



ENTERPRISE ZAMBIA CHALLENGE FUND (EZCF)

LEARNING PAPER ENHANCING MARKET ACCESS FOR SMALLHOLDER FARMERS

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*Unlocking green and inclusive growth in
agribusiness, agroforestry and aquaculture*

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1. INTRODUCTION

The challenge

Smallholder farmers (SHFs) form the backbone of Zambia's agricultural economy, playing a central role in national food production and rural livelihoods. Yet, their participation in structured value chains and access to formal markets can be limited. Their scale of production makes it difficult to meet the volume and consistency requirements demanded by commercial buyers. Even when smallholders produce a marketable surplus, they typically lack the capacity to comply with buyer expectations around quality standards and delivery. In addition, low productivity, weak market linkages, insufficient infrastructure, and limited access to quality inputs restrict their ability to engage in long-term supply arrangements and capitalise on commercial opportunities. Due to these barriers, SHFs are typically dependent on informal markets, where prices are low, risks are high, and growth opportunities are limited.

Impact of EZCF Interventions

In response to these challenges, enhancing market access for smallholder farmers has been a core focus of the ENTERPRISE Zambia Challenge Fund (EZCF). Recognising the multifaceted nature of these barriers, the Fund adopts a holistic approach, targeting both immediate constraints to market access as well as the underlying production-level issues that limit farmers' ability to engage competitively. This approach is anchored in three core areas: enhancing access to quality inputs, affordable finance, and reliable output markets - each serving as both a focus of intervention and a key metric for assessing impact. ***These interventions have had a significant impact, far exceeding the original targets.*** As of the End of Project Evaluation, 284,117 smallholder farmers (159,434 male and 124,683 female) had accessed markets for finance, inputs, and outputs as a direct result of the project, exceeding the target of 135,000.

Purpose of the Learning Paper

Drawing on the experiences of SHFs in EZCF-supported projects and complemented by relevant literature, this Learning Paper aims to (i) identify and discuss the key barriers hindering SHFs from accessing formal markets; (ii) highlight successful strategies for improving market access; (iii) showcase case studies of EZCF programs that have effectively addressed these barriers; and (iv) identify successes and gaps to inform future areas for intervention

Methodology

This report draws on a combination of internal assessments and independent evaluations to analyze the successes and challenges of EZCF-supported projects in improving market access for SHFs, including:

- **End of Project Evaluation Report** conducted by EZCF over six months (August 2024 to January 2025), provides an overall assessment of the entire program duration and all related activities.
- **Endline BIPAT**, conducted by EZCF, is a collaborative effort to understand the project's impact and changes to each company since the grant was awarded.
- **Qualitative Impact Assessments (QuIP)**, conducted by a team of external researchers, provides independent evidence documenting the impact of the select projects through narrative causal statements collected directly from SHF beneficiaries.

A targeted literature review was also conducted to contextualise project findings and identify broader trends, barriers, and opportunities affecting smallholder market access.

2. KEY BARRIERS TO MARKET ACCESS

To better understand the market access challenges facing smallholder farmers, it is useful to distinguish between (i) **direct barriers** related to meeting market requirements that immediately restrict entry into formal markets and (ii) **broader constraints** to effective participation that limit competitiveness and reduce the potential benefits of market engagement. While not a rigid classification (many barriers overlap and reinforce one another) this distinction helps clarify how different barriers impact market access and participation.

Importantly, **access to finance is a cross-cutting constraint** that influences every stage of a smallholder's path to market, shaping their ability to purchase inputs, comply with standards, invest in technology, and scale up production to meet market demands. Given its complexity and critical role, *access to finance is explored more comprehensively in dedicated learning papers.*

2.1. DIRECT BARRIERS TO MARKET ACCESS – MEETING ENTRY REQUIREMENTS

Direct barriers to market access refer to the immediate requirements that farmers must meet to enter formal or structured markets. These include compliance with both mandatory standards and general industry requirements related to product quality, as well as the ability to supply consistently at the required volume and frequency. Without meeting these basic entry conditions, farmers are effectively excluded from participating in formal value chains, making it a fundamental prerequisite for market entry.

Compliance with standards

Meeting market standards presents a significant hurdle for smallholder farmers in Zambia, impacting their ability to access formal domestic and export markets. These challenges relate not only to mandatory requirements - such as Sanitary and Phytosanitary (SPS) regulations - but also to voluntary and industry standards, including certifications like GlobalGAP and product specifications set by retailers and processors (Akiri et al, 2024). Without support to understand and meet these standards, smallholders often struggle to gain access to regulated, high-value markets. A review of the available literature identified several factors as barriers to compliance with production standards, with key issues being **limited knowledge or technical skills**, **low awareness** of the standards, and the **high cost** of compliance.

EZCF insights: Compliance was recognized as a challenge for several EZCF-supported projects, particularly due to delays in certification approvals, inconsistent policies, and weak legal frameworks that hinder effective enforcement of compliance with standards.

Slow approval processes from institutions like the Seed Control and Certification Institute (SCCI) and the Zambia Bureau of Standards (ZABS) held up product rollouts, while fluctuating export policies disrupted agribusiness activities. Additionally, conflicting mandates among government agencies created uncertainty and compliance difficulties.

