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Raw Material Sourcing as a Lever for Shared Value

Supporting SME food processors in Sub-Saharan Africa to solve their raw material challenges in ways that boost farmer livelihoods

TECHNOSERVE | DECEMBER 2024

ACKNOWLEDGMENTS

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Valuable feedback provided by
Kindra Halvorson, Dominic Schofield, Alexander Hurst, Cristina Manfre

An enormous thank you to the 10 food processors, 18 individual farmers, three farmer groups, and two farmer cooperatives who participated in in-person interviews; the 521 farmers who participated in rapid phone interviews conducted by 60 Decibels; and all clients of the Alliance for Inclusive and Nutritious Food Processing (AINFP) over its 6 years of operation. Their identities are anonymized here and throughout the document to maintain their privacy. The information, experiences, and insights they shared were fundamental to the development of this paper.

Recommended citation
McCurdy, C. (2024). *Raw material sourcing as a lever for shared value: Supporting SME food processors in Sub-Saharan Africa to solve their raw material challenges in ways that boost farmer livelihoods.* TechnoServe. Retrieved from https://tsrv.link/RMSLSV

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Introduction: Addressing Food Insecurity, Malnutrition, and Poverty in Sub-Saharan Africa

CRISES AT A GLOBAL SCALE: FOOD INSECURITY, MALNUTRITION, AND POVERTY

"We are halfway to 2030 and yet nowhere near to achieving the SDGs [Sustainable Development Goals]."

Lachezera Stoeva, President of the United Nations (UN) Economic and Social Council, shared this sobering update during the September 2023 SDG Summit, where UN officials warned that the Sustainable Development Goals are "woefully off-track." If current trends continue, only 15% of targets are expected to be achieved by 2030. According to the UN Foundation's 2023 Global Sustainable Development Report, **achieving food security and ending malnutrition are among the lowest performing targets,** as acute food insecurity has more than doubled since 2019, and **eradicating extreme poverty made negative progress** from 2020-2023 as the COVID-19 pandemic, deepening environmental pressures, conflict and ensuing economic shocks have further weakened food systems and pushed millions of people into extreme poverty.

The World Food Programme alerts that the scale of the global hunger and malnutrition crisis is enormous. The COVID-19 pandemic, conflict and insecurity, economic shocks, and weather extremes have reduced access to inputs, food production, food transportation, distribution and processing, and livelihoods through their interconnected impacts on soil, crop growth, animal survival, and labor productivity. According to Food and Agriculture Organization (FAO) estimates, **nearly 30% of all people face moderate or severe food insecurity — up from 25% in 2019 — with 37% of them in Africa**. According to the UN Children's Fund (UNICEF), global crises continue to disproportionately disrupt women's access to nutritious food; in 2021, there were 126 million more food-insecure women than men, compared to 49 million more in 2019, more than doubling the gender gap of food insecurity and exacerbating a vicious cycle of intergenerational malnutrition and poverty.

Though the share of the world's workers living in extreme poverty fell by half between 2010-2019, it rose for the first time in two decades in 2020 with the onset of the COVID-19 pandemic. According to World Bank estimates, **in 2023 almost 700 million people were living on less than $2.15 per day, the extreme poverty line. Just over half of these people live in sub-Saharan Africa.** If current trends continue, the UN warns that nearly 574 million people will still be living in poverty by 2030, with most in Africa.

ZEROING IN ON SUB-SAHARAN AFRICA

According to the World Bank, **"perhaps no priority is more pressing than addressing food insecurity to safeguard the calorie and nutrition needs of Africa's one billion people and protect their human development."**

Sub-Saharan Africa is facing the brunt of a food, fertilizer, and fuel crisis exacerbated by the war in Ukraine, impacts from the COVID-19 pandemic, extreme weather, rising debt, and soaring inflation. In 2022, food inflation rose by double digits in all but 10 African countries (Trading economics), and staple cereal production across the continent declined by 3.4 million tons from the average of the previous five years (CAADP report; FAO Crop Prospects report).

The FAO's most recent figures estimate that **61% of Africa's population was moderately or severely food insecure in 2022** — an increase of over 55% since 2014 and more than twice the global level. Prevalence was highest in Central Africa (78% moderate or severe; 39% severe) and Eastern Africa (69% moderate or severe; 28% severe). These figures also show that more women than men in Africa were affected by food insecurity in 2022 — a difference of 1.2%. Today, over 30% of children on the continent suffer from stunted growth due to malnutrition, with direct and significant links to maternal undernutrition from conception to 24 months. Annual GDP losses due to malnutrition average 11% for the continent (Global Panel, 2016).

Relatedly, global poverty is concentrated in sub-Saharan Africa. 2023 World Bank figures show that **more than half of the people in the world who are experiencing extreme poverty live in the region.** While the UN expects most regions of the world to eradicate poverty by 2030, it anticipates that 30% of sub-Saharan Africa's population will still be living in extreme poverty in 2030.

THE IMPORTANCE OF SMALLHOLDER FARMERS IN SUB-SAHARAN AFRICA

Smallholder farmers (SHFs) produce an estimated 80% of sub-Saharan Africa's food supply on their 33 million farms. In some sub-Saharan countries, SHFs account for up to 90% of food production. The region's population of 1.2 billion is forecast to double by 2050, threatening to exacerbate an already grave food crisis. Given the critical role of SHFs in the region's food production, adequately feeding today's population and meeting the nutritional needs of an additional one billion people by 2050 cannot be done without SHFs and the healthy growth of their businesses. However, according to the FAO, SHFs make up ≈60% of sub-Saharan Africa's poor.

Improving the incomes of SHFs is essential for both tackling poverty and sustainably nourishing the population in sub-Saharan Africa. As stated by the UN, eradicating poverty and hunger are integrally linked to boosting rural incomes, food production, and agricultural productivity. Similarly Concern Worldwide affirms that in order to end poverty and hunger, we must focus on the needs of smallholder farmers. This includes addressing the global yield gap between men and women farmers which averages 20–30%, largely due to differences in resource use on the land they farm. Evidence shows that if women farmers used the same level of resources as men, they would achieve similar yields and that closing the yield gap would increase agricultural output in developing countries by 2.5-4%.

THE AGRICULTURE-LED APPROACH TO INCREASING FOOD SECURITY, IMPROVING DIETS, AND BOOSTING INCOMES IN SUB-SAHARAN AFRICA

Given the severity of food insecurity, malnutrition, and poverty in sub-Saharan Africa, **increasing food security, improving diets, and boosting incomes have been key focus areas for development programming in the region. Many programs have taken an agriculture-led, farmer-level approach to achieve these goals,** facilitating farmer training in good agricultural practices (GAPs), climate-smart agriculture, and post-harvest handling; farmer certification; cooperative strengthening; secondary on-farm income generating activities; formation of savings and loan groups; access to finance initiatives; improved technologies for efficiency and value addition; and more, to improve productivity, crop quality, and farm profitability.

This farmer-level approach to improving incomes, food security, and nutrition is critical, as SHFs comprise a significant portion of the region's population that is currently living in poverty, and they produce most of the local food supply on which consumers have traditionally relied for their dietary requirements. According to the International Fund for Agricultural Development (IFAD), in sub-Saharan Africa, economic growth from agriculture is 11 times more effective at reducing extreme poverty than any other sector. Nonetheless, **evidence suggests that investing in other parts of the food system in complementary ways beyond agriculture is important to spur inclusive economic growth, increase food security, and improve the availability of nutritious diets. Investment in food processing, in particular, can significantly impact farmer productivity and livelihoods and, relatedly, the availability of nutritious, safe foods for consumers.** Recent evidence and experiences from the Alliance for Inclusive and Nutritious Food Processing highlight the importance of private sector engagement (PSE), particularly in the processing sector, to positively affect the quality and resilience of food systems.

Dairy farmer in Kenya delivers fresh milk to collection truck. (TechnoServe)

Beyond the Agriculture-led Approach: What the Alliance for Inclusive and Nutritious Food Processing (AINFP) Did Differently

Active from 2018-2024, the Alliance for Inclusive and Nutritious Food Processing (AINFP) was a partnership between the U.S. Agency for International Development (USAID), TechnoServe, and Partners in Food Solutions (PFS). AINFP aimed to create a more competitive food processing sector in Ethiopia, Kenya, Malawi, Tanzania, and Zambia in order to to generate more profitable opportunities for local SHFs and improve the availability of nutritious, affordable foods for consumers. By providing 1:1 technical assistance to small and medium-sized enterprises (SMEs) processing nutritious food products, AINFP helped these companies solve their business and manufacturing challenges to catalyze inclusive economic growth and increased production of nutritious foods for local markets.

The program made a specific effort to reach women as leaders of processing companies and as farmers to facilitate this inclusive economic growth; via a two-pronged approach, AINFP strengthened women's positions as leaders of processing firms and supported women- and men-led processors to adopt commercially beneficial practices that would attract and strengthen the livelihoods of women farmers.

During six years of operation, AINFP provided customized technical assistance to 241 SME food processors (51% women-owned or led) across the five countries. Over the life of the program, client processors:

- Sourced more than 260,000 metric tons (MT) of raw materials from over 349,000 SHFs (41% women farmers), with a cumulative value exceeding $118 million;
- Established new linkages with over 34,000 SHFs, resulting in over $20 million in sales for these SHFs;
- Produced 425,000 MT of new or improved food products.

Distinct from farmer-level approaches to improving incomes, food security, and nutrition, AINFP's entry point was food processors — specifically SME processors. An estimated 95% of SHFs in sub-Saharan Africa earn income through sales of raw materials to SME processors or wholesalers; compared to these SMEs, large enterprises play a relatively minor role in directly supporting SHFs. Further, according to the Alliance for a Green Revolution in Africa (AGRA)'s 2019 Africa Agricultural Status Report, only ≈20% of food consumed by Africans is produced via subsistence agriculture; the majority of food consumed flows through SMEs that buy commodities directly from SHFs and process them into food products. In addition to their critical roles providing markets to SHFs and supplying nutritious food products to local consumers, SME processors also create employment for millions of Africans and play a significant role in markets for seed, fertilizer, machinery, and other inputs.

Via *direct* support to SME processors, AINFP *indirectly* impacted SHF productivity and incomes, and thus the availability of raw materials to transform into nutritious food products.

Uniquely, AINFP started with processors' commercial goals and challenges, looking at how raw material sourcing contributed to these challenges and goals, and collaborated with processors to identify adjustments to and strategic investments in their raw material sourcing models that could meet their commercial needs and positively impact SHFs.

Where, when, and how processors get their raw materials impacts not only processor profitability and sustainability, but also farmer livelihoods. The quality of raw materials processors buy influences their market access, while the availability and cost of raw materials influence their cost of production and the volumes they can produce for the market. Similarly, processors' raw material sourcing models can influence farmer livelihoods and — by specifically integrating more women farmers into supply chains — can play a significant role in addressing economic inequalities. Sourcing models impact farmers in myriad ways: market

reliability, consistency of payment, favorability of price offered, access to financing, crop yields, crop quality, cost of production, and resilience to risks. Key factors include: whether processors buy directly from SHFs vs. via middlemen vs. from larger commercial farms; whether processors follow through on commitments to off-take; timeliness of payments to farmers; the price processors are willing to offer; and whether processors provide services that go beyond a transactional supplier-buyer relationship. **Recognizing raw material sourcing as both a business and impact driver, AINFP leveraged the sourcing needs of SME processors to improve livelihoods of SHFs.**

Dairy processing company in Kenya receives fresh milk. (TechnoServe)

About this Paper: The Value-Add

This paper shares key learnings and case studies from the AINFP program to answer four questions:

1. **When does sourcing raw materials from SHFs make sense for SME food processors?**
2. **What "ingredients" make a food processor-SHF relationship work well?**
3. **How do these "ingredients" impact SHFs?**
4. **How can strategic investments in SHF sourcing models address critical business challenges of SME food processors and also boost SHF livelihoods?**

By answering these questions, the paper aims to optimize the design of future agri-intermediary-centered initiatives that seek to sustainably boost SHF livelihoods and local availability of nutritious foods.

While the paper adds to an existing evidence base of commercial considerations that drive food processors to source raw materials from SHFs vs. other sourcing channels, it **uniquely focuses on the influence of the local SME food processing sector.** Compared with larger enterprises, SMEs have distinct needs and constraints that influence their raw material sourcing decisions. This paper shares the contexts and key considerations that inform those decisions by SME food processors, including:

» their top raw material sourcing challenges;

» sourcing challenges by value chain;

» common sourcing channels; and

» pros/cons per sourcing channel.

