al., 2020; Matenga, 2017).

Outgrower schemes can enhance farmers' well-being by increasing agricultural productivity and promoting greater market involvement (Diedong et al., 2024). Outgrower schemes can provide smallholder farmers with access to international markets (Van Der Waal, 2010). For example, smallholder banana growers have successfully penetrated European markets via fair trade systems, gaining advantages such as consistent contract volumes and direct access to buyers (Van Der Waal, 2010). However, notable gender disparities exist. While women form a substantial part of the agricultural labour force, their access to land, finance, and decision-making remains limited (Benali, 2025; Quisumbing et al., 2021). Income generated through these schemes is often controlled by men, sidelining women's financial agency (Matenga, 2017). Despite global frameworks like the Beijing Declaration, gender equity in agriculture remains distant (Yila, 2025). In Zimbabwe, only 15% of women own land post-FTLRP Munemo et al. (2022), a challenge echoed across Sub-Saharan Africa (FAO, 2011; Statistics South Africa, 2022; World Economic Forum, 2022). Closing these gender gaps would significantly enhance agricultural productivity and economic growth, potentially raising GDP by 2.5% to 4% (FAO, 2011).

Producer organisations and cooperatives can help address gender disparities by facilitating women's access to resources, training, and networks (Abraham et al., 2022; Lecoutere, 2014). Empowering women in agriculture not only enhances household welfare but also contributes to national development and the achievement of SDG 5.

4.2 Contract Farming and Sustainable Industrialisation

Contract farming formalises agreements between producers and buyers, providing farmers with inputs, credit, and assured markets. Studies by Key and Runsten (1999), Silva and Rankin (2013), and Meemken and Bellemare (2020) highlight that contract farming increases labour demand, thereby expanding employment. It also supports improved household welfare and rural development (Ray et al., 2021; UNIDROIT et al., 2015). Farmers benefit from guaranteed prices, reduced market uncertainty, and improved access to technology and finance (Hoang, 2021). These cumulative effects enhance production, employment, and industrial resilience, aligning with Sustainable Development Goals (SDGs) 1, 8, and 9. However, the outcomes of contract farming are contested. While production contracts have a positive impact on income,

Soullier and Moustier (2018), marketing contracts may not. Some scholars argue that contract farming worsens income inequality and exploits labour, particularly among landless or female-headed households (Bellemare & Bloem, 2018; Meemken & Bellemare, 2020; Porter & Phillips-Howard, 1997). Moreover, some projects, particularly in Africa, have been criticised as veiled land grabs lacking community consultation (Action Aid, 2015). Gender inequality also persists, as women often lack access to land rights and contracts (Mazwi et al., 2018). Without targeted interventions, contract farming may reinforce rather than resolve structural inequalities (Quisumbing et al., 2021). On a positive note, contract farming promotes environmentally sustainable practices. Farmers are encouraged to adopt technologies such as organic fertilisers and weed management strategies (Hoang, 2021; Wu et al., 2018). These interventions not only support climate resilience (SDG 13) but also enhance quality standards and production levels through technical training and insurance (Action for Research, 2009; UNIDROIT et al., 2015). Nevertheless, indirect contract models may suffer from poor monitoring, which can reduce product quality and efficiency (Action for Research, 2009). Thus, while contract farming has clear industrialisation benefits, it requires regulation to ensure equity and sustainability.