Weak penalties for offenders were also highlighted as a major challenge, leading to calls for stronger legal frameworks. As one participant stated, *"We hope government interventions, such as reforming laws against counterfeit seeds, will complement this programme. Offenders currently face weak penalties, which haven't been strong enough to deter them."*

Meeting volume and consistency requirements

The fragmented nature of smallholder production in Zambia, coupled with insufficient coordination mechanisms, acts as a major barrier preventing SHFs from capitalizing on commercial opportunities. Customers in formal markets, such as processors, retailers, and exporters, demand consistent and large volumes of produce. Individual SHFs typically produce quantities that are too small to meet these demands, making it difficult for them to secure contracts or participate in these markets directly (Abraham et al, 2022). Moreover, the absence of well-functioning aggregation systems prevents these farmers from pooling their produce to achieve the necessary volumes for formal markets. This lack of collective action also limits their bargaining power and increases transaction costs for potential buyers.

2.2. BARRIERS TO EFFECTIVE PARTICIPATION

Barriers to effective participation refer to broader structural and operational constraints that limit smallholder farmers' ability to compete in formal markets and benefit meaningfully from market access. These include a range of challenges including low productivity, high agricultural input costs, inadequate infrastructure, and weak market linkages.

Low productivity

Low productivity significantly compounds existing production constraints, limiting SHFs from scaling operations. For example, in Zambia's soybean sector, SHFs achieve average yields of about 1 tonne per hectare - well below the 2.8 tonnes per hectare recorded by large commercial farms, and also lower than yields achieved by smallholders in regional peers such as South Africa, where the average is approximately 1.7 tonnes per hectare (FAO, 2024). While boosting productivity is critical for smallholder farmers to compete effectively and fully benefit from formal market access, these efforts are continually undermined by a range of persistent challenges, including:

Insufficient extension services (Teschemacher et al, 2023): With an extension worker-to-farmer ratio of approximately 1:1,000, Zambia's extension system is severely overstretched, limiting its ability to deliver timely and effective support to smallholder farmers. Beyond the shortage of personnel, extension workers often struggle to engage farmers in meaningful learning processes that are critical for the adoption of improved agricultural practices.

Vulnerability to climate change and shocks (Teschemacher et al, 2023): An estimated 75% of smallholder farmers in Zambia are vulnerable to climate shocks, largely due to the sector's heavy reliance on rain-fed agriculture. Irregular rainfall patterns and droughts increasingly disrupt planting and harvesting cycles, reduce yields, and threaten food security and incomes. The limited use of climate-resilient practices and technologies further exacerbates this vulnerability, leaving smallholders with few options to adapt to changing climatic conditions or recover from weather-related losses

EZCF insights: The impact of adverse weather conditions on crop yields was identified as a major barrier by SHFs involved in the Good Nature Agro outgrowers program. In a recent QulP study, most farmers interviewed (22/25) highlighted how unpredictable rainfall and poor weather patterns made it difficult to plant at the optimal time, stunting crop growth and affecting overall production. Climate-related factors also significantly disrupted Alliance Gineries' organic cotton farming program (discussed in more detail in section 4).

Women are significantly underrepresented in top leadership, with only 4 of 26 companies (15%) having a female CEO or Managing Director, and 2 additional companies (8%) reporting joint leadership between a husband and wife. The remaining 20 companies (77%) have never had a woman in the top leadership role. In most cases, a male leader has held the position since the company's founding.

EZCF insights: Improper use of agricultural inputs due to limited knowledge was flagged as a significant challenge in several EZCF supported projects, leading to farmers inadvertently compromising the quality and effectiveness of these inputs. For example, one particularly concerning issue was the mixing of high-quality seed with grain, which undermined efforts to boost crop yields and ensure better harvests.

Low adoption of mechanisation: Mechanisation remains extremely limited among Zambia's smallholder farmers. For instance, according to a 2023 study, only 0.2% own tractors, and just 1.7% make use of tractor services, reflecting widespread dependence on manual labour or rudimentary tools (Teschemacher et al, 2023). This lack of mechanisation significantly reduces agricultural efficiency, restricts the area that can be cultivated, and hinders the timely execution of key farming operations. It can also limit adoption of climate-smart agriculture practices (such as minimum tillage or precision planting) which often require mechanised support to be implemented effectively and at scale.

Limited access to inputs: Many smallholder farmers lack access to quality inputs due to high costs, which puts them out of reach. In particular, low fertiliser use, and low application intensity have been identified as two main factors limiting agricultural productivity in Zambia (Chapoto et al, 2016). This issue is explored further below.

Cost of agricultural inputs

Quality inputs directly affect crop performance, and the use of improved seeds and fertilisers can greatly increase productivity and enhance farm profitability. However, the high cost of these inputs often means that many SHFs operate at a fiscal loss, with only a few able to afford fertilisers at commercial prices.

EZCF insights: One of the key challenges identified by SHFs in EZCF-funded projects is the high cost of essential inputs like seeds, fertilisers, and chemicals. A farmer highlighted this challenge, stating, *"Sometimes, we can't even afford the half-payment for seeds."* Many farmers rely on input loans, but these arrangements often result in significant debt, reducing their profits and creating financial instability.

The extent of these challenges was highlighted in recent QLP studies conducted on Good Nature Agro (2024) and Farm Depot (2023):

Good Nature Agro (GNA): Most farmers interviewed (17/24) noted that the high cost of inputs, particularly fertiliser, made them difficult to obtain. Insufficient inputs led to reduced yields for many farmers (14/24), which in turn lowered their income, creating a negative feedback loop. Over a third of farmers described this cycle, where poor yields hindered their ability to purchase necessary inputs.