The paper then **goes beyond the business case for sourcing from SHFs to explore what actually makes processor-SHF relationships work well** — where processors consistently get the quality and volumes they expect, and SHFs are satisfied with and benefiting from the partnership. A purely transactional relationship may suffice; however, often a mix of tangible and intangible "ingredients" — behaviors, services, and investments by processors at the farmer level — are key to making it work. The paper outlines the main "ingredients" that SHFs and SME processors highlight as critical for a mutually beneficial, long-lasting relationship.

Further, the paper **not only highlights AINFP's direct impact on processor clients, but it also captures the indirect impact of AINFP's support to processors on their SHF suppliers.** Numerous quotes from interviews with AINFP clients and their SHF suppliers and case studies of five AINFP clients provide qualitative insights into the program's direct and indirect impacts. Results from a pilot survey of over 500 SHFs supplying three clients provide both qualitative and quantitative insights into the program's indirect impact on SHFs.

The lessons and data shared in this paper are based on:

» In-depth interviews with and critical input from 12 AINFP staff and three additional TechnoServe staff across Ethiopia, Kenya, Malawi, Tanzania, and Zambia;

» In-person, semi-structured interviews with 10 AINFP processor clients and a subset of the SHFs who supply to them in Tanzania and Malawi, conducted in December 2023;

» Phone surveys with 521 SHFs in Kenya and Tanzania who supply to three AINFP processor clients, conducted by 60 Decibels between August and September 2023;

» A review of business plans developed with AINFP processor clients to address their raw material sourcing challenges through strategic investments in smallholder sourcing models.

SEGMENTING SME PROCESSORS

Throughout this paper, there is reference to *SME food processors* — AINFP's overarching client category — which is then broken down into three sub-categories: "foundational," "transitional," and "accelerator." To define the three sub-categories of SME businesses, a combination of annual revenue, production volumes, and number of staff is used. Definitions vary across AINFP's five countries of operation based on the composition of the local industry. *Note:* these definitions are guides, and processors in a particular category may not meet all of the criteria. Categorization of a processor is ultimately up to the discretion of program staff, based on knowledge of the client.

The table below defines the three subcategories of SME processors by country. While production volumes and number of staff for a particular subcategory are similar across countries, annual revenue per subcategory varies by country. "Range of Annual Revenue for Clients Supported by AINFP" shows the lowest and highest annual revenues of the AINFP-supported processor clients.

SME Categorization by Size (# Staff, Production Volume, Annual Revenue [USD]) per Country

		ETHIOPIA	KENYA	MALAWI	TANZANIA	ZAMBIA
Foundational	<5 staff; <2MT/day	< $700K	< $500K	< $50K	< $100K	< $100K
Transitional	5-15 staff; 2-10 MT/day	$700K - 1.1M	$500K - 1M	$50K - 1M	$100K - 500K	$100K - 500K
Accelerator	>15 staff; >10 MT/day	>$1.1M	> $1M	> $1M	> $500K	> $500K
Range of Annual Revenue for Clients Supported by AINFP		**$37K - 7.2M**	**$20K - 14.9M**	**$5K - 10M**	**$20K - 4M**	**$26K - 6M**

Employees check peanut quality at a processing facility in Malawi. (TechnoServe)

What are Processors' Biggest Challenges Related to Raw Material Sourcing?

Collaboration with SME food processors across five program countries revealed six primary challenges they face related to sourcing raw materials for their products. While common across countries, some of these challenges are unique to SMEs, while others are shared by larger processors.

1. LIMITED ACCESS TO AFFORDABLE & PATIENT CAPITAL

Unlike larger enterprises, SME food processors struggle to access enough affordable and patient capital to be able to buy raw material in bulk from SHFs during harvest season, when prices are generally at their lowest due to high supply. This is largely because SMEs lack the collateral required by financial institutions — facilities, inventory, and other physical assets.

"Commercial banks are not for us."
— Foundational processor of sunflower cooking oil and rice in Malawi

While processors find the lowest prices from SHFs during harvest, SHFs require prompt payment — often cash on delivery – which presents a high capital outlay for SMEs. Limited access to capital also hinders SMEs' ability to invest in storage for their raw materials, adequate vehicles to transport larger volumes of raw materials from SHFs and to reach SHFs in areas with poor road infrastructure, and generators to prevent pauses in processing during frequent blackouts.

HOW THIS IMPACTS THE BUSINESS

"Raw material is always available; the issue is having the working capital to buy it."
— Transitional processor of soya pieces and corn snacks in Zambia

Unable to buy and store bulk raw material, SME processors are commonly forced to operate their processing lines significantly below capacity. This results in a higher cost per unit of finished product, smaller volumes produced, and missed sales opportunities. Processors must wait until they generate funds from sales to buy more raw material, which is more expensive outside of harvest season for locally consumed staples.

For example, in Malawi in 2023, the price of maize was MWK 550/kg through harvest in April and rose to MWK 700/kg in September. Despite this higher cost of production outside of the peak period, price-sensitive consumers deter processors from increasing prices. These factors limit profits, making it difficult for companies to attract the investment — with favorable terms — that they need for growth. In some cases, lack of adequate transportation may limit access to raw material volumes, contributing to underutilization of processing capacity, or may drive up sourcing costs when processors have to hire transportation. Further, in the absence of a generator, frequent blackouts cause processing disruptions that can impact an SME's capacity to buy up raw materials, negatively impacting their production — and revenues — as well as their relationships with SHFs in their supply chains. This is particularly a challenge for perishables such as milk and tomatoes, which require prompt processing.

"If our power goes out and we can't accept more tomatoes because production is interrupted, it's not good for the farmers."
— Transitional processor of tomato-based products and honey in Malawi

"We could grow more, but there are issues at [the buyer's] factory, and they can't buy up as much. If they don't buy, we have to sell to other vendors and don't get a good price."
— Tomato farmers in Malawi

2. INCONSISTENT QUALITY

Raw material *quality* refers to variety, size, color, density, moisture content, and/or condition (i.e., bruising, breakage, presence of fungi, pests, or foreign matter like sand or stones). Both SMEs and large processors face raw material quality challenges, though larger enterprises have greater financial muscle and volume demand to engage in contract farming or import to meet their quality requirements. The following factors contribute to raw material quality challenges:

- **Limited farmer knowledge of GAPs and post-harvest practices** including weeding, fertilizer and pesticide use, livestock husbandry, handling, sorting, and storage. Extension support to farmers is often inadequate, resulting in limited awareness and adoption of practices. In Zambia, the ratio of government extension officers to farmers is approximately 1:1,200, while the FAO recommends a ratio of 1:400.
- **High cost of inputs for farmers.** High costs for largely-imported inputs (seeds, fertilizer, pesticides, inoculants) — driven upward by interrupted supply chains and volatile exchange rates — makes them inaccessible to many SHFs. SHFs often lack the required collateral or are unable to meet financial terms to secure funding to purchase these inputs. In Tanzania, limited availability of inputs due to supply chain interruptions caused by the COVID-19 pandemic and the war in Ukraine pushed up the price of fertilizer by 30-35% and agrochemicals by 5-7% from 2020-2022.

"The materials to produce the high-quality tomato that [the buyer] wants are expensive. When we agree on a price with [the buyer], if the cost of inputs rises, our profit decreases."
— Tomato farmers in Malawi

Dairy farmers in Tanzania noted that the following challenges impact the quality of their milk: high cost and lack of proper storage for feed; limited knowledge of proper feeding; lack of access to reliable veterinarians, vaccinations, and medications; scarcity of water for cattle during droughts; and the high cost of milk cans, leading to use of less sanitary plastic containers.

- **Buying from multiple sources.** SMEs not engaged in contract farming may buy raw materials from aggregators, who collect from different sources with varying quality and varieties, or may aggregate materials themselves from different sources with varying quality and varieties.
- **Adulteration.** Processors note instances of farmers adding foreign substances to their products in an effort to make a sale or increase a sale's value. For example, dairy farmers have added maize or cassava powder and water to milk when processors are measuring it by density to meet processors' density specifications. Wheat farmers have mixed in rocks and other materials to increase the weight.

"We were buying spices from traders, but the quality was a mess; there was no traceability and sand was mixed in."
— Transitional spice & nutritious flour processor in Tanzania

HOW THIS IMPACTS THE BUSINESS

Inadequate post-harvest drying and storage practices — particularly for maize and peanuts — can lead to aflatoxin concentrations above safe thresholds, which can be fatal. This major food safety issue poses a risk to consumer health, reduces consumer confidence, threatens processors' access to domestic and export markets, and can lead to company shutdowns. Inconsistent raw materials lead to inconsistent end products, threatening consumer confidence and market access. Adulteration creates extra costs for processors when they have to discard contaminated materials or receive less-than-expected volumes, and it poses a risk to consumer health and confidence if adulterated products reach markets.

3. INADEQUATE QUANTITIES AVAILABLE

Both SMEs and larger processors face the challenge of getting the right quantity of good quality raw material. However, larger enterprises have the advantage of more resources to be able to pay a commission to agents or a mark-up to aggregators/traders to access raw materials year-round, or to purchase imported materials when they are scarce locally. Regarding imports, large companies can more easily absorb higher volumes and have the working capital necessary to take advantage of economies of scale, unlike many SMEs. The following factors contribute to raw material volume challenges:

» **Seasonality.** Most of Africa is unimodal or bimodal, with only one or two growing seasons per year. Proper irrigation might allow for additional short seasons, but farmers, particularly SHFs, lack this. As a result, fresh produce may only be available at certain times of the year.

For a transitional processor of sunflower cooking oil in Tanzania, low sunflower production by SHFs and high prices from aggregators due to high demand limit the company's ability to buy enough volume to sustain consistent production throughout the year.

» **Most SHFs depend on rainfed agriculture.** If rainfall is low, production is low. This problem is worsening as climate change drives unpredictable weather patterns. In Kenya, Kitui and Makueni counties in Eastern Province have frequent incidences of total seasonal rain failure.

"Irrigation is an issue. We want to do three seasons, but currently we're only able to do one because we depend on rainfall. We would like a solar irrigation system."
— Rice farmer Village Savings and Loan Association (VSLA) in Malawi

» **Limited knowledge of GAPs.** Inadequate extension support to SHFs results in a lack of awareness and adoption of yield-boosting good practices such as weeding, appropriate application of fertilizers and pesticides, and proper livestock husbandry. This lack of awareness and adoption contributes to low farm productivity.

"70% of the output is the farmer; 30% is the breed. Feed and housing are key."
— Transitional dairy processor in Tanzania

» **High use of recycled seed.** SHFs struggle with availability and affordability of certified seed; as a result, they resort to recycling seeds, which produce lower yields. In Zambia, it is common for commercial soybean farmers to export a portion of their high-grade seed for higher prices, creating a deficit in the local market.

"For the last five years, wheat has been scarce. We're nervous about where we'll get wheat in the future. Farmers are shifting to other crops — we're competing with breweries who give farmers seed and fertilizer for barley. We used to get 20,000 MT of wheat per year, but last season we got only 7,000 MT from farmers."
— Accelerator bakery in Tanzania

» **SHFs dedicate limited land to commercial production.** SHFs may use only a portion of their plot for commercial production, and reserve most of it for subsistence farming. This is the case for millet in Kenya, where SHFs deliver a very small percentage of the crop to cooperatives and aggregators to reach markets.

» **Limited availability of preferred varieties.** Processors may require a specific crop variety for a specialized product, but the variety may not be grown within the country, may be scarce, or may only be grown in specific regions of the country. For example, in Malawi, a particular aromatic rice variety is popular on the market but is only grown in specific areas. In Zambia, a processor of instant millet struggles to get sufficient quantities of the right variety.

» **Small farm size and lack of appropriate technologies limit mechanization.** Many SHFs use labor- and time-intensive production, harvesting, and primary processing methods. For grains like millet and sorghum, threshing and winnowing are often done manually. Producing small volumes, SHFs are unable to reach economies of scale that enable — and justify — investments in available modern technologies. Small volumes paired with lack of access to affordable technologies that meet their needs limits mechanization and growth.

» **Lack of farmer organization.** Limited coordination and cohesion among members of SHF cooperatives, due to issues like geographic spread and poor governance, impact the volume they are able to aggregate and, in turn, the volume available to processors.