4.3 Aggregator Models and Sustainable Industrialisation

Aggregator models, including cooperatives and producer organisations, link smallholder farmers to markets and resources, thereby fostering sustainable industrialisation. These models enhance income through collective sales, efficient distribution, and reduced marketing costs (Jahroh & Meliala, 2021). Farmers gain access to better market information, protecting them from price exploitation and enabling them to make informed decisions. Aggregator systems also provide inputs, such as fertilisers and equipment, which improve productivity and reduce production costs (Fischer & Qaim, 2012; Jahroh & Meliala, 2021). Producer organisations foster innovation and cost efficiency by encouraging collaboration and knowledge sharing (Candemir et al., 2021). They facilitate access to credit, extension services, and reliable input supplies, which enhances productivity and GDP growth (Lin et al., 2022; Sinyolo & Mudhara, 2018). Furthermore, members of cooperatives are encouraged to adopt sustainable farming practices, including the use of green technologies and integrated pest management (Yu et al., 2021). These practices contribute to environmental sustainability and the achievement of Sustainable Development Goal 13. Despite these strengths, concerns exist that cooperative members have demonstrated weaker environmental practices than non-members, contradicting the assumption that cooperatives promote greater environmental sustainability (Mojo et al., 2015). Aggregator models can support gender empowerment by improving women's access to resources and decision-making Lecoutere (2014), with benefits that extend to maternal health, nutrition, and poverty reduction (Debela et al., 2021; Malapit et al., 2015). As such, aggregator models advance several Sustainable Development Goals (SDGs), including SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 5 (Gender Equality), SDG 8 (Decent Work), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 13 (Climate Action).

5. Implications for Theory, Policy, and Practice

5.1 Theoretical Implications

The findings expand agrarian and development theories by demonstrating how diversified agricultural value chain finance (AVCF) models, such as contract farming, outgrower schemes, and aggregator models, function as integrated socio-economic systems that bridge formal and informal markets. These models challenge traditional assumptions about smallholder exclusion by highlighting the complex interactions among actors and the role of institutional support in mitigating risks, such as side-selling and contract default. Furthermore, gender disparities in land access and contract participation emphasise the need for intersectional frameworks that incorporate socio-cultural dimensions into value chain analysis. This calls for a multidisciplinary theoretical approach that integrates agronomy, economics, gender studies, and institutional governance to understand rural transformation better.

5.2 Policy Implications

Policymakers should recognise the critical role of AVCF models in promoting inclusive and sustainable agricultural industrialisation, aligned with multiple Sustainable Development Goals (SDGs), notably poverty alleviation, food security, gender equality, and climate action. To enhance effectiveness, policies must:
Strengthen institutional frameworks that support fair contract enforcement, transparent pricing, and equitable benefit-sharing to reduce exploitation and power asymmetries.
Promote land reform and secure tenure, particularly addressing women's limited ownership rights, as land access remains a fundamental barrier to equitable participation.
Facilitate access to affordable credit and subsidised inputs through tailored financial products, including support for producer organisations and cooperatives.
Encourage adoption of sustainable agricultural practices within contract and aggregator models to balance productivity gains with environmental conservation.
Support capacity building and technical training for smallholders, with special emphasis on empowering marginalised groups, including women and youth.
Foster partnerships among public agencies, private sector actors, NGOs, and farmer organisations to scale innovations and improve market linkages.

5.3 Practical Implications

Agribusinesses and value chain actors should leverage the advantages of integrated financing models to secure raw materials, enhance product quality, and achieve cost efficiencies, while also promoting rural livelihoods. Effective risk management strategies, including contract design that minimises side-selling and payment delays, are vital for sustaining trust and participation. Producer organisations and cooperatives must strengthen governance, transparency, and member engagement to enhance service delivery and negotiation capacity. Development practitioners should prioritise gender-sensitive interventions that improve women's access to resources, training, and decision-making roles to unlock broader socio-economic benefits. Ultimately, continuous monitoring and adaptive management can effectively address emerging challenges, such as market volatility, climate risks, and fluctuations in input costs, to ensure resilience and sustainability.

6. CONCLUSION

This paper has examined Agricultural Value Chain Finance (AVCF) models, namely contract farming, outgrower schemes, and aggregator arrangements, as mechanisms for integrating smallholder farmers into commercial agricultural systems in Southern Africa. The synthesis of literature reveals that these models offer critical benefits, including improved access to credit, inputs, technical assistance, and guaranteed markets. In turn, they contribute to rural employment, food security, and sustainable industrialisation. However, challenges persist, such as side-selling, unequal bargaining power, limited institutional support, and entrenched gender disparities in land ownership and contract access.