Farm Depot: While Farm Depot's interventions have improved access to poultry farming inputs, many farmers (14/24) experienced a decrease in poultry farming income over the past three years, largely due to the high cost of poultry inputs, especially feed, combined with low market prices for chicken, which significantly reduced profitability.

Inadequate infrastructure

Poor road networks, high transportation costs, and inadequate storage facilities continue to hinder SHFs' ability to compete effectively in formal markets (EZCF, 2025). These infrastructure gaps not only raise production and distribution costs but also reduce product quality and contribute to high post-harvest losses - undermining profitability and limiting access to higher-value markets that offer more favourable prices.

a) Road infrastructure

One of the most pressing issues is the poor state of road infrastructure, particularly in rural areas where SHFs primarily operate (Malesu et al, 2024). Moreover, farmers in these areas typically travel an average of 30.2 km to reach a tarred road and 1.9 km to access a feeder road (Mangaba et al, 2021). This poor infrastructure greatly restricts the movement of both agricultural produce and essential inputs, escalating transportation costs, and increasing the time it takes for farmers to get their goods to market. Reliance on poor roads for market access also leads to significant post-harvest losses, especially in the case of perishable products.

EZCF insights: Farmers highlighted the high cost of transportation as a major obstacle to their business operations, noting how these costs drive up input prices. For instance, farmers working with Plant Health expressed concerns about high transportation costs charged by suppliers for delivering inputs to their farms, with one stating: *"We use our own transport money to fetch the seeds and fertiliser bags from the office...We are spending a lot on transport."*

b) Storage

In addition to transportation challenges, the lack of adequate storage infrastructure, especially cold storage, further exacerbates market access issues. This particularly impacts farmers producing perishable items, which, if not stored properly, quickly deteriorate, further reducing their market value and leading to substantial losses. Highlighting the challenge, it is estimated that 17% of smallholder farmers face post-harvest losses, with losses for some households reaching up to 50% of their production, largely being attributed to lack of access to post-harvest storage solutions (Teschemacher et al, 2023). The lack of storage infrastructure also prevents farmers from preserving their produce for longer periods, forcing them to sell their produce immediately or at much lower prices when the market is flooded, hindering their ability to benefit from seasonal price fluctuations (Akiri et al, 2024).

EZCF insights: Many farmers involved in EZCF supported projects raised the issue of inadequate storage facilities, which led to losses from spoilage, pests, and theft, significantly impacting their earnings.

c) Power

The erratic power situation in Zambia, characterised by prolonged loadshedding, which is often more severe in rural areas, and reliance on inconsistent hydropower, affects farmers in various ways. Many farmers depend on electrical equipment for activities such as processing, storing, irrigation, or operating agro-processing machinery. Power outages can lead to decreased production or increased operating costs for diesel or other fuel generators.

EZCF insights: Many farmers under EZCF rely on rain-fed agriculture. Power cuts affect their ability to use any electrical irrigation, especially during droughts. Some smallholder farmers were able to invest in solar alternatives through the EZCF project.



Weak market linkages and information gaps

Often smallholder farmers in Zambia lack connections to formal buyers, a challenge compounded by historically poor access to timely market information such as pricing and demand. While this has often left producers unaware of market opportunities—allowing middlemen to intervene and offer exploitative prices—recent improvements in mobile phone penetration have begun to increase farmers' access to price information. Supplying to institutional markets often requires winning a tender or supply contract, which middlemen, who have access to this information, are more likely to secure.

The Food Reserve Agency (FRA), a major institutional buyer with over 1,200 depots across the country, presents a potential opportunity for smallholders. FRA procurement is associated with higher prices for participating farmers and reduced price volatility. However, the main crop purchased is maize which can also discourage crop diversification (Hadunka and Teschemacher, 2024).

EZCF insights: SHFs expressed concerns about low prices due to dependence on middlemen, limited buyer options, and unfair input prices.

Limited buyer options and dependence on middlemen: Many farmers in the EZCF program reported feeling restricted by the lack of buyer options and unclear contractual agreements. Farmers involved in the Kafue fish farming project expressed concerns about the pricing structure, particularly driven by dependence on middlemen. One farmer stated, *"We should eliminate marketers from the value chain and sell the fish ourselves at a profitable price."* To address these challenges, farmers suggested improving market linkages and diversifying buyer options to ensure more equitable pricing and enhanced bargaining power.

Unfair input prices: Farmers recommended that companies could increase sales over the longer term by conducting comprehensive market research to set fair prices that reflect production costs and ensure reasonable profit margins for farmers, instead of exploitative rates. One farmer highlighted the high cost of seeds, stating, *"We were told the seeds are expensive due to their high quality. We hoped to cover production costs, but with the low prices offered, we can't make a profit."*

3. STRATEGIES TO IMPROVE MARKET ACCESS

3.1. CREATING COMMERCIALLY VIABLE PARTNERSHIPS THAT PERSIST BEYOND INITIAL FUNDING

Private sector-led initiatives offer an effective way to integrate smallholder farmers into formal supply chains by addressing key barriers while also ensuring long-term sustainability, creating commercially viable partnerships that persist beyond initial funding.

- By aggregating produce from multiple farmers, these initiatives help overcome supply-side limitations, ensuring the volumes, consistency, and quality needed to meet the demands of formal buyers.
- These initiatives often provide essential access to credit and quality inputs, which are typically inaccessible to individual farmers, as well as bridge the knowledge gap by offering agronomic training and extension services. Through this support, farmers can improve yields and product quality, which in turn enhances compliance with market standards.
- By offering guaranteed off-take agreements, these schemes reduce market risk for farmers, ensuring a reliable buyer and fostering trust.
- Profit-driven incentives further promote long-term sustainability, aligning farmer support with the commercial interests of the private sector.