“Farmer coops aren’t great. They were formed to be able to access inputs jointly, but they aren’t cohesive.”
— Transitional producer of soya pieces and corn snacks in Zambia

» **Gender productivity gap.** The significant productivity gap between men and women farmers, ranging from 13% in Uganda to 25% in Malawi, exacerbates the above challenges. Barriers to increased productivity for women farmers include limited access to credit, productive farm inputs (fertilizers, pesticides, tools, quality seeds), extension services and training, hired labor, and markets, in addition to childcare requirements and other factors.

HOW THIS IMPACTS THE BUSINESS

Processing machinery is set up to accept certain quantities of raw material. If processors cannot access enough raw material, they cannot run their machines. This results in lower production volumes, higher cost per unit produced given fixed costs like electricity, lower sales, and thus lower revenues. Despite an inconsistent supply, processors often cannot raise prices because customers are highly price sensitive. When domestic supply is limited, SMEs are often unable to import due to limited working capital and storage, and they cannot afford or absorb enough volume to achieve economies of scale. Highly reliant on local SHFs, limited local availability limits processors’ ability to sustain consistent production throughout the year.

A tomato farmer works on her farm in Kenya. (TechnoServe)

4. HIGH SOURCING COSTS

The cost of sourcing raw materials — the material itself, aggregation, transport, labor, gas, taxes, and more — is a significant challenge for SME food processors compared with larger enterprises that have greater capacity, working capital, and access to finance. The following factors contribute to high sourcing costs:

- **Inefficient aggregation.** Long distances between agents or farmers, small amounts of raw material aggregated per agent or farmer group, and lack of bulking centers can contribute to high sourcing costs. Half-full trucks, for example, prevent processors from achieving economies of scale.
- **Poor infrastructure.** Poor road networks and rough terrain along sourcing routes increase the distance, time, and gas required to procure raw materials. They also require more expensive vehicles that can handle the terrain, which processors can rarely afford due to limited capital; instead, processors often must hire transportation services.
- **Long distance from source.** In some cases, a raw material is only or mainly grown in a certain area of the country, far from a processor's manufacturing facilities. In Malawi, soybeans are mostly grown in hard-to-reach areas, resulting in costly sourcing logistics, namely fuel, personnel time, vehicle maintenance, or a hired vehicle and labor.

A foundational processor of common beans in Zambia sources from Northern Province, which is 650km (≈10 hours) from its processing facility in Lusaka.

- **Taxes and levies:** Import taxes and domestic levies drive up sourcing costs. For grain trade in Zambia, a ZMW 940/MT levy for trade across district boundaries is equivalent to ≈15-17% of the market price.
- **Climate, political, and forex shocks drive high market prices:** Local economic instability resulting from environmental and political shocks can shift raw material prices unpredictably and significantly. In Malawi, dry spells and drought combined with farmers' limited access to and ability to afford climbing fertilizer prices, have led to low production, in turn driving up the price of raw materials. Further, shifting foreign exchange rates can unpredictably drive up the cost of imported raw materials for processors, as well as the cost of inputs for farmers, which in turn increases raw material prices for processors. The price of fertilizer can be volatile, shifting with forex fluctuations and skyrocketing during supply chain crises like at the outset of the war in Ukraine. In Kenya, the average price of imported peanuts from Malawi increased from Ksh 127/kg in 2019 to Ksh 156.4/kg in 2021 (23% increase), at one point reaching Ksh 180/kg (42% increase).

HOW THIS IMPACTS THE BUSINESS

High sourcing costs translate to high costs of production and lower profit margins for processors, given their limited ability to raise prices to price-sensitive consumers. For SMEs with limited working capital and access to finance, higher sourcing costs may reduce the volumes of raw material they are able to buy at a given time, leading to underutilization of processing capacity, higher costs of production, lower volumes of finished product produced, and lower sales.

Employees offload fresh honey at a processing facility in Malawi. (TechnoServe / Christine McCurdy)

5. SIDE-SELLING

"We used to give farmers seed and chemicals, but there was an issue of side-selling. They said they couldn't pay because production was low. Farmers still owe us from last year."
— Accelerator bakery in Tanzania

Side-selling of raw materials by farmers impacts both SMEs and large processors. It is particularly a challenge in commodity value chains where there are many buyers. For example, grain processors in Zambia compete with high demand from grain traders that typically target export markets. There is also competition from local consumers and informal intermediaries who buy directly from farmers (e.g., maize, milk). Despite having signed contracts with processors, SHFs may side-sell to other buyers if a processor is unable to pay on time and in cash, if another buyer is offering a higher price, or to avoid payment deductions for inputs provided by a processor.

"Farmers want to be paid immediately. On-time payment is quite a good incentive."
— Transitional groundnut processor in Kenya

In many cases, contracts are non-binding in practice — there may be nothing legally preventing a farmer from side-selling — and/or there may be no system for processors to recover losses if investments in SHFs are not repaid. As a result, many processors and financiers are skeptical about input financing.

"There's a bit of side-selling; it takes time to build trust. A paper contract is weaker than a social contract. If you treat them well, they treat you well."
— Transitional processor of spices, tea, juice, and jams in Malawi

HOW THIS IMPACTS THE BUSINESS

Side-selling reduces quantities of raw material available to processors — potentially impacting volumes of finished product that the company can produce — and increases costs to the processor in the form of time and resources invested in SHFs (logistics planning, transport to/from the farm, inputs, etc.) in return for no — or less than expected — raw materials.

6. COMPETITION FROM GOVERNMENT, INTERNATIONAL COMPANIES, AND INTERNATIONAL NON-GOVERNMENTAL ORGANIZATIONS

Both SMEs and large food processors face competition from government, international buyers, and international non-governmental organization (INGOs) in accessing raw material for their products.

- **In Tanzania, wheat millers compete with the government**, which buys from farmers at a subsidized price and processes it, with the goal of controlling inflation rather than making a profit; processors struggle to compete with the subsidized price.
- **Also in Tanzania, maize and wheat millers note competition from Kenyan companies** that, as a result of the outsized impact of drought in Kenya, turn to Tanzanian villages for their maize and wheat supply and offer a price with which some Tanzanian processors cannot compete.

In addition to competition from breweries, an accelerator bakery in Tanzania notes Kenyans crossing the border for wheat.

- **In Zambia, some processors note that INGOs are participating under non-commercial terms,** setting a price floor for SHFs without demanding high quality. In addition to competition for materials, processors question what may happen when INGOs exit the local market, as raw material quality may not meet processors' specifications.

"[INGOs] need to collaborate with the private sector. They should buy up finished product, and they could help the private sector by asking farmers to improve quality."
— Foundational processor of common beans in Zambia

HOW THIS IMPACTS THE BUSINESS

Price distortions from government interventions and international competitors reduce the volumes of raw material available and accessible to local processors and drive up the cost per unit. Because processors are limited in their ability to increase the price of the final product to price-sensitive consumers, processors experience reduced margins.

Raw Material Sourcing Challenges by Value Chain (A)

The following table lists the major sourcing challenges for nine staple commodities, as expressed by client food processors and observed by AINFP staff. These challenges are organized under five of the six categories previously introduced: quality, quantity, cost, side-selling, and government and international competition. Access to capital is not included as a category, as the challenges are similar across commodities.

	QUALITY	QUANTITY	COST	SIDE-SELLING	GOV'T & INT'L COMPETITION
Maize 	**Aflatoxin contamination:** Maize is particularly sensitive to these fungi-caused toxins. SHFs often lack the knowledge and tools to test for it. **Mixed moisture contents:** SHFs and sometimes aggregators/traders lack tools to test for moisture content, and mix materials of varying moisture contents together. **Adulteration:** Farmers may add substances (stones, dirt) to increase the weight to receive higher payment.	**Seasonal availability:** For example, in Tanzania, maize is cultivated during only one season, from May to June. **Low/inconsistent production:** In 2023, maize production was low in Malawi due to rainfall fluctuations, leading to low availability for processors.	**Rainfall fluctuations:** Rainfall fluctuations in Malawi in 2023 resulted in low maize volumes, leading to increased prices.	A particular challenge in the maize value chain, where there are many buyers.	**Cross-border competition:** In Tanzania, maize millers note competition from Kenyan companies who – as a result of the outsized impact of drought in Kenya – have turned to Tanzanian villages for their maize supply.
Wheat 	**Aflatoxin contamination:** Wheat is susceptible to the toxins, though less so compared to maize or peanuts. **Mixed varieties:** SHFs, aggregators, and traders may mix hard and soft wheat varieties. Different end products require specific wheat varieties, e.g., biscuits and pasta require hard wheat, while bread requires soft wheat. **Adulteration:** Like maize, farmers may add stones and other unwanted materials to increase the weight and receive higher payment.	**Low/inconsistent production:** In Tanzania and Malawi, processors rely heavily on imported wheat. In Tanzania, millers compete with breweries that give SHFs inputs to produce barley, and SHFs are shifting to other crops such as pulses, pigeon peas, maize, and sunflower. **Supply chain disruptions:** The war in Ukraine has reduced the amount of wheat available in the market.	**Supply chain disruptions:** Reduced availability of wheat in the market due to the war in Ukraine has pushed up wheat prices for processors.	A particular challenge in the wheat value chain, where there are many buyers. Zambian millers compete with traders targeting export markets in Southern Africa and beyond.	**Government-subsidized prices:** The Tanzanian government buys wheat from farmers at a subsidized price and processes it to control inflation vs. making a profit. Processors struggle to compete with the subsidized price.
Milk 	**Spoilage and contamination:** Raw milk must be cooled and processed within 4-8 hours of milking to maintain its quality and is highly susceptible to poor handling. **Adulteration:** When processors set a density requirement for purchasing raw milk, farmers may add maize or cassava powder and water to their milk to meet the requirement. There have also been cases of traders adding antibiotics to raw milk. **Other:** Quality challenges may also result from animal disease, poor feeding practices, mastitis, and antibiotic use. This can result in milk with lower nutritional value and high safety concerns.	**Low/inconsistent production:** In Zanzibar, Tanzania, low SHF production has led some processors to import powdered milk to combine with local milk. Poor feeding practices and lack of proper shelter for cows can result in low production. A processor in Tanzania mentioned visiting a farmer in Kenya with two cows producing 48L/day, while in Tanzania some suppliers with two cows were producing only 8L/day.	**High/fluctuating input costs:** In Kenya, production costs are high at both farm and processor level due to the high cost of feeds, fodder, and fuel.	In Kenya, side-selling to individual traders who offer daily payments to farmers remains a challenge.	
Soya 		**Export crop:** In Ethiopia and Malawi, soya is an export crop (gets hard currency) and thus not as accessible on the open market. This creates high competition among local processors and impacts local oil, corn soy blend (CSB), and soy meal production. **Low/inconsistent production:** In Malawi, volumes do not meet the needs of most processors, particularly large ones. Limited use of productivity improving soil inoculants results in low yields. In Zambia, soya was not commonly grown until the last few years. Kenya is a net importer of soya bean and soya-based products due to low local production. **Grown in limited areas:** In Malawi, soya is mostly grown in hard-to-reach areas, logistically difficult for processors to access.	**Expensive crop:** In Zambia, soya is a high value crop, requiring a significant cash outlay from processors. SHFs may also hold the crop after harvest to wait for the price to rise. **Costly transport:** In Zambia, soya is mainly transported by road (vs. rail), an expensive mode of transport.	A particular challenge in the soya value chain, where there are many buyers. Zambian millers compete with traders targeting export markets in Southern Africa and beyond.	
Millet 	**Use of uncertified seed:** Millet production is dominated by SHFs who often use uncertified seed, resulting in lower-quality, mixed varieties. **Poor post-harvest practices:** In Kenya, the value chain is too underdeveloped to incentivize support service providers to enter the value chain.	**Limited commercial production:** In Kenya, millet is largely a subsistence crop; only a small portion of production reaches markets. Few farmers grow it and, when they do, it is on a small plot despite farmers having more available land. Small volumes make sourcing logistics costly for processors. In Zambia, millet is just becoming commercialized and SHFs are learning how to grow it to processors' quality specifications.			

Raw Material Sourcing Challenges by Value Chain (B)

The following chart lists the major sourcing challenges for nine staple commodities, as expressed by client food processors and observed by AINFP staff. These challenges are organized under five of the six categories previously introduced: quality, quantity, cost, side-selling, and government and international competition. Access to capital is not included as a category, as the challenges are similar across commodities.