The comparative analysis between South Africa and Zimbabwe illustrates both shared and divergent trajectories in AVCF implementation. South Africa has leveraged contract and aggregator models to advance post-apartheid agrarian reform, supported by strong private sector participation and targeted policy instruments like CASP and AgriBEE. Conversely, Zimbabwe has relied more heavily on outgrower schemes to rebuild agricultural value chains following land redistribution, with mixed outcomes shaped by macroeconomic instability and limited regulatory oversight. While both countries demonstrate the potential of AVCF models to support inclusive rural development, their success is highly contingent upon context-specific institutional frameworks, secure land tenure, and the capacity of farmer organisations.

Future research should empirically assess the long-term developmental outcomes of these financing models. There is also a pressing need for gender-sensitive analysis to evaluate how power dynamics and ownership patterns influence participation and benefit distribution. Furthermore, comparative longitudinal studies across regions and commodities could yield deeper insights into which institutional arrangements and

governance models produce the most inclusive and sustainable results. By addressing these gaps, researchers can better inform policy interventions that harness the full potential of AVCF for equitable and resilient agricultural transformation in Southern Africa.

Disclosure statement

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REFERENCES

1. Abegunde, B. O. (2021). Effectiveness of outgrower scheme among cassava farmers in southwestern nigeria University Of Ibadan]. http://hdl.handle.net/123456789/1422
2. Abraham, M., Chiu, L. V., Joshi, E., Ilahi, M. A., & Pingali, P. (2022). Aggregation models and small farm commercialization–A scoping review of the global literature. Food Policy, 110, 1-27. https://doi.org/10.1016/j.foodpol.2022.102299
3. Abramovich, J., & Krause, S. (2025). Outgrower schemes: A Pathway To Sustainable Agriculture. NextBillion. https://nextbillion.net/outgrower-schemes/
4. Action Aid. (2015). Contract farming and outgrower schemes: Appropriate Development Models to Tackle Poverty and Hunger.
5. Action for Research. (2009). Facilitating the development of outgrower operations: A Manual. https://www.fsnnetwork.org/sites/default/files/facilitating_the_development_of_outgrowing_operations.pdf
6. Adesina, A. A. (2010). Conditioning trends shaping the agricultural and rural landscape in Africa [Article]. Agricultural Economics, 41(SUPPL. 1), 73-82. https://doi.org/10.1111/j.1574-0862.2010.00490.x
7. Akuriba, G. A., & Tangonyire, D. F. (2020). Effects of nucleus-farmer outgrower schemes on profitability among smallholder farmers: Empirical evidence from Northern Ghana. Cogent Food & Agriculture, 6(1), 1823592.
8. Anh, N. H., Bokelmann, W., Thuan, N. T., Nga, D. T., & Van Minh, N. (2019). Smallholders' Preferences for Different Contract Farming Models: Empirical Evidence from Sustainable Certified Coffee Production in Vietnam. Sustanability, 11(3799), 1 -26. https://core.ac.uk/download/pdf/227723631.pdf