There are many examples of successful private sector-led market development initiatives in Zambia. One notable example outside the EZCF project is **Zambia Breweries**, which promotes local value addition in agriculture by sourcing ingredients such as maize, barley, sorghum, and cassava from local farmers across the country (Zambia Breweries, 2025). Approximately 80% of its ingredients are sourced locally, benefiting over 20,000 smallholder farmers while creating more than 80,000 jobs across the value chain

EZCF insights: Several private sector-led out-grower schemes have improved market access for thousands of smallholder farmers by integrating them into structured supply chains, securing reliable buyers, and supporting production through training and input provision. For example:

Mount Meru Millers Zambia Ltd produces edible oil for sale in Zambia, sourcing 95% of their inputs (soyabean, sunflower seeds and cotton seeds) from SHFs across Southern, Central and Eastern provinces. Over the 30 months of the project, Mount Meru Millers contracted over 11 thousand SHFs as sunflower outgrowers, providing a reliable market for the crop and offering prices equal to or better than competitors. The company also provided access to improved seeds and other inputs on credit, training and extension to increase productivity and quality.

Good Nature Agro (GNA) contracts over 38 thousand SHFs as outgrowers for soybean, beans, and groundnut seed and grain. GNA also supports these farmers by providing them with training in good agricultural practices to support productivity and product quality, as well as affordable inputs.

Alliance Ginneries and Nokamu offer further examples of effective smallholder integration into formal supply chains through structured out-grower schemes. These models are explored in greater detail in the case studies presented in Section 4.

3.2. STRATEGIES TO IMPROVE SHF PRODUCTIVITY

Improved access to high quality inputs

Access to affordable and high-quality agricultural inputs is a critical enabler of smallholder participation in formal markets, both in terms of increasing yields and consistency of supply, as well as improving the quality of produce to meet industry standards.

EZCF insights: Improved input access has been a key feature of several EZCF-funded projects. For instance, recent QulP studies conducted on Farm Depot and Good Nature Agro provide independent evidence of how improving access to inputs has been integral in scaling production. The programme has also shown the return to higher quality inputs.

At **Farm Depot**, one of the most widely reported outcomes among participants was improved access to finance specifically for input purchases (such as chicks, feed, and vaccines). Almost all farmers interviewed (22/24) cited the loan scheme as instrumental in scaling up their poultry farming activities.

Similarly, at **Good Nature Agro**, most farmers interviewed (22/24) were able to access fertilizer and seeds through the program. Improved affordability and input availability were directly linked to increased yields and incomes.

Training in effective farming practices

Training, particularly when paired with access to quality inputs, plays a key role in helping smallholder farmers improve productivity and adopt more efficient, sustainable farming practices. Providing targeted training equips farmers with the knowledge and skills needed to increase yields, manage resources more efficiently, and meet quality standards required by formal markets.

EZCF insights: Evidence from recent QulP studies on Farm Depot and Good Nature Agro highlights the value of both formal and informal training in helping farmers adopt improved farming techniques and management practices, leading to improving yields showing the return to investing in training:

Good Nature Agro: Many farmers reported adopting new agricultural practices as a direct result of training or extension support received through the programme. These changes - such as improved crop spacing - were especially beneficial for soybean production, where 6/9 farmers reported noticeable improvements in yield.

Farm Depot: More than half of farmers interviewed stated that they benefited from training or advisory services offered through the project. Feedback from Farm Depot staff also indicated that more intensive training - particularly on poultry management - would further strengthen outcomes, noting that sessions were sometimes too short to cover all questions

3.3. DIGITAL SOLUTIONS

Strengthening supply chain: overcoming market failures through reducing the cost of information

Digital tools can greatly enhance smallholder farmers' ability to connect with various actors along the supply chain, enhancing productivity, product quality, and compliance with standards. By using digital platforms for information exchange, farmers also can better coordinate activities such as planting schedules, input distribution, and post-harvest handling, and collaborate more effectively with suppliers, cooperatives, and service providers. Moreover, tools such as mobile apps, digital certification systems, and farm management software can streamline record-keeping, simplify reporting processes, and enhance traceability, which in turn facilitates compliance with standards.

EZCF insights: Examples of these digital platforms are provided by two companies supported by the EZCF program, namely Good Nature Agro (GNA) and Farm Depot. Through these platforms, information is made accessible to extension officers and farmers who have access to smartphones through both companies' platforms, reducing the physical barriers and associated costs of information.

GNA's Farmers' Engagement App: GNA has created a digital platform to facilitate information flow and align supply with demand. This platform allows GNA to share data about SHFs with various stakeholders, including financial institutions, service providers (such as mobile network operators), and other businesses. This platform also provides solutions to costly extension services, lack of information for farmers, and traceability demanded by customers. After extensive testing, the platform is now fully operational, enhancing GNA's ability to improve service delivery to its outgrowers. GNA plans to add a USSD component that will be accessible to farmers without smartphones.

Farm Depot: Farm Depot's digital platform performs similarly to GNA's Farmer's Engagement App but has an additional aspect in that the platform has now started using customer and SHF data to create credit profiles for their SHFs and help them gain access to finance.