	QUALITY	QUANTITY	COST	SIDE-SELLING	GOV'T & INT'L COMPETITION
Sorghum 			**Costly aggregation:** In Kenya, where sorghum is used for commercial industrial use (beer) as well as consumption, many SHFs produce in small amounts. Challenging logistics make it difficult for SHFs to achieve economies of scale.	A particular challenge in the sorghum value chain, where there are many buyers.	
Peanut 	**Aflatoxin contamination:** Like maize, peanuts are particularly sensitive to these toxins. SHFs often lack the knowledge and tools to test for it. **Poor post-harvest practices:** Manual shelling may lead to high breakage, and soaking shells in water to soften them and ease the hand shelling process can result in high moisture content and eventually aflatoxin contamination. **Mixed varieties:** Mixing of peanut sizes is particularly unfavorable for products like roasted peanuts.	**Low/inconsistent production:** In Tanzania and Kenya, low production creates high competition among processors and leads them to import from Malawi to supplement local SHF production. Even in Malawi, a larger AINFP client reported struggling to find the right quantities of peanut locally.			
Common Beans 		**Limited production:** In Zambia, not many farmers produce beans. **Seasonal availability:** In Zambia, while the extreme Northern Province (≈60% of production) has at least two growing seasons, others have only one. Out of season, processors struggle to find enough product.			
Rice 	**Mixed varieties:** In Malawi, some farmers mix varieties together to achieve large enough volumes to supply processors.	**Limited production of specific varieties:** In Malawi, a particular aromatic variety is popular on the market, but it is only grown in specific areas. A larger AINFP client reported struggling to obtain sufficient quantities for its operations. **Low/inconsistent production:** SHFs practicing rainfed agriculture face flooding and prolonged dry spells, which have become more frequent.			

How are Processors Sourcing Raw Materials?

SMEs and large processors commonly use a mix of sourcing channels to procure raw materials for their products, known as blended sourcing. Common channels, described on the following pages, include individual SHFs, SHF groups or cooperatives, local aggregators/traders, agents/brokers, diversified traders, open markets, commercial farms, and importers.

Some processors rely heavily on a single channel. For example,

» Soy processors in Tanzania operate in an environment where the government controls procurement and the crop is only formally available through certified warehouses.

» Wheat processors in Zambia buy from commercial farms to get the quality they need — a quality that local SHFs are unable to meet.

» Dairy processors across all five countries buy directly from SHFs because fresh milk has to be processed within 4-8 hours to maintain its quality.

However, many processors diversify their sourcing channels to spread risk and ensure sustainability; access necessary volumes; and balance quality, cost, and flexibility of payment terms, among other reasons. For example,

» In Tanzania, an accelerator bakery buys ≈60% of its wheat from commercial farms, ≈25% through brokers, and ≈15% from SHFs via cooperatives; while SHFs are not able to supply nearly the total amount of wheat the company requires, the company believes there is high sustainability in working with SHFs.

» In Tanzania and Kenya, no peanut processor relies fully on SHFs due to low production volumes and high prevalence of aflatoxins; they supplement supply from SHFs with imports from Malawi.

» A transitional soya pieces and corn snacks processor in Zambia plans to pilot a SHF outgrower scheme for better control over quality; however, it is expensive to provide inputs to SHFs. Therefore, the company will maintain a blended model, including smaller aggregators who require cash payment and larger aggregators when they need an extended credit line.

» For any size maize processor in Tanzania, a common blended model is 40-50% from traders and the rest directly from SHFs; this is largely due to the high cost to collect from SHFs as a result of poor infrastructure, scattered SHFs, very few SHF groups, and to leverage traders' working capital.

AINFP observed general trends across countries in the channels used by SME processors to buy raw materials vs. those used by larger enterprises. SME processors most often buy directly from SHFs during harvest season (mostly individual SHFs if located nearby — in which case they may set up aggregation centers — and some from farmer cooperatives), and/or the company's own purchaser buys in open markets. Large processors commonly source from diversified traders and importers; agents/brokers; commercial farms; or contract farming with SHF groups for high value export crops.

The following table summarizes the common sourcing channels for SMEs and larger processors by country.

Common Sourcing Channels for SMEs and Larger Processors by Country

	ETHIOPIA	KENYA	MALAWI	TANZANIA	ZAMBIA
SMEs	**Individual SHFs, SHF cooperatives,** and **open market/wholesalers** by the company's own purchaser. *Sometimes* **agents.**	**SHF groups, SHF cooperatives,** and **local aggregators/traders** who collect from SHFs. *Sometimes* **importers.**	**Individual SHFs and SHF groups.** Set up aggregation centers if located nearby SHFs.	**Individual SHFs** during harvest season. *Some* **contract farming**.	**Individual SHFs; SHF groups** and **cooperatives; local traders.**
Large	Mostly via **agents/ brokers** to procure larger volumes; *rarely see blended* sourcing models.	**Contract farming, large farmer cooperatives, diversified traders, importers.**	**Large cooperatives** and **diversified traders and local aggregators/ traders.** *Some* **commercial farms** for maize and soy. *Some* **importers.**	**Contract farming** for quality and conformity, especially for exports, and **diversified traders and some local aggregators/ traders** to supplement, if there is a deficit.	Well-established **SHF groups and cooperatives; contract farming; diversified traders and some local aggregators/trader** and **commercial farms.**

The following is a brief explanation of each common sourcing channel and the key benefits and drawbacks of each.

INDIVIDUAL SHFS

SME processors often buy directly from individual SHFs, both with and without formal contracts. It may be a purely transactional relationship, or — particularly when there are contracts — the processor may provide additional services to farmers, such as inputs on credit or serving as a guarantor for farmers to access finance and inputs via a tripartite model with financial institutions and input suppliers. (See more below under "What makes a processor-SHF relationship work well?")

Common processor-farmer engagement models include:

- **outgrower schemes** where processors provide seed on loan to farmers and deduct the cost when they buy at harvest time;
- **farmers cultivate company-owned land,** which may reduce the risk of side-selling and enables farmers to use their own land for other crops;
- **processor trains the farmers, but aggregators collect the raw materials** on behalf of the processor; and
- **warehouse receipt financing** where a processor lets farmers store crops in the company's warehouse for free, gives them a percentage of the value of the stored crops to buy inputs for the next season, and pays farmers for the rest when they are ready to sell, enabling farmers to get a better price and access inputs while giving processors access to the volumes they need.

Maize and coffee farmer in Ethiopia. (TechnoServe)

PROS

★ **Price:** Processors typically access the lowest price buying directly from SHFs during harvest season, compared to buying from aggregators or traders who add a margin to the price. During harvest, SHF supply is at its highest and SHFs want to sell quickly to pay for family expenses like school fees.

★ **Traceability:** When traceability is required and processors make the necessary investments, processors can benefit from higher prices in export markets.

★ **Value for money:** Processors can obtain good quality raw materials at market price through a strong and supportive relationship with SHFs. While many traders deliver high quality, they also make processors pay for it via an added margin.

CONS

× **Quality:** Limited access to knowledge and training can lead to quality challenges, such as aflatoxin contamination in maize and peanuts when moisture content is high at harvest.

× **Volumes:** Many SHFs are rainfall dependent. Low rainfall levels can lead to low production.

× **Costly mobilization and management:** Mobilizing and managing SHFs can require significant investment including inputs (fertilizer, inoculant, seed), training and agronomic support, setting up collection centers, etc. The arrangement may require processor representatives to be on-the-ground to ensure quality and may require investment beyond the business, such as motorbikes to reach farmers in hard-to-reach locations.

× **Transportation costs:** Processors may need to collect raw materials from widely dispersed SHFs, and aggregation can be expensive.

× **Sustainability:** If a SHF is not profitable in a particular crop, they may pivot to another crop.

× **Side-selling:** When a processor provides additional services to SHFs, it is not guaranteed that SHFs will sell to that processor. If another buyer offers a higher price or can pay quicker and in cash, SHFs may side-sell. They may do so to meet urgent needs, such as school fees, or to avoid payment deductions for services provided by the processor.

FARMER GROUPS & COOPERATIVES

While SME processors buy from farmer groups — *informal* community organizations operated by farmers themselves — *and* formalized farmer cooperatives, larger processors mostly buy from formalized cooperatives. Relationships with farmer groups and cooperatives are typically based on contracts and may be purely transactional or accompanied by additional services from processors, similar to the model previously described under "Individual SHFs". Groups and cooperatives may be engaged by processors as **outgrowers**, where processors provide inputs on loan and commit to purchasing the volumes that are produced, or processors may be one of several clients to which a group or cooperative sells.

Peanut producers from a farmer group in Zambia. (TechnoServe / Kaaren Nghl)

PROS

- ★ **Price:** Processors may find lower prices from SHF groups vs. individual SHFs, as groups may achieve economies of scale by purchasing inputs together in bulk, therefore reducing their unit cost of production. Processors can also negotiate the price in advance.
- ★ **Volumes:** Processors access larger volumes from SHF groups and cooperatives whose members aggregate their individual produce.
- ★ **Higher efficiency, lower cost of training:** Producers can communicate and coordinate training through the leaders of SHF groups and cooperatives, rather than communicating with and mobilizing individual SHFs. This makes it more efficient to organize and lowers the cost per farmer to organize the training.
- ★ **Mechanization:** Groups and cooperatives may have their own equipment, such as threshers, and their own cold chain, enabling them to add value to and preserve the quality of their produce.
- ★ **Quality:** Compared with individual SHFs and traders, cooperatives and farmer groups are more likely to supply a single variety of a crop vs. mixing varieties. Their members are in the same or a similar location and likely grow the same variety.
- ★ **Minimal side-selling:** Processors and SHF groups and cooperatives commonly agree on volume, quality, and price specifications, which are often legally documented in a contract.

CONS

- × **Quality:** For cooperatives lacking quality control capabilities, systems, and testing equipment, if a member contributes adulterated milk to the collective supply, it can adulterate the group's entire supply.
- × **Governance challenges:** Groups and cooperatives with inexperienced and untrained leaders and/or leaders looking to serve their own interests may limit group cohesion, coordination, and ability to meet buyers' expectations.

LOCAL AGGREGATORS/TRADERS

Both SMEs and larger processors source from local aggregators/traders, who buy up raw materials from nearby producers, including individual farmers, groups, and cooperatives. The aggregators/traders then sell the raw materials directly to various processors.

PROS

★ **Quality:** Local aggregators/traders are often able to provide consistent raw material supply at the desired quality.

★ **Volumes:** Aggregators/traders make it possible for processors to get the quantities they need in one place, maximizing efficiency.

★ **Reduced cost of operations:** Buying materials from a single source and leaving farmer communication and aggregation up to the aggregators/traders can reduce the time and resources required from a processor to procure raw materials.

CONS

× **Price:** The price of raw materials is generally higher when buying from aggregators/traders compared to buying directly from SHFs, SHF groups, or cooperatives, as aggregators/traders add a price margin for their services. During the lean season, it can be particularly expensive to buy from them as demand is high while supply is low.

× **Sustainability:** Aggregators/traders are generally not farming and do not own the farmland. A processor may buy from them today, but tomorrow they might not be there. It is also possible that SHF groups may decide that they no longer want to sell to aggregators/traders.

× **Quality:** As aggregators/traders combine materials from various sources, they may mix varieties and levels of quality.

× **Often a transactional relationship with farmers:** Without a direct connection to SHFs, processors have little influence over the quality and volumes of raw material that SHFs produce.

AGENTS/BROKERS

Agents or brokers are businesspeople who are independently employed and often not licensed. They discuss with processors the volumes and specifications that they need, then talk to suppliers, negotiate a price, and take a margin. Agents/brokers are mostly used by large and mid-size companies vs. smaller companies; small processors may find the mark-up prohibitive, or brokers/agents may not be willing to do business with them due to the small volumes they need and the relatively small margin the agent would earn from the deal.

PROS

★ **Quality:** Agents know that higher quality raw materials can earn them a better price from processors.

★ **Volumes:** Equipped with information from a processor re: the volumes and quality they require, agents/brokers are typically able to aggregate sufficient volumes of raw material that meet the processor's quality specifications.

CONS

× **Price:** The mark-up by agents/brokers for their services results in a higher price to processors for the raw materials.

× **Quality:** As they may gather raw materials from various sources to reach the volumes requested by processors, agents may mix together different crop varieties. They may also lack equipment to test for contamination or adulteration.

DIVERSIFIED TRADERS

These traders typically deal in a range of commodities, such as grains, peanuts, and soybeans. They handle large volumes of product and typically target larger processors with higher volume and quality needs. Diversified traders are often engaged in importing commodities, particularly from within their region, though importing tends to be just one aspect of their business model.