9. Asravor, J., Tsiboe, F., Adetoyinbo, A., & Ankamah, J. (2025). Charting the Path to Increased Oil Palm Output in Ghana Beyond Area Expansion: Technology or Managerial Capacity—Which Leads the Way? Agribusiness.
10. Ba, M. N. (2022). Harnessing the Agriculture Value Chain for Development. In Sustainable Development in Post-Pandemic Africa: Effective Strategies for Resource Mobilization (pp. 218-238). https://doi.org/10.4324/9781003185062-13
11. Bellemare, M. F., & Bloem, J. R. (2018). Does contract farming improve welfare? A review. World Development, 112, 259-271. https://doi.org/10.1016/j.worlddev.2018.08.018
12. Bellemare, M. F., & Lim, S. (2018). In All Shapes and Colors. Applied Economic Perspectives and Policy, 40(3), 379-401. https://www.jstor.org/stable/10.2307/48546208
13. Benali, F. (2025). Gender Equality in Agriculture: A Path to Sustainability. https://cropologies.com/articles/gender-equality-in-agriculture-sustainability/
14. Bezabeh, A., Beyene, F., Haji, J., & Lemma, T. (2020). Impact of contract farming on income of smallholder malt barley farmers in Arsi and West Arsi zones of Oromia region, Ethiopia. Cogent Food & Agriculture, 6(1), 1-17. https://doi.org/10.1080/23311932.2020.1834662
15. Bijman, J., & Iliopoulos, C. (2014). Farmers'cooperatives in the EU: Policies, Strategies, and Organization. Annals of Public and Cooperative Economics, 85(4), 497-508. https://www.agreri.gr/sites/default/files/Bijman%20and%20Iliopoulos_apce12048.pdf
16. Botha, I. (2021). The commercial mainstream news media's portrayal of the South African farmer in the 21st century: An exploratory study Stellenbosch: Stellenbosch University].
17. Brüntrup, M., Schwarz, F., Absmayr, T., Dylla, J., Eckhard, F., Remke, K., & Sternisko, K. (2018). Nucleus-outgrower schemes as an alternative to traditional smallholder agriculture in Tanzania: strengths, weaknesses, and policy requirements. Food Security, 10, 807-826.
18. Candemir, A., Duvaleix, S., & Latruffe, L. (2021). Agricultural cooperatives and farm sustainability–A literature review. Journal of Economic Surveys, 35(4), 1118-1144. https://onlinelibrary.wiley.com/doi/full/10.1111/joes.12417
19. Chambati, W. (2011). Restructuring of Agrarian Labour Relations after Fast-Track Land Reform in Zimbabwe [Article]. Journal of Peasant Studies, 38(5), 1047-1068. https://doi.org/10.1080/03066150.2011.632088
20. Chigunhah, B. R., Svotwa, E., Mabvure, T. J., Munyoro, G., & Chikazhe, L. (2020). The status of agricultural financing by commercial banks in Zimbabwe. APSTRACT: Applied Studies in Agribusiness and Commerce, 14, 45-56.
21. Chigwada, J., Mazunga, F., Nyamhere, C., Mazheke, V., & Taruvinga, N. (2022). Remote poultry management system for small to medium scale producers using IoT. Scientific African, 18, e01398.
22. Chimonyo, V. G., Sibanda, T., Matangi, D., & Gadzirayi, C. (2023). Co-identifying alternative technological innovations for prioritized value chains for the Mbire and Murehwe districts of Zimbabwe.