Another area being addressed with support of the EZCF program is the sale of **counterfeit seeds** (EZCF, 2025). Digital solutions, such as seed verification systems, enable farmers to verify the authenticity of seeds before purchase, often without opening the seed bags. This use of technology helps ensure that farmers receive certified, genuine seeds, which can improve crop yields and contribute to greater agricultural productivity, while also fostering compliance with quality standards.

EZCF intervention - Digital seed verification system

The Zambia Seed Trade Association, with support from EZCF, is implementing a project titled "Reducing the Sale of Fake (Counterfeit) Seed Through Use of Digital Technology". This initiative involves developing a digital seed verification system that enables farmers to authenticate seed bags by sending unique codes via SMS to a central database hosted at the Seed Control and Certification Institute in Lusaka. The system aims to provide farmers with real-time information about the authenticity of seeds, reducing the prevalence of counterfeit seeds and improving market integrity.

Digital marketplaces, real time price information and market power

Digital marketplaces can enhance smallholder farmers' access to formal markets by improving market linkages and providing real-time information on pricing, demand, and buyers. Mobile technology and digital platforms enable better communication between farmers, buyers, and suppliers, reducing reliance on intermediaries. This access to market data helps farmers make informed decisions, increase bargaining power, and strengthen their position in formal markets.

Several platforms have already been established in Zambia, with **Maano Virtual Farmers' Market (MVFM)** serving as a notable example (Nalwimba, 2024). Launched in 2021 by the World Food Programme (WFP) Zambia, this platform was developed to enhance smallholder farmers' market access by providing key services such as market price information, improved buyer connections, and the ability to sell produce at better prices. The platform also integrates automated payment systems linked to mobile money and commercial banks. Accessible through a USSD code, the MVFM allows farmers to connect directly with buyers and negotiate fair prices. By 2023, the platform had expanded to include 99,016 farmers, significantly improving their linkages to formal markets across the country.

EZCF insights: While not strictly a digital marketplace, GNA's Farmer Engagement App equips farmers with real-time market price information, helping them make more informed selling decisions and negotiate better terms with buyers.

4. CASE STUDIES

This section profiles three EZCF-supported programmes - Alliance Ginneries, Nokamu, and Chisamba Ranching and Cropping - that stand out for their contributions to improving market access for smallholder farmers. Each case offers valuable insights into how different models and approaches have been applied to support smallholders, highlighting both shared success factors and context-specific challenges.

4.1 ALLIANCE GINNERIES

Background

Company profile: Alliance Ginneries Ltd is a cotton ginning company operating across Southern Africa. Registered in Zambia in 2006, and with sister companies in Tanzania and Zimbabwe, the company works with over 50,000 SHFs across the region, including around 14,000 in Zambia. Under its cotton out-grower model all crops are produced by SHFs. Alliance supplies these contracted farmers with inputs and purchases the harvested crop at the end of the season, which the company then processes into cotton lint, while the cottonseed is sold for the production of cooking oil and animal feed. To support sustainable farming and soil fertility, the company also engages in the trade of rotational crops (mainly legumes such as cowpeas and soya) which are grown alongside cotton.

EZCF support: *Developing Zambia's first organic cotton out-grower scheme*

A central and growing focus of Alliance Ginneries' operations is the development of organic cotton production, driven by rising global demand and opportunities to access premium international markets, particularly in Europe, where organic cotton commands higher prices. Alliance successfully established a smallholder-based organic cotton out-grower scheme in Tanzania and identified strong potential to replicate this successful model in Zambia.

In 2021, with support from the EZCF, Alliance launched its project aiming to develop what would be Zambia's

first large-scale organic cotton out-grower programme, with targets to contract up to 15,000 smallholder farmers and provide them with training in organic and climate-smart agricultural practices. Building on its Tanzanian experience, the initiative sought to create climate-resilient livelihoods for SHFs while improving incomes through participation in premium organic cotton markets.

Navigating climate extremes - progress amidst setbacks

Throughout the project, Alliance Ginneries faced climate-related challenges at both extremes. Initially launched in Zambia's Northern and North-Western Provinces, the project was forced to relocate due to excessive rainfall that made the areas unsuitable for cotton cultivation. Operations shifted to Chongwe, Rufunsa, and Luangwa districts in Lusaka Province, requiring a full restart, including renewed engagement with the Ministry of Agriculture and a new round of farmer recruitment, sensitization, and training. Despite these disruptions, Alliance contracted over 6,000 smallholder farmers and trained approximately 20,000 in organic cotton production, exceeding its training target even though contracted numbers fell short of the original goal.

Climate challenges persisted in the new locations, with the 2023–2024 season bringing one of Zambia's worst droughts in recent years. While yields were affected, cotton proved to be one of the few crops that endured the dry conditions (unlike maize, which failed widely) demonstrating its potential as a drought-tolerant cash crop amid increasing climate variability.

Strengthening Smallholder Participation in Organic Cotton

Exceeding Expectations in Organic Certification

The rollout of the organic certification process began with some scepticism, as many smallholder farmers were hesitant to adopt organic practices due to negative experiences with a failed initiative more than a decade earlier. As a result, rebuilding trust and confidence in the viability of organic cotton as a marketable product was a key early hurdle. In the first year, while most farmers followed organic standards, a small number used chemical pesticides when extension officers were not present. These individuals were excluded from the programme, and by the following season (2022), residue testing confirmed no further pesticide use.