PROS

- ★ **Flexible payment terms:** These large traders generally have significant cash flow from working with high volumes of raw material. As a result, they can offer processors longer payment timelines and accept payment on credit.
- ★ **Quality:** Diversified traders often have the appropriate equipment to test the quality of raw materials before purchasing from farmers, and have proper storage facilities to maintain quality after purchasing. They are also aware of the quality specifications they need to deliver to meet the needs of their clients, who are often larger processors in high-margin markets.
- ★ **Volumes:** Because these traders generally have the working capital to buy up bulk volumes of raw material, including imports, and because they have storage facilities with large stock holding capacity, processors can typically rely on them for supply outside of harvest season and when local production is low.

CONS

- × **Price:** Particularly for imported raw materials, price may vary based on forex fluctuations. Processors also pay for the storage and flexible payment terms.
- × **Transactional relationship with farmers:** Without a direct connection to SHFs, processors have little influence over the quality of raw material that SHFs produce.
- × **Risk of cross-border policy changes:** Cross-border sourcing may be affected by policy changes resulting from political conflicts, health concerns, etc.

OPEN MARKET

A processor may have its own purchaser, employed by the company to go to wholesale markets, identify locally grown and/or imported crops that meet the company's specifications and negotiate prices. The company transports the raw materials itself to the factory.

PROS

- ★ **Volumes:** Outside of harvest time, or if local production is low, processors are still able to access raw materials.
- ★ **Flexible payment terms:** Wholesalers generally have significant cash flow from working with high volumes of raw material and can offer processors longer payment timelines and accept payment on credit.

CONS

- × **Price:** The mark-up by wholesalers and vendors results in a higher price for raw materials paid by processors, compared to direct sourcing from SHFs, SHF groups or cooperatives.
- × **Quality:** Because wholesalers and open market vendors do not specifically target high-value markets — and may lack proper equipment to test for quality — processors may find mixed crop varieties and quality levels.

COMMERCIAL FARM

Commercial farming of food crops is uncommon across AINFP's countries of operation, with production heavily dominated by SHFs. Exceptions include wheat in Tanzania and Zambia; soybeans in Zambia; some maize and soybeans in Malawi; and some maize and wheat In Ethiopia. In Kenya, commercial farms produce certain elements, such as the right fat content for butter and cream, which is blended with milk from SHFs.

PROS

- ★ **Quality:** Commercial farms generally have sufficient resources and/or access to financing to invest in quality inputs (feed, seeds, fertilizers), and have proper storage to maintain the quality of raw materials.
- ★ **Volumes:** In part because they can invest in quality inputs, commercial farms are generally able to produce bulk volumes consistently, compared with SHFs, SHF groups, or cooperatives.
- ★ **Flexible payment terms:** Commercial farms generally have significant cash flow from producing large volumes and can offer processors longer payment timelines and accept payment on credit.

CONS

- × **Price:** Pricing from commercial farms that target export markets (e.g., soya in Zambia) may be pegged to foreign currencies, making it more expensive for local processors to buy.
- × **Potential preference for larger buyers/export markets:** If domestic prices are not competitive with export prices, commercial farms may choose to sell exclusively to export markets or may sell only to larger domestic buyers.

IMPORTER

In Tanzania and Malawi, millers rely largely on imported wheat. In Tanzania, awareness of wheat production is low among SHFs, and they are unable to keep up with the large and growing demand for wheat, particularly for making chapati. In both Tanzania and Kenya, peanut processors rely on imports from Malawi, as SHFs are not growing large volumes of peanuts and aflatoxin contamination is prevalent. Kenya also largely imports soybeans and millet, as well as some sorghum. Zambia is nearly self-sufficient, importing maize only when there is a shortage, and imports are similarly uncommon in Ethiopia because the government has historically controlled forex, making it challenging for processors to access to be able to import.

PROS

- ★ **Quality:** In order to supply export markets — and earn higher prices — farmers in exporting countries invest in certified seeds and mechanization, producing quality produce.

CONS

- × **Price:** Importing processors may experience forex losses due to uncontrollable forex fluctuations, as well as increasing tariffs.
- × **Availability risks:** Geopolitical factors, such as wars and trade embargos, may impact raw material availability.
- × **Limited supply:** Processors not considered key clients by importers may be overlooked if there is short supply.
- × **Risk of shifting government policy:** Government may increase taxes on imports of a particular commodity to support local production, impacting processors who heavily rely on imports for their raw material supply.

Raw Material Sourcing Channels by Value Chain (A) | The following table lists the common channels used by each SME food processor segment in each AINFP country of operation to source nine staple commodities.

F = FOUNDATIONAL | T = TRANSITIONAL | A = ACCELERATOR

	SOURCING TRENDS	COUNTRY	INDIVIDUAL SHFs	SHF COOPERATIVES / GROUPS	LOCAL AGGREGATORS / TRADERS	AGENTS/ BROKERS	DIVERSIFIED TRADERS	OPEN MARKET	COMMERCIAL FARM	IMPORTER	COUNTRY NOTES
MAIZE	Maize mainly from **individual SHFs, SHF cooperatives/ groups, traders,** and **agents/ brokers**. Additionally, *foundational* enterprises source from **open markets**, while *accelerator* enterprises source from **commercial farms** and in some cases **importers**.	ETHIOPIA	F	F, T, A	F, T, A	F, T, A		F, T	A		Cooperative unions (groups of cooperatives)
		KENYA	F, T	F, T, A	F, T, A	F, T, A	F, T, A	F	A	T, A	When prices are low during harvest season, sourcing from agents/brokers and diversified traders is an option for all SME processor segments.
		MALAWI	F, T	T, A	T, A		T, A	F	A	A	
		TANZANIA	F, T	T, A	F, T, A	T, A	T, A	F, T			Common for any size processor to diversify sourcing between traders and SHFs. While it is costly to collect from scattered SHFs, few SHF groups exist.
		ZAMBIA	F, T	F, T, A	T, A			F	T, A	A	
WHEAT	Wheat mainly from **SHF cooperatives/ groups, local traders, commercial farms,** and **importers.** A sensitive crop, it is often difficult for SHFs to produce the quality and volumes required by processors.	ETHIOPIA	F	F, T, A	F, T, A	F, T, A	F, T, A	F, T, A	A	F, T, A	Cooperative unions
		KENYA		F, T, A	F, T, A				T, A	A	
		MALAWI								F, T, A	
		TANZANIA	T, A	T, A	T, A		T, A		A	A	Consolidated industry, with 1 processor purchasing a majority of the wheat produced in the country. No small (foundational) processors. Insufficient volumes and quality produced by local SHFs.
		ZAMBIA			A				A	A	High demand for quality (for chapati), but low SHF capacity. Only accelerator processors.
MILK	Milk mainly from **individual SHFs, SHF cooperatives/ groups,** and **local traders** *for any size processor.* A short supply chain is critical for preserving quality.	ETHIOPIA	F	F, T, A	F, T, A			F, T, A			
		KENYA	F, T, A	F, T, A	F, T, A	F, T, A	T, A		A		Though less common, some processors use traders to avoid farmer contracting or to fill volume gaps. Traders may buy back pasteurized milk from processors to sell directly to consumers.
		MALAWI	F, T, A	F, T, A							"Milk packing groups" have chilling facility and cooling tanks.
		TANZANIA	F, T	F, T, A	F, T, A		T, A		A		Cooperatives, farmer associations, collection centers
		ZAMBIA	F, T, A	F, T, A							
SOYA	Soya commonly from **individual SHFs, SHF cooperatives/groups,** and **local traders,** with transitional and accelerator processors also buying from **agents/ brokers, commercial farms,** and **importers.**	ETHIOPIA	F, T, A	F, T, A	F, T, A	T, A			A		Challenging for cooperatives to aggregate
		KENYA	F	F, T	T, A	T. A				T, A	
		MALAWI	F, T	T, A	T, A		A		A	A	
		TANZANIA	F, T		T	T, A	T, A	T		T, A	Government controlled; buy via auction at certified warehouses; *informal* purchases from individual SHFs. Most soya is imported from Malawi and Zambia.
		ZAMBIA	F, T	F, T, A	T, A			F	T, A		Majority by commercial farms

Raw Material Sourcing Channels by Value Chain (B) | The following table lists the common channels used by each SME food processor segment in each AINFP country of operation to source nine staple commodities.

F = FOUNDATIONAL | T = TRANSITIONAL | A = ACCELERATOR

	SOURCING TRENDS	COUNTRY	INDIVIDUAL SHFs	SHF COOPERATIVES / GROUPS	LOCAL AGGREGATORS / TRADERS	AGENTS/ BROKERS	DIVERSIFIED TRADERS	OPEN MARKET	COMMERCIAL FARM	IMPORTER	COUNTRY NOTES
MILLET	Millet mainly from **individual SHFs, SHF cooperatives/ groups,** and **local traders.** Additionally, foundational enterprises commonly source from open markets.	ETHIOPIA									Common food, but processors are not using it.
		KENYA	F	F, T, A	F, T, A	T, A	T, A	F		T, A	Mostly traders importing from Tanzania and Uganda.
		MALAWI	F	T, A	T, A						Grown in specific areas, but not a common crop.
		TANZANIA	F, T	A	T, A	T, A	T, A	F, T			
		ZAMBIA	F, T	F, T, A	T, A			F			Not commonly grown
SORGHUM	Sorghum mainly from **individual SHFs, SHF cooperatives/groups, local traders,** and **open markets.**	ETHIOPIA	F, T, A	F, T, A				F, T, A			
		KENYA	F, T, A	F, T, A	F, T, A	T, A	T, A	F		T, A	Costly aggregation from many SHFs. Some imports from Tanzania and Uganda.
		MALAWI	F	T, A	T, A						Grown in specific areas, but not a common crop.
		TANZANIA	F, T	T	T		T	F, T			Mostly subsistence; rare to find commercial processors. No accelerator sorghum processors.
		ZAMBIA	F, T	F, T, A	T, A			F			Not commonly grown
PEANUTS	Peanuts commonly from **individual SHFs, SHF cooperatives/groups,** and **local traders**. Additionally, foundational and transitional enterprises buy from open markets while transitional and accelerator enterprises buy from importers. Low production in Kenya and Tanzania and prevalence of aflatoxins lead to importation from Malawi.	ETHIOPIA	F, T, A	F, T, A	F, T, A	F, T, A		F, T	T, A		
		KENYA	F, T	F, T, A	F, T, A	T, A	T, A			T, A	Low volumes and aflatoxins from SHFs; import from Malawi.
		MALAWI	F, T	T, A	T, A						
		TANZANIA	F, T	T	F, T		T	F, T		T, A	Low volumes and aflatoxins from SHFs; import from Malawi. Mostly transitional processors.
		ZAMBIA	F, T	F, T, A	T, A	A		F, T	A	A	
COMMON BEANS	Common beans mainly from **individual SHFs, SHF cooperatives/groups, local traders,** and **open markets.**	ETHIOPIA		F, T, A	F, T, A			F, T A			
		KENYA	F	F, T	T	T, A	T, A	F			
		MALAWI	F	T, A	T, A						
		TANZANIA	F, T	F, T	F, T		T	F			Processing of beans is uncommon; most consumers purchase in traditional markets. Processors are smaller (foundational and transitional) and mill/ package beans as nutritious flour.
		ZAMBIA	F, T	F, T, A	T, A	A		F, T	A	A	
RICE	Rice mainly from **individual SHFs, SHF cooperatives/ groups,** and **local traders.** Additionally, *foundational* enterprises source from **open markets**, while *accelerator* enterprises source from **agents/ brokers, commercial farms** and **importers.**	ETHIOPIA	F	F, T	T, A			F			
		KENYA	F	F, T	T, A	T, A	T, A	F		A	Mostly imported.
		MALAWI	F	F, T, A	T, A				A		
		TANZANIA	F, T	T, A	F, T, A	T, A	T, A	F	T, A	A	
		ZAMBIA	F, T	F, T, A	T, A	A		F, T	A	A	

When is it Desirable for SME Processors to Source Directly from SHFs?

By working alongside SME food processors to strengthen their raw material sourcing models, AINFP aimed to unlock business growth and generate financial benefits for SHFs. Through achieving this, the program strove to improve livelihoods, spur local economic development, and increase the availability of safe, nutritious food. Sourcing directly from SHFs may not be desirable — or even possible — for every SME food processor; however, working with client companies, AINFP sought to better understand what drives their decision to source from SHFs.