23. Chingosho, R., Dare, C., & van Walbeek, C. (2021). Tobacco farming and current debt status among smallholder farmers in Manicaland province in Zimbabwe. Tobacco Control, 30, 610-615. https://tobaccocontrol.bmj.com/content/tobaccocontrol/30/6/610.full.pdf
24. Christian, M., Obi, A., Zantsi, S., Mdoda, L., & Jiba, P. (2024). The role of cooperatives in improving smallholder participation in agri-food value chains: A case study of one local municipality in Eastern Cape, South Africa. Sustainability, 16(6), 2241.
25. Cooper, G. S., Rich, K. M., Shankar, B., & Rana, V. (2022). The challenges of aligning aggregation schemes with equitable fruit and vegetable delivery: lessons from Bihar, India. Journal of Agribusiness in Developing and Emerging Economies, 12(2), 223-246. https://doi.org/10.1108/JADEE-11-2020-0275
26. Debela, B. L., Gehrke, E., & Qaim, M. (2021). Links between maternal employment and child nutrition in rural Tanzania. American Journal of Agricultural Economics, 103(3), 812-830.
27. Debela, B. L., Ruml, A., & Qaim, M. (2022). Effects of contract farming on diets and nutrition in Ghana. Applied Economic Perspectives and Policy, 44(2), 911-929. https://onlinelibrary.wiley.com/doi/epdf/10.1002/aepp.13204
28. Dhillon, S. S., Singh, N., & Dhillon, S. S. (2006). Contract farming in Punjab: An analysis of problems, challenges and opportunities. Pakistan Economic and Social Review, 44(1), 19-38. https://www.jstor.org/stable/25825282
29. Diedong, J., Anang, B. T., & Danso-Abbeam, G. (2024). Welfare effect of rice outgrower scheme participation: empirical evidence from northern Ghana [Article]. World Development Perspectives, 36, Article 100640. https://doi.org/10.1016/j.wdp.2024.100640
30. Dieterle, C. (2022). Governing land investments: global norms, local land tenure regimes, and domestic contingencies in Uganda and Sierra Leone London School of Economics and Political Science].
31. Dürr, J. (2017). Agricultural Growth Linkages in Guatemala: New Insights from a Value Chain Approach [Article]. Journal of Development Studies, 53(8), 1223-1237. https://doi.org/10.1080/00220388.2016.1214721
32. Eaton, C., & Shepherd, A. (2001). Contract farming: partnerships for growth. Food & Agriculture Org. https://www.fao.org/4/Y0937E/Y0937E00.htm
33. FAO. (2011). The state of food and agriculture 2010 -2011: Women in Agriculture: Closing the Gender Gap For Development. https://www.fao.org/4/i2050e/i2050e00.htm
34. Farnworth, C. R., & Gallina, A. (2017). Integrating gender and nutrition within agricultural extension services: Involving Women in Outgrower Schemes. 1-29. https://ingenaes.illinois.edu/wp-content/uploads/ING-TN-2017_09-Gender-Guidance-for-Outgrower-Projects-Farnworth-Gallina.pdf
35. Fischer, E., & Qaim, M. (2012). Linking smallholders to markets: determinants and impacts of farmer collective action in Kenya. World development, 40(6), 1255-1268. https://doi.org/10.1016/j.worlddev.2011.11.018
36. Greyling, J. C., Vink, N., & Mabaya, E. (2015). South Africa's agricultural sector twenty years after democracy (1994 to 2013). Professional Agricultural Workers Journal, 3(1), 10.
37. Guillaume, S., & Paule, M. (2018). Impacts of contract farming in domestic grain chains on farmer income and food insecurity: Contrasted Evidence from Senegal. Food Policy, Summer, 1-50.
38. Hall, R., Scoones, I., & Tsikata, D. (2017). Plantations, outgrowers and commercial farming in Africa: Agricultural Commercialisation And Implications For Agrarian Change. The Journal of Peasant Studies, 44(3), 515-537.
39. Hoang, V. (2021). Impact of contract farming on farmers' income in the food value chain: A theoretical analysis and empirical study in Vietnam. Agriculture, 11(8), 1-16. https://doi.org/10.3390/agriculture11080797
40. Jahroh, S., & Meliala, J. S. (2021). Impacts of aggregator business on farmers' income. Jurnal Manajemen & Agribisnis, 18(2), 168-168. https://garuda.kemdikbud.go.id/documents/detail/2159046
41. Joffre, O. M., De Vries, J. R., Klerkx, L., & Poortvliet, P. M. (2020). Why are cluster farmers adopting more aquaculture technologies and practices? The role of trust and interaction within shrimp farmers' networks in the Mekong Delta, Vietnam. Aquaculture, 523, 735181.
42. José Leonardo de Moraes Gonçalves, Alexandre de Vicente Ferraz, José Henrique Tertulino Rocha, Mateus Peressin, & Alvares, C. A. (2020). Forest outgrower schemes in small and medium-sized farmers in Brazil. Forest Ecology and Management, 456, 1-7. https://doi.org/10.1016/j.foreco.2019.117654
43. Kafle, K., Songsermsawas, T., & Winters, P. (2022). Agricultural value chain development in Nepal: Understanding mechanisms for poverty reduction [Article]. Agricultural Economics (United Kingdom), 53(3), 356-373. https://doi.org/10.1111/agec.12696
44. Kassouri, Y., & Kacou, K. Y. T. (2022). Does the structure of credit markets affect agricultural development in West African countries? [Article]. Economic Analysis and Policy, 73, 588-601. https://doi.org/10.1016/j.eap.2021.12.015
45. Key, N., & Runsten, D. (1999). Contract farming, smallholders, and rural development in Latin America: the organization of agroprocessing firms and the scale of outgrower production. World development, 27(2), 381-401. https://doi.org/10.1016/S0305-750X(98)00144-2
46. Khan, M. F., Nakano, Y., & Kurosaki, T. (2019). Impact of contract farming on land productivity and income of maize and potato growers in Pakistan. Food Policy, 85, 28-39. https://doi.org/10.1016/j.foodpol.2019.04.004