Under standard organic transition protocols, farmers are first certified as producing "cotton in conversion" before qualifying for full organic certification, typically after a three-year period. However, a major success of the project was that many farmers achieved full certification far ahead of schedule. Of the 6,000 participating smallholders, 1,558 had achieved full organic certification by year two, with the rest at advanced stages of conversion. This outcome exceeded expectations, particularly given that some farmers had no prior experience with cotton and were newly trained.

Benefits of going organic – reduced input costs and increased profits

Farmers have already begun to see the benefits of organic cotton production, particularly through reduced input costs and better market returns. Unlike most crops, organic cotton does not require chemical inputs, significantly lowering production costs. These lower production costs, combined with reduced transport expenses (since the new project site is located closer to Alliance's facilities) allowed the company to cover all input costs for participating farmers, making the model more accessible. Organic cotton's long growth cycle and single harvest also make it ideal for annual residue testing, unlike horticultural crops that require more intensive monitoring. This reduced complexity supports compliance and lowers resource burdens.

On the market side, farmers received a 20% price premium during the first year. Although global oversupply led to a temporary drop in premiums in later years, the model remains commercially promising, with expectations of price recovery as market conditions stabilize.

Access to premium markets

Market linkages with international buyers

Alliance is currently collaborating with major international textile manufacturers - including Paul Reinhart International, a leading trader supplying European clothing brands - as well as direct buyers in the global textile industry. These relationships are essential for securing consistent price premiums for organic cotton. When producers work closely with buyers and agree on pricing terms in advance, stable premiums can be negotiated. However, the main challenge lies in reaching the volume and consistency required to secure long-term, high-value contracts. At present, Zambia's organic cotton out-grower scheme is producing approximately 1,000 tons annually. While this represents commendable progress, especially considering the project's initial setbacks, the current volume remains too low to command premium pricing at scale (buyers typically require consistent annual volumes of 10,000 to 20,000 tons to commit to fixed premium arrangements).

Opportunities to scale production

Despite current limitations, there is strong potential for expansion. Organic cotton's low input requirements and proven drought tolerance make it an increasingly attractive option for SHFs, especially as other crops become more vulnerable to climate variability. As more farmers witness the reliability and profitability of cotton, uptake is expected to grow. Notably, many farmers already involved in the program have access to larger-than-average landholdings, often exceeding five hectares. Much of this land remains underutilized, and current efforts focus on encouraging existing participants to allocate more of their land to organic cotton cultivation, allowing for growth without the need to expand farmer recruitment substantially. Additionally, Alliance has indicated plans to expand organic production into areas currently supplying conventional cotton.

4.2 CHISAMBA RANCHING AND CROPPING (CRC)

Background

Company profile: Founded in January 2018, Chisamba Ranching and Cropping (CRC) is an integrated farming operation that combines both ranching and cropping activities, specializing in agricultural production and providing affordable protein to wholesale and retail markets. In addition to its retail and wholesale operations, CRC breeds livestock, including cattle, chickens, and pigs, and operates feedlots while also growing a variety of crops.

EZCF support: Integrating SHFs into beef supply chains

Supported by EZCF funding, CRC implemented an out-grower scheme designed to expand and improve market access for small-scale livestock producers. The initiative targeted 3,000 SHFs, including 1,500 young farmers (1,000 male and 500 female), 700 additional female farmers, and 800 older male farmers. A core objective of the project was to improve the quality of cattle supplied by these producers and to demonstrate the commercial benefits of marketing young, two-year-old steers and heifers, which could be further finished in feedlots to enhance beef quality and enable farmers to secure higher prices. Additionally, the project aimed to help SHFs improve the efficiency of their cattle operations, bridging the gap between traditional and commercial cattle farming practices.

Market access and diversification

CRC has strengthened access to markets in several ways by investing in robust market information systems, expanding and diversifying its customer base, and improving product compliance and traceability - all critical for accessing higher-value markets.

Diversity in customer base

CRC serves a diverse customer base, catering to both the high and low ends of the market. Approximately 60% of their sales target the premium segment, while the remaining 40% serve the more affordable market, both through their own butcheries and the 22 Pick n Pay outlets they operate. Additionally, CRC runs a wholesale butchery in Lusaka, serving hotels, restaurants, and other repeat customers.

Moreover, in a bid to diversify, CRC has recently begun slaughtering goats, opening a new income stream. This initiative also offers an entry point for SHFs who cannot afford cattle but wish to participate in the livestock sector. Goat meat, which has become increasingly popular and risen in price, has positioned CRC as the only goat slaughterer in Zambia's Western Province, further strengthening its market presence.

Market information and linkages

CRC gathers market intelligence to determine optimal locations for its butcheries. It also benefits from direct sales data provided by Pick n Pay, which helps inform its decisions on where to establish new butcheries. Additionally, the company draws on the expertise of ZamBeef owners, who are also shareholders in CRC, further strengthening its market positioning.

Compliance and traceability

CRC has developed an effective traceability system, which plays an important role in ensuring the transparency and quality of their products throughout the supply chain. They can trace all products, from their butcheries to the point of sale at supermarkets or wholesalers (beyond which, traceability depends on the systems of the individual retailers). For meat sold in their butcheries, CRC can trace it back to the specific batch it came from, ensuring clear product origins.

In addition to meat, CRC maintains traceability for their crops, which are packaged in batches and barcoded for easy tracking by agents. For poultry, CRC partners with Chicken Supreme Ross Breeders as outgrowers. Each batch of chickens requires a health certificate, which CRC completes before sending the batch to Chicken Supreme, further enhancing the integrity and transparency of their operations.