This section explores the top reasons why AINFP clients source from SHFs, either for a portion or for all of their raw material supply. It then highlights the top reasons why processors may *not* source from SHFs. By understanding these drivers, initiatives can better channel their support to value chains and processors that demonstrate strong potential to positively and meaningfully impact SHF livelihoods.

✔ *WHY SME PROCESSORS INVEST IN SHF SOURCING MODELS*

1. COST & QUALITY ARE FAVORABLE

When SHFs are able to meet a processor's quality requirements and the total cost of procurement (raw materials plus farmer mobilization, farmer support, aggregation, transportation, etc.) is favorable compared with other channels, a company will often choose to buy from them. To keep total procurement costs down, processors suggest working with farmer groups or cooperatives vs. individual farmers where possible; working with existing groups rather than forming new ones; and linking up with partners (e.g., organizations that are supporting farmers on production) to share costs and responsibilities.

"We used to buy from aggregators. Now we buy from SHFs and supplement with aggregators. When we buy from SHFs, raw materials are not mixed in. Middlemen mix in other products like sand to improve their profits, creating a loss for us. And aggregators top up their price. Even with logistics costs, it's better pricewise to buy from SHFs."
— Transitional sunflower cooking oil and nutritious flours processor, Tanzania

"Identifying existing stakeholders is key. There are many partners trying to support farmers, mainly on production. When they find a commercial partner, it's good for them and it's good for us – it's cheaper for us to partner; we don't incur as much cost for farmer grouping and mobilization."
— Transitional peanut processor, Kenya

2. TRACEABILITY IS CRITICAL

Traceability of raw materials is especially important in dairy and horticulture export markets, which often require processors to have a direct contractual relationship with farmers. Sourcing from agents or aggregators may not meet the strict quality specifications for export markets; as a result, processors may work directly with SHFs, providing them with the necessary training, equipment, etc. to ensure quality.

"We were buying spices from traders, but quality was a mess – no traceability, sand was mixed in, and it was expensive. Buying from farmers is cost-effective. We are still buying the cereals for our flours from traders, but quality is an issue. We want to improve by starting to work with farmers for our cereals, too."
— Transitional spices and nutritious flours processor, Tanzania

3. RAW MATERIAL HAS SHELF-LIFE LIMITATIONS

Raw materials that spoil quickly — namely milk, tomatoes, and other sensitive horticultural crops — necessitate a quick transfer from farm to factory to preserve quality, vs. purchasing through middlemen. For example, milk must be cooled and processed within 4-8 hours of milking to maintain its quality. As a result, processors often source directly from local SHFs.

4. CROP IS *NOT* COMMONLY GROWN IN THE COUNTRY

If a crop is uncommon in a particular country and it is financially beneficial and/or part of the company's mission to source locally vs. importing, a processor may need to work closely with local SHFs to start producing the crop and to meet the processor's quality specifications. This is the case for millet in Zambia and peanuts in Kenya, among other examples. A client

in Zambia who was already buying white maize and cassava from SHFs shared that farmers were willing to diversify into millet and orange maize for the company.

"Millet isn't yet commercialized in Zambia; our company has done it. We set up new farmer groups. Farmers don't know how to grow it to quality, so we train them on how to grow it. We employ two extension officers and engage with government extension."
— Foundational processor of millet, cassava, sorghum meal, and CSB porridge, Zambia

5. CROP IS *ONLY* GROWN IN CERTAIN REGIONS OF A COUNTRY

A crop may only be cultivated in certain areas of a country, such as with cassava and beans in Zambia, and these regions may be located far from processing facilities. The presence of agents/traders for these crops near the processing facilities may be limited, and/or securing a supply of the crop from the distant regions may require a direct relationship with SHFs or partners working closely with them.

6. PROCESSOR REQUIRES A PARTICULAR CROP VARIETY

Processors who need a certain crop variety for specialized food products may work closely with SHFs to ensure availability and quality of the variety. For example, a Zambian processor of instant millet provides SHFs inputs and training to grow the right variety. In Malawi, a rice processor provides inputs to SHFs for a more aromatic rice variety that has high market demand.

7. SIGNIFICANT IMPORTATION RISKS

"With local farmers, we know how much is required to acquire our raw material. We can control the price, whereas it used to fluctuate so much with imports."
— Transitional peanut processor, Kenya

Interrupted supply chains — as seen during the COVID-19 pandemic and the war in Ukraine — and volatile forex fluctuations, pose significant risks to processors that rely on imported raw materials. This unpredictability impacts both the availability and price of raw materials. As the risk from reliance on imports grows, processors may shift to local sourcing. This likely involves working with SHFs, assuming the company was previously unable to get the volumes and/or quality it needed locally.

8. SUSTAINABILITY/DIVERSIFICATION OF SUPPLY CHANNELS

Processors may choose to source from SHFs for company sustainability. They may want to diversify their supply channels to avoid over-reliance on a single channel, adopting a "blended" or multi-channel sourcing strategy. For example, they may see vulnerability in buying solely from aggregators and brokers who collect a variety of crops, vs. SHFs who cultivate a specific crop; if aggregators and brokers begin to generate profit from a different crop, it is possible that they could shift their efforts to focus on the more profitable crop.

One processor in Tanzania sees the sustainability of working with local SHFs via cooperatives, despite them being unable to provide the amount of wheat the company needs. To achieve a diversified portfolio of suppliers, the company sources 15% of its wheat from SHFs, 60% from mid-and large-scale farmers, and 25% from brokers.

9. CENTRAL TO THE COMPANY'S MISSION

"We started as a solution for local dairy farmers. Before, processors wouldn't buy up; farmers sold some to vendors and had to throw some away. How could we best preserve milk when processors and vendors had reached capacity?"
— Foundational powdered milk processor, Malawi

Supporting SHFs may be the mission of a processing company, important to company leadership, and/or seen as critical to a company's social license to operate. Therefore, companies source some or all of their raw materials from SHFs. This approach should be carefully managed, as financial challenges may result if there is no diversification of sourcing channels.

"We liked farming and started training people, but we realized that just farming wouldn't help the trainees much if they didn't have a market. So, we decided to become the market. We've been approached by commercial farms, but we like working with SHFs. Ideally, we'd like to get 50% from SHFs and 50% from our farm."
— Transitional spices, tea, juice, and jam processor, Malawi

"We want to make money, but with everyone."
— Foundational sunflower cooking oil and rice processor, Malawi

✘ *WHY SME PROCESSORS MAY NOT INVEST IN SHF SOURCING MODELS*

1. NO PREMIUM PRICE FOR DIFFERENTIATING FACTORS

In commodity markets where differentiating factors such as quality (better taste, texture, smell, nutrient density), variety, origin, and traceability are not valued, the business case for processors to invest in their suppliers rests on volumes and is weaker. This weaker business case reduces the processors' likelihood of working directly with SHFs and providing support such as access to quality inputs, training on GAPs, etc.

2. LOW INVESTMENT IN PRODUCTION

If a crop is grown primarily for subsistence vs. commercial purposes in a country, availability of the crop will be limited. In this case, it may make commercial sense for a processor to buy from traders that import, as seen for peanuts and soybeans in Kenya. This may be more cost-effective than investing in SHFs to build up the local supply.

3. NOT GROWN BY SHFS

A certain crop may not be grown by SHFs in a country. This is the case for wheat in both Zambia and Malawi. In Zambia, most wheat is produced by large-scale farmers; consumers demand high quality wheat particularly for making chapati, and SHFs lack the capacity to meet the quality specifications. In Malawi, a majority of wheat is imported.

4. QUALITY CHALLENGES WITH SHFS

If SHFs are unable to meet processors' quality specifications and it would be too cost-intensive to work with SHFs to improve the quality of their crops, processors may opt to source their raw materials via other channels.

5. SPECIFIC VARIETY NOT AVAILABLE

A specific crop variety may not be grown by local SHFs. Local conditions like soil or weather may not be conducive to the particular variety, or a processor may find it cost-prohibitive to invest in building up the local supply vs. importing. For example, wheat used for bread in Kenya is imported from Ukraine.

6. INADEQUATE VOLUMES AND CONSISTENCY FROM SHFS

Production by SHFs may not meet a processor's volume and reliability needs. As a result, a processor may opt to work with agents or aggregators/traders to ensure appropriate volume and timeliness, particularly if there is high demand for their finished product in the market. If orders are high and processors require significant volumes of raw material to meet the demand, they may forgo the effort to collect smaller amounts from SHFs, even if the procurement cost per unit is lower from SHFs compared to agents or aggregators/traders.

7. COSTLY LOGISTICS

For small processors, the total procurement cost of sourcing from SHFs may be prohibitive. Even when the farm-gate price and quality are favorable compared to aggregators or traders, the added costs of mobilizing, monitoring, aggregating, and/or transporting from SHFs may not be affordable for small processors. For example, when rice production in Tanzania is high, farmers and aggregators may take their rice to sell in the open market at relatively low prices. If a small processor only needs to buy a few bags — factoring in what they would otherwise pay for fuel to go directly to SHFs — they may choose to buy in the open market vs. investing in a direct farmer sourcing model.

The previous section shared learnings about what drives SME food processors to invest — or not invest — in SHF sourcing models. But AINFP wanted to go a level deeper to understand what actually makes these models work well, where processors are consistently getting the quality and volumes they expect from SHFs at a favorable price, and SHFs are equally satisfied with and benefiting from the relationship. While a purely transactional relationship may suffice, additional services and investment at the farmer level are often key to ensuring a sustainable and mutually-beneficial relationship, which in turn boosts livelihoods, local economic development, and availability of safe, nutritious food.

This section outlines the farmer-level investments that both processors and SHFs highlighted as critical ingredients for a successful relationship, and which AINFP staff observed to generate mutual benefits. By supporting SME processors to understand the needs and priorities of local farmers and how potential services might address these, and by helping processors to estimate the commercial costs and benefits of providing particular services, initiatives can help processors zero in on strategic investments that meet both commercial and farmer needs in order to establish productive and lasting relationships.

1. RELIABLE AND CONSISTENT MARKET

Conversations with individual SHFs, SHF groups, and SHF cooperatives revealed that having a guaranteed market with stable prices was the top reason why they enjoy working with a particular processor.

"Vendors would not measure in kgs; they'd come with their own tins and prices."
— Rice farmer, Malawi

A guaranteed market often involves — but does not require — a signed agreement. Farmers shared that this assurance of a reliable, consistent income enables them to pay school fees, invest in their businesses, and meet other personal needs. They contrast this to their previous experiences selling in inconsistent, informal markets to shops that could not absorb much volume, and which would return spoiled product to the farmers if it did not sell. They also noted selling to vendors who would buy at the lowest price and organizations coming and forming farmer groups but then leaving without buying anything.

"I was a tobacco grower. I started a new life with tomatoes. Tobacco has one season, tomatoes have three. I've bought a motorcycle, fridge, and house because of [the buyer]."
— Tomato farmer, Malawi

2. ON-TIME PAYMENT

Both SHFs and processors highlighted on-time payment to farmers as critical to a successful relationship. Late payment and — in some cases — no payment at all, makes it difficult for farmers to buy the inputs they need, repay loans, and meet personal needs.

"I've seen a small increase in milk production, likely due to the on-time payments and therefore my ability to buy the proper feed for my cows."
— Dairy farmer, Tanzania

Some farmers mentioned appreciating convenient payment straight into their mobile or bank accounts, while other farmers prefer cash payments. For SME processors that are constrained by limited working capital, cash payments can be a challenge.

Farmers want to be paid immediately. On-time payment is quite a good incentive."
— Transitional peanut processor, Kenya

3. TRAINING

"I see the commitment of the company to help farmers develop."
— Dairy farmer, Tanzania

AINFP processor clients have conducted or supported training with farmers on the following topics, among others: GAPs, husbandry practices, greenhouse production, do's/don'ts of chemical and fertilizer application, proper milking, milk handling/hygiene, post-harvest management, how to find markets, record keeping, gross margin analysis, group dynamics, and planting of certain trees that produce higher levels of nitrogen to lower fertilizer costs and increase yields. Processors may choose to invest at strategic points, such as during land preparation and harvesting. They may hire an agronomist part-time for these points in the season or subsidize costs for government extension

officers to visit all farmers if they lack sufficient funding, covering costs like transport and gas. Other processors will hire agronomists full-time to support farmers and monitor production. Some processors require farmers to complete a training before they can supply. Some training is done on the spot upon delivery of raw materials to a collection point or to the factory, while other training is done at demonstration plots, individual farmer locations, etc.