47. Koloma, Y., & Kemeze, F. H. (2022). COVID-19 and perceived effects on agricultural financing in Africa: Evidence and policy implications [Article]. African Development Review, 34(S1), S63-S79. https://doi.org/10.1111/1467-8268.12659
48. Konja, D. T., & Abdulai, A. (2024). Do outgrower schemes enhance technology adoption and productivity? Evidence from maize farmers in Northern Ghana. Agribusiness, 1-21. https://doi.org/10.1002/agr.21967
49. Kushitor, S. B., Drimie, S., Davids, R., Delport, C., Hawkes, C., Mabhaudhi, T., Ngidi, M., Slotow, R., & Pereira, L. M. (2022). The complex challenge of governing food systems: The case of South African food policy. Food security, 14(4), 883-896.
50. Kyamagero, S., Hintz, K. S., Turyahabwe, N., & Kapp, G. (2024). Factors influencing smallholder participation in commercial tree growing outgrower schemes: The case of Namwasa outgrower scheme in Uganda. Trees, forests and people, 18, 100718.
51. Lecoutere, E. (2014). A gendered approach to cooperative farming in Uganda: The Impact on Empowerment and Gender Roles. https://acesse.dev/rRFL4
52. Leite, J. G. D. B., Langa, F. M., von Maltitz, G., Leal, M. R. L. V., & Cortez, L. A. B. (2020). Sugarcane outgrower schemes model: Friend or foe? A question for smallholder farmers in Mozambique. World Development Perspectives, 19, 100232.
53. Lin, B., Wang, X., Jin, S., Yang, W., & Li, H. (2022). Impacts of cooperative membership on rice productivity: Evidence from China. World Development, 150, 1-13. https://doi.org/10.1016/j.worlddev.2021.105669
54. Machio, P. M., & Meemken, E.-M. (2023). Women's Participation in Contract Farming. Journal of Development Studies, 59(6), 894-910. https://research.ebsco.com/linkprocessor/plink?id=4714288d-6c30-3f38-9d11-53e5d97a5516
55. Mafigu, T., Charambira, T., & Hodzi, P. (2024). Opportunities and Constraints for Urban Broiler Production in Harare, Zimbabwe.
56. Makhetha, E. (2024). Rural livelihoods and land reform in South Africa: An intersectional perspective on women's lived experiences. Social Sciences & Humanities Open, 10, 101037. https://doi.org/https://doi.org/10.1016/j.ssaho.2024.101037
57. Malapit, H. J. L., Kadiyala, S., Quisumbing, A. R., Cunningham, K., & Tyagi, P. (2015). Women's empowerment mitigates the negative effects of low production diversity on maternal and child nutrition in Nepal. The journal of development studies, 51(8), 1097-1123.
58. Mamabolo, M., Sebola, M., & Tsheola, J. (2021). The economics of communal smallholder farming within south africa's historical agricultural structure. Journal of Global Business & Technology, 17(2).
59. Manda, S., Tallontire, A., & Dougill, A. J. (2020). Outgrower schemes and sugar value-chains in Zambia: Rethinking determinants of rural inclusion and exclusion. World Development, 129, 104877.