Addressing Structural Barriers and Enhancing Farmer Productivity

As highlighted in previous sections, challenges such as inadequate infrastructure (particularly logistics) and low productivity - often due to limited knowledge of sustainable farming practices - restrict SHFs' ability to effectively engage in formal supply chains, which ultimately affects their market access.

To address infrastructure-related challenges, CRC implemented the following:

- Established an efficient logistics network, including four cattle trucks and collection centres where SHFs can deliver their cattle.
- Provided financial support to traders for setting up a feedlot. Once the feedlot is operational, traders collect cattle from SHFs and are committed to selling them to CRC.

To improve productivity and promote sustainable farming practices, CRC took the following steps:

- Commissioned Impuls Africa to lead training and capacity-building initiatives, as well as a business case study to assess the market and landscape of SHFs (150 SHFs part of CRC and 150 independent SHFs). This helped design targeted training programs and materials.
- Collaborated with Impuls Africa to produce a Beef Sustainable Production Manual (120 pages, available online), along with capacity-building materials for poultry and cattle farmers, and hosted field days for crop farmers.
- Provided training to over 1,577 livestock farmers, 779 crop farmers, and 509 poultry farmers.

4.3 NOKAMU ENTERPRISES LIMITED

Background

Company profile: Nokamu began operations in 2006 as a printing and office supply business. It was formally incorporated in 2010 and later expanded into the agricultural sector in 2016. Headquartered in Chipata, Nokamu now manages agri-input retail outlets across eight districts in Zambia's Eastern Province. These outlets supply a variety of agricultural products (including seeds, fertilisers, animal feed, and agrochemicals) to approximately 6,000 farmers annually. Over the past four years, Nokamu has engaged with smallholder farmers through a sunflower out-grower programme, providing them with inputs and agronomic support. The success of this initiative prompted the company to invest in sunflower oil processing infrastructure, acquiring a processing line in 2021 to produce edible oils.

EZCF support: *Expansion of SHF sunflower out-grower scheme*

With support from the EZCF, Nokamu set out to expand its sunflower out-grower scheme from 250 to 1,000 smallholder farmers. By 2024, the company had successfully contracted over 840 farmers, bringing it close to the original target. The expansion aimed to create a more secure, consistent, and traceable supply of high-quality sunflower for Nokamu's processing operations. By relying on a contracted grower base rather than sourcing from unpredictable open markets, the company was better positioned to manage price volatility, ensure timely deliveries, and streamline payment processes, ultimately strengthening its supply chain resilience.

A key element of the expansion focused on improving smallholder productivity by combining agronomic training with increased access to certified sunflower seed. Certified seed, though typically unaffordable for many farmers, was provided through the project to improve yields and oil content. This not only enabled farmers to meet Nokamu's quality standards but also increased their profitability, making the model mutually beneficial for both producer and buyer.

Unlocking the Potential of Sunflower for Domestic Oil Production

Although Nokamu's sunflower initiative is relatively small in scale, it has demonstrated strong results and offers broader lessons for Zambia's edible oil sector. Nationally, Zambia has significant potential to expand domestic oil production, but current oilseed crops, particularly soya, present limitations. While soya is widely grown, it yields only 10–11% oil, with around 80% of the output becoming soya meal, which must be sold to sustain crushing - but this has proven difficult due to limited market demand.

In contrast, **sunflower offers much higher oil yields** (up to 33%) and could serve as a viable alternative to reduce dependence on imported palm oil. However, a key constraint is that sunflower cake - the byproduct of oil extraction - is relatively low in value. It can be used in livestock feed, particularly for poultry, but has limited demand beyond that. Nokamu has begun exploring potential markets and uses for sunflower cake but has yet to determine whether this avenue will be economically viable at scale. Nonetheless, the high oil yield from sunflower positions it as a promising crop for strengthening Zambia's edible oil self-sufficiency, particularly if downstream markets for its byproducts can be further developed.

Increased productivity through access to certified seed

A major driver of improved productivity under Nokamu's out-grower scheme has been the introduction of certified sunflower seed. Unlike other crops such as cotton, where certified seed is relatively affordable, certified sunflower seed is costly and often out of reach for most smallholder farmers. As a result, many rely on uncertified varieties, which produce lower yields and significantly less oil.

Through the project, farmers were not only trained in better agronomic practices but were also supplied

with certified seed, leading to substantial improvements in output. In 2024, over 840 SHFs involved in the project received certified seed on credit, just below the original target of 1000 farmers. Certified seed produced oil extraction rates of 25–33%, compared to just 10–15% with uncertified seed, **nearly doubling oil yield per ton**. For Nokamu, this translated into an additional 100 kg of oil per ton of sunflower processed, making the investment in quality seed economically worthwhile. The programme proved so successful that by the second year, strong harvests from an increased number of farmers led to an oversupply, requiring the company to identify additional buyers to absorb the surplus production.

Overcoming storage constraints

With support from EZCF funding, Nokamu addressed one of its major operational bottlenecks by constructing or refurbishing six warehouses to support bulking and storage of sunflower grain. These facilities, located close to production areas, allow the company to aggregate harvests from smallholder farmers in the field. While overall storage capacity remains modest, the improved infrastructure enables a more efficient and continuous processing cycle: as space becomes available, fresh grain is brought in, temporarily stored, and then fed into the processing line.