"If there's an issue when I deliver to [the buyer], I receive in-house training on how to solve the issue."
— Dairy farmer, Tanzania

4. INPUTS

Use of high-quality inputs can boost farmer yields, quality, and access to markets, to the benefit of both farmers and processors. However, farmers face several challenges related to inputs that prevent them from achieving higher yields, largely due to lack of capital: high prices, limited access and availability, and lack of knowledge. Certified seed is expensive or may be difficult to find near farmers' locations; as a result, many SHFs use uncertified seed and recycle it season after season, leading to low productivity. The price of fertilizer can be volatile, shifting with forex fluctuations and skyrocketing during supply chain crises like at the outset of the war in Ukraine. Farmers may not buy sufficient amounts or may apply fertilizer sub-optimally. Availability of water and availability and cost of animal feed can be unreliable, particularly during droughts, as farmers rely on rainfall, and many farmers grow animal feed on their land and supplement from other sources. Farmers also mention low-yielding livestock breeds.

To address these challenges and ensure they get the volumes they need, AINFP processor clients have connected farmers to the following inputs, either directly or via third parties: certified seed, fertilizer, weeding chemicals, Aflasafe, feed, cows, beehives, and vaccines. Processors may provide these at a subsidized price, at the manufacturing price, at market price, on a loan/credit, or for free. Though free provision is uncommon, we see it in certain cases, for example providing free seed if a processor needs a specific variety. Farmers may be given the option to pay in cash or to have the cash equivalent deducted from their payment at harvest. In some cases, processors return seed to farmers post-harvest, for example with rice.

5. PRICE

Price — though very important to SHFs — was frequently mentioned *after* training and input provision as an incentive for why they choose to sell to particular buyers, what they value most about those relationships, and what services have been most helpful to them and their businesses. In discussing price, various farmers mentioned that pricing in contracts should consider farmers' costs of production and be based on market forces, and that pricing should be a joint discussion and agreement between the off-taker and farmers — via cooperatives — vs. the sole decision of the off-taker. Some processors include a minimum price in contracts, some offer the market rate, and some offer a price slightly above market value, while others may offer a price slightly below market value but off-take significant volumes from SHFs.

6. FINANCIAL SERVICES

"Working capital is a challenge. My production rate is too low to be able to pay back a bank loan, if I had one. I need friendly loan terms."
— Dairy farmer, Tanzania

Working capital is a leading challenge for SHFs. They struggle to afford quality inputs and equipment, preventing them from achieving the yields and quality that could generate enough income to meet personal needs *and* grow their businesses. Though some SHFs have successfully borrowed from banks, this remains a challenge for many individual farmers and farmer groups. Leading financiers see them as risky investments due to their lack of collateral and insurance. Digital tracking of sales and payments helps establish a farmer's cashflow history, which has enabled some farmers to access bank loans. However, even when farmers meet a financier's requirements to access a loan, the interest rate and other loan terms may be prohibitive. Rather than approaching commercial banks, some farmers have accessed loans through VSLAs.

"I could get credit from a bank — I'm paid by check, so I have cashflow history. But interest rates are too high; affordable capital for farmers is hard! Most of the cows are not insured. It requires farmers to be in a group to get a loan."
— Dairy farmer, Tanzania

"I have two cows, but space for seven. I'd like more cows, but working capital is a challenge."
— Dairy farmer, Tanzania

Meeting between dairy processor and farmer cooperative in Tanzania. (TechnoServe)

Processors have also stepped in as providers and facilitators of financing for SHFs. Though some processors find it challenging to manage loans with SHFs, others provide them loans or advances to help with feed, fertilizer, harvesting, or personal needs, under the condition that farmers will sell their crops to the buyer and the loan equivalent will be deducted from their payment. Processors also provide inputs directly to farmers on credit, similarly deducting the amount from harvest time payment. Further, processors have helped farmers access grant funding; for example, a foundational dairy processor in Malawi supported farmers to secure a grant from an international development nonprofit, providing 150 dairy cows to 120 SHFs and impacting an estimated 700 people. A foundational dairy processor in Tanzania supported SHFs to access a loan of 6 million TSh for cows and trucks.

7. TRANSPORTATION

Transporting raw materials from farm to factory can be time-consuming and costly for farmers. They may transport the raw materials themselves by truck, motorcycle, or bicycle, or they may hire the same forms of transportation to deliver to the factory. To build goodwill with farmers and to secure raw material supply for the company, processors may reduce the transport burden on farmers by setting up formal, conveniently located collection centers where SHFs can drop off their raw materials; meeting farmers at less-formalized central locations; or picking up directly from farmers. Sometimes there is a cost to farmers for transportation, while other times processors offer transport for free. Collection centers will often offer additional services to SHFs, including feedback and training on raw material quality, farm equipment rentals, inputs for sale, and equipment for value addition, among others.

Employee at a grain mill in Ethiopia. (TechnoServe)

8. STORAGE

SHFs often lack adequate storage. This is one reason why they look to sell their crops quickly after harvest, despite prices typically being at their lowest due to high supply. A processor may offer free storage to SHFs at the company's facilities, with the understanding that the SHFs will eventually sell to the company. This has benefits for both farmers and processors; it enables farmers to wait until prices increase outside of peak season to sell their product, and helps processors get the volume of raw material they need.

Informal warehouse receipts are another successful approach. A processor provides storage for farmers' crops in the company's warehouse. Because farmers need funds to buy inputs for the next season, the processor gives farmers a percentage of the value of the stored crops to buy inputs, with the stored crops as collateral. The processor pays farmers for the remainder of the crops when farmers are ready to sell. SHFs get a better price for their crops and access to inputs, and processors get the volumes they need.

9. LOCAL PRESENCE

Having a local presence can be beneficial to the processor and to SHFs, even when a processor does not provide additional services to SHFs. A processor may have an office where the farmers are located or may employ and deploy extension workers to the field to establish relationships with farmers. When asked why they like working with specific processors, all interviewed farmers mentioned having a good personal relationship with the processor, as well as good communication and "friendly" and "comfortable" interactions. One Tanzanian dairy farmer mentioned that she has seen how the buyer has been growing and sees an opportunity to improve her production to meet the company's needs.

"A paper contract is weaker than a social contract."
— Transitional processor of spices, teas, juices, and jams, Malawi

10. VALUE ADDITION

Processors can help SHFs add value to their products, generating benefits for both SHFs and processors. Processors might buy processing equipment to house at the farmer site or collection center for farmers to use, such as a thresher, solar dryer, cutting machine, etc. Using the equipment, SHFs improve their efficiency, can sell larger volumes to processors, and may receive a higher price. Processors may also offer milling services to farmers at a small cost; for example, in addition to selling raw maize to processors, farmers can mill a portion of their maize into flour to sell or use at home. As an added benefit to processors, they may be able to keep the byproduct for free.

Dairy farmers in Tanzania. (TechnoServe)

11. RESPONSE TO AD-HOC NEEDS

In addition to more predictable SHF needs, processors may respond to SHFs' ad hoc needs — business-related or personal — to build goodwill. For example, AINFP processor clients have fulfilled ad hoc needs such as:

- paying for school fees, uniforms, and books
- providing coffins for family funerals
- helping SHFs diversify income streams, e.g. by supplying moringa seeds and beehives for off-season income
- building and repairing greenhouses
- installing and fixing water pumps
- facilitating veterinary services to SHFs via government extension officers
- providing cold storage technology
- providing mobile phones for mobile payments, delivered to SHFs as part of a package (i.e., phone, seed, fertilizer), which the processor translates into a volume of raw material to be deducted from their payment to SHFs at harvest
- providing space to SHFs at their facilities to display and sell their products free of charge
- supporting SHFs to find additional markets for volumes that the processor cannot buy up
- returning seeds to SHFs
- gifting final product to SHFs

Employee at a maize processing facility in Zambia. (TechnoServe)

How are SME Processors' Investments in SHF Sourcing Models Impacting Farmers?

From 2018-2024, AINFP-supported food processors sourced **more than 260,000 MT of raw materials from over 349,000 SHFs**, **with a cumulative value exceeding $118M**. AINFP staff worked closely with individual processors to develop a deep understanding of their goals and challenges and how raw material sourcing related to each. With this understanding, AINFP assisted processors to identify adjustments and investments they could make in their raw material sourcing models to overcome their challenges and advance toward their goals, in ways that would also benefit SHFs. AINFP's direct support to processors included: projecting the commercial impact of specific farmer-level investments; training processors on business planning tools; facilitating connections to and conversations with farmers and value chain partners; and supporting processors to access funding to be able to make the recommended investments.

To better understand the impact that AINFP-supported processors have had on SHFs, TechnoServe teamed up with global impact measurement company 60 Decibels to conduct a pilot learning activity. This section describes the method, findings, and learnings from the pilot.

METHOD

60 Decibels interviewed representative samples of SHFs who are engaged with three AINFP-supported clients in Kenya and Tanzania — one in dairy, one in peanuts and beans, and one in sunflower, maize, and rice. AINFP collaborated with these clients on the following company-specific objectives: strengthening relationships with farmer suppliers; expanding the supplier base via contracting farmer groups and providing value chain services; and increasing the local supply via partnerships with producer organizations.

Each of the three AINFP-supported companies provided a database of farmers actively engaged with them in the last 12 months, totaling 2,973 SHFs. From these, 60 Decibels trained researchers conducted **rapid phone surveys with 521 SHFs** (40% women) between August and September 2023.

Countries	Kenya, Tanzania
Farmer Sample Frame	2,973
Interviews Completed	521
Response Rate	67%
Language	Swahili
Median Survey Length	21 minutes
Confidence Level	90%
Margin of Error	3%

FINDINGS

To assess impact, the study examined changes in SHFs' productivity, income, and quality of life.

Indicators were:

1. **Farming methods**
   Have farming practices changed as a result of the processor's engagement?
2. **Production and revenue**
   Have farmers witnessed an increase in their production and revenue?
3. **Quality of life**
   To what extent has farmers' quality of life changed as a result of the processor's offerings?

**Note: "range" looks at the difference in scores for an indicator across the three companies and "n" is the number of farmers who responded to each question.*

77% — report farming or livestock rearing improved because of the food processor

(range: 76-80%, n = 520)

- 29% Very much improved (range: 25-39%)
- 48% Slightly improved (range: 41-51%)
- 22% No change (range: 19-24%)
- 1% Slightly worse (range: 0-1%)
- 0% Got much worse (range: N/A)

Among farmers who reported improved practices because of the processor, the **top improvements** mentioned were:

1. use of high-quality animal feeds or dairy meals;
2. improved fertilizer and pesticide use; and
3. improved seeds or fertilizer affordability.

Other improvements mentioned include improved knowledge of good dietary practices; increased focus on cattle health and hygiene; improved crop spacing techniques; use of manure or organic fertilizers; increased investment in equipment or labor; and agricultural land and earnings expansion.

"I have been able to buy better quality feed for my animals to sustain my milk production. I invest the money that I get from [processor] into my cows by buying quality feed from my local agrovet rather than just using normal feed."
— Dairy farmer, Kenya

80% — report total production increased because of the food processor's support

(range: 62-88%, n = 518)

- 30% Very much increased (range: 21-42%)
- 50% Slightly increased (range: 20-65%)
- 18% No change (range: 11-36%)
- 2% Slightly decreased (range: 0-3%)
- 0% Very much decreased (range: N/A)

"[Processor] provides inputs at an affordable price, and this has ensured that the cows' production continues to increase."
— Dairy farmer, Kenya

"I didn't have the privilege of supplying beans to the school because my harvest was minimal. Since I joined [processor's partner organization], I yielded enough harvest. For this reason, I have been recommending it to my friends and family."
— Bean farmer, Kenya

Dairy farmer in Kenya. (TechnoServe)

82% — report earnings increased because of the food processor

(range: 67-96%; n = 518)

- 30% Very much increased (range: 18-45%)
- 52% Slightly increased (range: 22-68%)
- 14% No change (range: 4-30%)
- 4% Slightly decreased (range: 1-5%)
- 0% Very much decreased (range: 0-1%)

Of those who reported increased earnings because of the processor,

» **89% named an increase in volumes sold** as a main reason (range: 65-97%);

» **35% named an increase in price** as a main reason (range: 20-82%); and

» **10% named reduction in cost** as a main reason (range: 2-33%).