60. Mango, L., & Kugedera, A. T. (2022). Pitfalls and prospects of contract farming to smallholder tobacco farmers in Shamva District, Zimbabwe. International Journal of Agriculture Environment and Food Sciences, 6(1), 189-196. https://dergipark.org.tr/en/download/article-file/2175736
61. Marks, D. (2022). The Contract Farming Promotion and Development Act (2017) of Thailand: Origins and impacts to date. MRLG Thematic Study Series, 12.
62. Marokane, R. (2024). Empowering small-scale producers.
63. Martiniello, G., & Azambuja, R. (2019). Contracting Sugarcane Farming in Global Agricultural Value Chains in Eastern Africa: Debates, Dynamics, and Struggles [Article]. Agrarian South, 8(1-2), 208-231. https://doi.org/10.1177/2277976019851955
64. Masuka, A., Rukasha, T., & Tatsvarei, S. (2025). Factors affecting access to agricultural credit and the size of agricultural credit for smallholder farmers in Zimbabwe. African Journal of Commercial Studies, 6(3), 50-61.
65. Masuka, G. (2012). Contests and struggle: Cotton farmers and COTTCO in Rushinga district, Zimbabwe, 1999–2006. Geoforum, 43(3), 573-584. https://doi.org/https://doi.org/10.1016/j.geoforum.2011.11.001
66. Matenga, C. R. (2017). Outgrowers and livelihoods: The case of Magobbo smallholder block farming in Mazabuka District in Zambia. Journal of Southern African Studies, 43(3), 551-566. http://dx.doi.org/10.1080/03057070.2016.1211402
67. Materechera, F., & Scholes, M. C. (2022). Understanding the drivers of production in south African farming systems: a case study of the Vhembe District, Limpopo South Africa. Frontiers in Sustainable Food Systems, 6, 722344.
68. Mazwi, F. (2020). Sugar production dynamics in Zimbabwe: An Analysis Of Contract Farming At Hippo Valley. Review of African Political Economy, 47(166), 568-584. https://www.tandfonline.com/doi/abs/10.1080/03056244.2020.1832022
69. Mazwi, F., Chambati, W., & Mudimu, G. T. (2020). Tobacco contract farming in Zimbabwe: Power Dynamics, Accumulation Trajectories, Land Use Patterns And Livelihoods. Journal of Contemporary African Studies, 1-17. https://doi.org/10.1080/02589001.2020.1746752
70. Mazwi, F., Chambati, W., & Mutodi, K. (2018). Contract farming arrangement and poor resourced farmers in Zimbabwe. Sam Moyo African Institute for agrarian studies (SMAIAS), 1-11. https://cfuzim.org/wp-content/uploads/2018/06/contracttobacco.pdf
71. Mdoda, L., & Christian, M. (2022). Smallholder vegetable farmers' commercialization to enhance rural livelihoods in the Eastern Cape province, South Africa. African Journal of Science, Technology, Innovation and Development, 14(6), 1667-1676. https://doi.org/10.1080/20421338.2021.1979172
72. Meemken, E.-M., & Bellemare, M. F. (2020). Smallholder farmers and contract farming in developing countries. Proceedings of the National Academy of Sciences, 117(1), 259-264. https://www.pnas.org/doi/epdf/10.1073/pnas.1909501116