Importantly, Nokamu has adopted a demand-responsive approach to oil production. Rather than processing all the grain at once and storing large quantities of oil - which risks product degradation and ties up working capital - the company stores unprocessed grain and crushes it in smaller batches based on market demand. This strategy helps maintain consistent supply to customers, aligns production with sales capacity, and reduces post-processing storage needs.

Expanding to formal markets

Nokamu initially entered the market as a low-cost supplier, targeting underserved consumers through schools, orphanages, and Chinese-owned supermarkets, where regulatory compliance requirements were less stringent. This strategy helped the company establish an early customer base and build strong brand recognition.

However, Nokamu has made substantial progress in strengthening its regulatory compliance, aligning its operations with national standards. This has allowed the company to move beyond its positioning as a low-cost supplier and begin trading at market-related prices. The successful attainment of ZABS certification marked a critical step toward accessing formal retail markets. Nokamu is now supplying its products to Choppies, a national supermarket chain, and is pursuing further entry into structured retail channels. Although a supply agreement with Shoprite was nearly finalized in early 2024, persistent load-shedding at the time constrained Nokamu's ability to meet the required supply volumes. The company has since re-initiated the engagement process and expects to commence supply to Shoprite in Eastern Province later this year.

Lastly, a key driver of consumer loyalty has been the preference for unrefined sunflower oil, which many associate with a more natural taste and health benefits. In contrast to large-scale refined oils - which often use hexane in the extraction process and are blended with imported palm oil - Nokamu's product is seen as more authentic and trustworthy. This preference for unrefined oils helped Nokamu maintain a competitive advantage in informal and formal markets.

5. CONCLUSION AND RECOMMENDATIONS

EZCF-supported projects have made encouraging progress in improving market access for smallholder farmers, with some interventions demonstrating strong results across productivity, input access, training, and buyer linkages. However, results have varied by context, and important barriers persist. This section draws on project-level examples to highlight where interventions have worked well, and where further support is needed to achieve sustained, inclusive market integration.

Access to quality inputs: Improved access to quality inputs emerged as a consistent success factor across many projects. For example, Nokamu's provision of certified sunflower seed contributed to significant yield improvements and increased oil content, translating into higher profits for participating farmers. Nevertheless, input costs remain a major concern elsewhere, with many farmers reporting that high input prices and unfair purchase arrangements continued to constrain their profitability.

Training and capacity building: Training played a central role in helping farmers adopt new practices and improve their productivity. Alliance Gineries provides a strong example by successfully training smallholders - who were entirely new to cotton - on organic farming production methods, leading to reduced input costs, promising yields, and opened access to higher-value markets. In contrast, feedback from other projects - such as Farm Depot - suggested that while training was appreciated, sessions were often too short or lacking in depth. Emphasizing climate-smart agriculture training is particularly crucial given the increasing frequency of climate-related disruptions that have impacted productivity across several projects.

Infrastructure and logistics: Infrastructure gaps, particularly in transport and storage, continue to limit market participation and reduce profitability. High transport costs were frequently raised by smallholders, who often have to organise their own transport to reach buyers or collection points. These costs can significantly erode farmer earnings, especially in remote areas. In addition, where smallholders were also responsible for post-harvest storage, inadequate infrastructure increased the risk of losses and forced early sales at low prices. These challenges highlighted the need for continued investment in rural aggregation points, storage, and transport. Nokamu demonstrates a promising model, using EZCF support to improve storage facilities and implement a demand-responsive processing system, enabling more efficient use of available space.

Market linkages: Structured buyer arrangements under out-grower schemes ensured consistent offtake and reduced market uncertainty for smallholders. However, farmers outside structured contractual arrangements still depend heavily on middlemen, resulting in low prices and limited alternative market opportunities. This was noted particularly in projects lacking formal supply agreements. Strengthening direct market linkages beyond out-grower schemes as well as increasing access to market information will be important to reduce dependence on middlemen and open opportunities for improved prices.

Digital tools and market platforms: Digital solutions hold strong potential for enhancing smallholder market access, particularly as projects expand and farmer networks grow. Good Nature Agro offers a compelling example of how digital tools can support extension services, supply coordination, and input access. As more farmers are integrated into formal value chains, the adoption of digital platforms - for traceability, input verification, price transparency, and farm management - can provide cost-effective solutions to improve efficiency and connectivity. There is also an opportunity to explore the use of digital marketplaces to strengthen linkages between producers and buyers and reduce reliance on intermediaries.

Experience with the EZCF programme points to the following issues to take into account when designing future interventions to enhance market access for SHFs:

Leveraging lead firms is an effective tool for reaching SHFs. This goes beyond access to quality inputs and market linkages to innovation in e.g. organic produce.

Create commercially viable relationships that can last beyond the initial funding by supporting economic links that **demonstrate win – wins** from developing, and participating in, e.g. out grower schemes. Providing a **“demonstration effect”** is also important to motivate the investment in higher quality input and training to upgrade SHFs productivity. Harnessing the demonstration effect requires data collection and adaptability, and should be approached with some caution given the wide range in the absorptive capacity of SHFs – and therefore the potential return from upgrading.

The programme has also shown how **digital solutions can overcome a number of market failures by radically reducing the cost of information**. This has been illustrated in the area of extension services, where the low cost of connecting to SHFs through ICT has enabled providers to expand their coverage and reach; to enable traceability and thereby help address the challenge of counterfeit seeds; and to mitigate the imbalance of market power and help to get a fairer price for SHFs.

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