73. Meyfroidt, P., De Bremond, A., Ryan, C. M., Archer, E., Aspinall, R., Chhabra, A., Camara, G., Corbera, E., DeFries, R., & Díaz, S. (2022). Ten facts about land systems for sustainability. Proceedings of the National Academy of Sciences, 119(7), e2109217118.
74. Mishra, A. K., Kumar, A., Joshi, P. K., & D'souza, A. (2016). Impact of contracts in high yielding varieties seed production on profits and yield: The case of Nepal. Food Policy, 62, 110-121. https://doi.org/10.1016/j.foodpol.2016.05.005
75. Mojo, D., Fischer, C., & Degefa, T. (2015). Social and environmental impacts of agricultural cooperatives: Evidence from Ethiopia [Article]. International Journal of Sustainable Development and World Ecology, 22(5), 388-400. https://doi.org/10.1080/13504509.2015.1052860
76. Mukucha, P., & Chari, F. (2024). An assessment of supplier development in the Zimbabwean cotton industry. Cogent Business & Management, 11(1), 1-13. Retrieved 2024/12/31, from https://doi.org/10.1080/23311975.2024.2350791
77. Munemo, P., Manzvera, J., & Agbelie, I. (2022). Women and Land Ownership in Zimbabwe: A Review of the Land Reforms with Particular Focus on the Fast Track Land Reform Programme. Feminist Africa, 3(2), 36-60.
78. Munyanyi, F. N. (2018). Backyard poultry farming as a survival strategy for women in urban areas: A case study of Norton town in Mashonaland West Province, Zimbabwe.
79. Musa, K., Van Niekerk, P., & Retief, C. P. (2018). Challenges of contract farming among small-scale commercial vegetable farmers in Eastern Cape South Africa. Journal of Agricultural Extension, 22(3), 195-206. https://dx.doi.org/10.4314/jae.v22i3.19
80. Ncube, D. (2020). The importance of contract farming to small-scale farmers in Africa and the implications for policy: A review scenario. The Open Agriculture Journal, 14(1).
81. Ncube, P. (2024). Power and coordination: Governance in the poultry regional value chain in Southern Africa. Development Southern Africa, 1-17.
82. Ndhlovu, E. (2025). Partnerships, Agricultural Development, and Prospects for Industrialisation in Rural Africa. In E. Ndhlovu (Ed.), Agriculture, Autonomous Development, and Prospects for Industrialization in Africa (pp. 149-169). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-84992-3_9
83. Ndimbo, G. K., & Haulle, E. (2024). Large-scale agricultural investments and contract farming in Tanzania: A systematic review on the livelihoods, food security and ecological implications [Review]. Journal of Agriculture and Food Research, 18, Article 101514. https://doi.org/10.1016/j.jafr.2024.101514
84. Ndlela, S., & Worth, S. (2021). Creating self-reliance and sustainable livelihoods amongst small-scale sugarcane farmers. The Journal of Agricultural Education and Extension, 27(3), 325-339.
85. Nhan, T. Q., Gillette, R., Yutaka, T., & Can, N. D. (2020). Impact of outgrower scheme on yield, output price, and income. Hitotsubashi Journal of Economics, 61(1), 1-19. https://www.jstor.org/stable/10.2307/26918272
86. Nkala, P. (2023). Exploring Innovative and Sustainable Financing of Agriculture in Zimbabwe's Second Republic. In Advances in African Economic, Social and Political Development (pp. 239-262). https://doi.org/10.1007/978-3-031-30129-2_13
87. Nuhu, A. S., Liverpool-Tasie, L. S. O., Awokuse, T., & Kabwe, S. (2021). Do benefits of expanded midstream activities in crop value chains accrue to smallholder farmers? Evidence from Zambia [Article]. World Development, 143, Article 105469. https://doi.org/10.1016/j.worlddev.2021.105469
88. Ochieng, D. O., Veettil, P. C., & Qaim, M. (2017). Farmers' preferences for supermarket contracts in Kenya. Food Policy, 68, 100-111. Retrieved 2017/04/01/, from https://www.sciencedirect.com/science/article/pii/S0306919216302780
89. Olounlade, O. A., Li, G.-C., Kokoye, S. E. H., Dossouhoui, F. V., Akpa, K. A. A., Anshiso, D., & Biaou, G. (2020). Impact of participation in contract farming on smallholder farmers' income and food security in rural Benin: PSM and LATE parameter combined. Sustainability, 12(3), 1 -19. https://www.mdpi.com/2071-1050/12/3/901
90. Osei, T. A., Donkoh, S. A., Ansah, I. G. K., Awuni, J. A., & Cobbinah, M. T. (2023). Agricultural value chain participation and farmers' access to credit in northern Ghana. Agricultural Finance Review, 83(4/5), 800-820. https://doi.org/10.1108/AFR-01-2023-0007
91. Pangapanga-Phiri, I., Mungatana, E., & Mhondoro, G. (2024). Does contract farming arrangement improve smallholder tobacco productivity? Evidence from Zimbabwe. Heliyon, 10(1).
92. Parirenyatwa, K. T., & Mago, S. (2014). Evolution and development of contract farming in Zimbabwe: A reflection for agribusiness [Article]. Mediterranean Journal of Social Sciences, 5(20), 237-244. https://doi.org/10.5901/mjss.2014.v5n20p237
93. Peskett, L., Metzger, M. J., & Blackstock, K. (2023). Regional scale integrated land use planning to meet multiple objectives: Good in theory but challenging in practice. Environmental Science & Policy, 147, 292-304.
94. Phiri, P. T., Ruzhani, F., Madzokere, F., & Madududu, P. (2023). Factors affecting the profitability of smallholder broiler production in Mutare district, Manicaland Province, Zimbabwe: A quantile regression approach. Cogent Economics & Finance, 11(2), 2242660.