"Thanks to [processor], I am able to access a reliable rice market, which has helped me increase my family's income and buy fields for rice cultivation. It has also increased the breeding of goats and cows, and I have been able to meet my family's daily needs."
— Rice farmer, Tanzania

87% — report quality of life improved because of the food processor

(range: 73-93%; n = 520)

- 36% Very much improved (range: 33-38%)
- 51% Slightly improved (range: 40-59%)
- 12% No change (range: 6-23%)
- 1% Slightly worse (range: 0-3%)
- 0% Got much worse (range: 0-1%)

Those who reported improved quality of life because of the processor mentioned the following top ways:

1. improved ability to afford **household expenses**;
2. improved ability to afford **education**;
3. increased ability to afford **assets**, such as a house, livestock, and farmland; and
4. increased **creditworthiness** due to higher income.

Note: female farmers were more likely to report improvements in their quality of life compared to male farmers (91% vs. 83%). This difference was more pronounced for the dairy farmers (97% vs. 87%).

"[Processor] helped me provide food for my family and pay school fees. This was a result of increased income from saving storage costs and getting good prices for my rice."
— Rice farmer, Tanzania

Farming family in Tanzania. (TechnoServe)

51% — are "promoters" of their processor, rating their processor 9 or 10 on a scale of 0-10 of how likely they are to recommend the processor to a friend or family member

(range: 38-85%; n = 521)
(0 = not likely; 10 = extremely likely)

- 51% Promoters (rating: 9-10) (range: 38-85%)
- 39% Passives (rating: 7-8) (range: 12-54%)
- 10% Detractors (rating: 0-6) (range: 3-17%)

Based on these results, the processors have an average **net promoter score (NPS) of 41**, which is "favorable." This metric signals how likely farmers are to recommend the processor to a friend or family member. The score can range from -100 to 100, and NPS creators Bain & Company suggest that a score above 0 is good, 20-50 is favorable, above 50 is excellent, and above 80 is world-class.

PROMOTERS mentioned that they value the following services and characteristics most from processors:

» **good customer service;**
» **timely payments;**
» **assurance of market;**
» **high-quality inputs;**
» **safe and guaranteed storage;**
» **informative training;**
» **trustworthiness;** and
» **the ability to realize improved yields.**

"[Processor] is always on the ground for frequent interactions. They have never delayed nor failed to pay for what I supply."
— Dairy farmer, Kenya

PASSIVES and DETRACTORS would like to see

» **better prices;**
» **more regular follow-ups;** and
» **affordable inputs.**

"The price of milk has been fluctuating without warning. The competitors pay better. The milk collecting stewards do not keep good records of our delivery. My issue is with record keeping."
— Dairy farmer, Kenya

74% — report having no challenges with their processor

(n = 521)

- 74% No challenges reported (range: 66-85%)
- 26% Challenges reported) (range: 15-34%)

Among those reporting challenges, the **top challenges** were:

» delays in raw material collection;
» poor or fluctuating prices;
» poor customer service;
» poor quality or price of inputs; and
» delays in accessing services.

"Our roads are not so good, so sometimes the collection of milk is very slow. They use motorbikes to collect milk, which cannot carry a lot at a time."
— Dairy farmer, Kenya

56% — report the price offered by the processor is very good or good

(range: 45-95%; n = 421)

- 21% Very good (range: 7-61%)
- 35% Good (range: 21-38%)
- 28% Fair (range: 2-39%)
- 13% Poor (range: 3-16%)
- 3% Very poor (range: 0-7%)

89% — report that without the processor, they would have sold less volume

(range: 88-91%; n = 420)

- 55% Much less (range: 45-62%)
- 34% Slightly less (range: 29-43%)
- 8% Same (range: 5-9%)
- 2% Slightly more (range: 1-4%)
- 1% Much more (range: 0-1%)

97% — report that the processor always or most times pays them on time

(range: 89-99%; n = 421)

- 88% Always (range: 70-94%)
- 9% Most times (range: 4-19%)
- 2% Sometimes (range: 1-9%)
- 1% Rarely (range: 0-2%)
- 0% Never (range: N/A)

88% — report that the processor is very trustworthy

(range: 84-90%; n = 421)

- 88% Very trustworthy (range: 84-90%)
- 11% Slightly trustworthy (range: 9-13%)
- 1% Slightly untrustworthy (range: 0-3%)
- 0% Very untrustworthy (range: 0-2%)

LEARNINGS

SHFs' satisfaction with a processor is strongly linked to their perception of the price offered by the processor. SHFs who perceived the price offered by a processor to be *good* or *very good* were more likely to express satisfaction with that processor, vs. SHFs who perceived the price offered to be *fair* or *poor* (NPS of 62 vs. 17). Detractors similarly sought better prices from processors.

Market dependability and regular communication from processors could contribute to higher satisfaction among SHFs. SHFs categorized as passives and detractors express a desire for more reliability in terms of follow-up or communication from processors and a dependable market.

SHFs' trust in a processor is linked to whether they report having challenges with the processor. 96% of SHFs who reported having *no challenges* with a processor rated the processor as *very trustworthy*, compared to 69% of SHFs who reported having *challenges*. Collecting regular feedback from SHFs could provide processors early indications of operational challenges, and implementing challenge resolution mechanisms could enhance SHFs' trust and willingness to continue to sell to processors.

Improving payment timelines could enhance farmer loyalty. 91% of SHFs who reported *always* being paid on time by a processor rated the processor as *very trustworthy,* vs. 67% of SHFs who reported not being paid on time.

SHF satisfaction with a processor is influenced by factors like the competitive landscape of the value chain (i.e. presence of alternative buyers). For future programs, it may be more insightful to cluster processors by value chain and look at farmer feedback within a particular cluster, to better understand what drives SHF satisfaction and impact within a specific value chain.

CASE STUDIES: AINFP's Support to Five SME Food Processors to Address Raw Material Sourcing Challenges and Improve SHF Livelihoods

This section is a deep dive into AINFP's 1:1 support of SME food processors in Kenya and Tanzania.

Each case study details:

» A processor's raw material sourcing challenges

» AINFP's support and recommendations to address these challenges through adapting and investing in SHF sourcing models

» Actions by processors to implement the recommendations

» How these actions have impacted both processors and SHFs to date

1. TRANSITIONAL PEANUT AND BEAN PROCESSOR | KENYA

COMPANY OVERVIEW

The male-founded and -led company produces peanut-based products including peanut powder, roasted peanuts, peanut butter, and ready-to-use supplementary foods (RUSF), as well as high-iron bean products, with distribution across Kenya.

WHY SHF SOURCING?

In 2020, the company relied on imported peanuts from Malawi for ≈95% of its supply. While some farmers in Kenya grew peanuts, yields were not sufficient or consistent enough for the company to depend on the local supply. Kenya is a net importer of peanuts, reportedly importing >90% of the peanuts consumed in industrial and urban areas.

The COVID-19 pandemic disrupted supply chains, driving up the price of imported peanuts by 23%; the average price increased from KSh 127/kg in 2019 to KSh 156.4/kg in 2021, at one point reaching KSh 180/kg (42% increase). Exposure to importation risks — price fluctuations and fragile supply — exacerbated by the impacts of COVID-19, led the company to seek alternate supply channels. To remain competitive and profitable in the market, they needed to be able to control the cost of production.

In 2021, the company ran a pilot to test the potential of the local supply chain by sourcing 49% of its peanuts from local SHFs via middlemen; peanut production in Kenya is dominated by SHFs. The pilot was positive, pointing to possible gains in local sourcing; however, engaging middlemen to accumulate tradable volumes led the company to lose some of these gains due to price mark-ups and lack of investment by middlemen into on-farm quality and quantity improvements. The company decided to pursue direct engagement with local SHFs.

SHF CHALLENGES

Peanut production by SHFs in Kenya was low-yielding and of suboptimal quality due to:

1. limited access to and uptake of quality planting materials like seeds and varietals; a majority of local SHFs grow traditional varieties that are low-yielding with longer maturation periods and a high prevalence of aflatoxin contamination;
2. over-dependence on rainfall;
3. poor agronomic practices;
4. poor harvesting and post-harvest handling practices;
5. lack of exposure to agricultural training and advisory.

AINFP'S SUPPORT

AINFP worked alongside the company in 2021 to develop a plan for improving the reliability and quality of the local peanut supply and reducing sourcing costs, while providing a stable market to local SHFs, enhancing their capacity to increase yields and safeguard quality, and reducing their production costs.

Together, AINFP and the company met with 3 local farmer groups to better understand their challenges and needs. Four priority needs surfaced:

» **Access to high-quality seed:** SHFs lacked funds to purchase high-quality seeds or invest in new, better-performing varieties. This was exacerbated by poor weather and crop failures that left SHFs with even less capital.

- **Agronomy training:** Average yields of 400-500 kg/acre were well below potential and insufficient to reliably supply the company and provide SHFs a decent income. To increase yields, SHFs needed training on GAPs, from land preparation to post-harvest handling.
- **Weather information:** Climate change has increased the incidence of extreme weather, and SHFs have experienced total crop loss in recent years due to a higher number of precipitation-free days and extended drought conditions. SHFs need access to accurate, local weather information to make informed decisions to protect their crops.
- **Threshing services:** SHFs were threshing peanuts by hand, which is labor-intensive and can cause contamination and breakage, making them unsellable on commercial markets. To participate in a commercial value chain, SHFs needed access to mechanical threshing machines.

ACTIVITIES IMPLEMENTED TO DATE

The company is working through existing SHF networks and with SHF institutions in target areas to mobilize and recruit SHFs. So far, the company has invested US ≈$65K to implement recommendations from its work with AINFP — most of it (≈$50,000 / KSh 5 million) to buy peanuts promptly and in bulk. The Managing Director noted, "It's a big thing — farmers want to be paid promptly."

The company has established two active "hubs" in target areas to collect raw materials from SHFs and provide services to them. The first hub is in the Rift Valley, where they bought from SHFs during the 2024 season. The company installed a thresher (sheller) at the hub for US $4,000 — "very much worth the cost," according to the Managing Director — for "smooth shelling and to cement the relationship [with SHFs]." A second hub was established in Nyanza ahead of February 2024 planting. The Nyanza cooperative opted to retain its produce to scale up seeds for the upcoming season, however, the company was able to buy 32MT of high iron beans from 31 farmers and aggregators. The company plans to establish a third hub in Tharaka Nithi County. They coordinated distribution of new seed varieties to two areas, though one area that is prone to drought did not do well as the seed variety requires irrigation; the company has identified an alternate location. It hired a full-time agronomist who is based in — and is originally from — the Rift Valley region; the agronomist is the focal person for the company's sourcing work and manages operations and relationships with SHFs. Further, the company provided Aflasafe — manufactured by Kenya Agricultural Research Organization — to SHFs at manufacturer's cost, along with training on how to properly use the product. Samples from a pilot with SHFs in the Rift Valley showed negligible aflatoxin levels following application of Aflasafe. The company has engaged the Agriculture Sector Development Support Program in Western region, which is rolling out a county-wide peanut farming promotion program, and a project in Nyanza implemented by an INGO in collaboration with the county government that is focused on scaling up production of peanut as a priority value chain in the area.

COMPANY IMPACT

Local SHFs now supply ≈60% of the company's peanuts. In 2023, the company sourced 57 MT from SHFs, compared to 39 MT in 2021. Varieties from SHFs are used for peanut powder and peanut butter. Relatedly, the company reduced imports to ≈40% of its supply in 2023, compared to 95% in 2020. This imported variety is used for roasted peanuts and is not currently being produced by local SHFs.

Between 2021 and 2023, company revenues increased by 31%. The company's Founder and Managing Director notes, "There's been good impact, especially from the sheller, with less than 2% wastage. Farmers used to dip peanuts in water and shell manually; with the sheller, they are no longer tampering." As a result, SHFs are able to commit greater quantities to the company. Further, the company can now control the price, which used to fluctuate significantly with imports. The Managing Director also notes the benefit of collaborating with farmer support organizations. "There are many partners trying to support farmers, mainly on production. When they find a commercial partner, it's good for them and it's cheaper for [the company] to partner — we don't incur as much of a cost for farmer grouping and mobilization."

SHF IMPACT

In addition to increasing the percentage of raw materials sourced from local SHFs from 2021 to 2023, the company also *increased the number of SHFs* it procured materials from — from 650 SHFs in 2021 to 1,463 SHFs in 2023.

60 Decibels conducted brief phone surveys with 150 SHFs who actively supply the processor. Of those who responded to the question, "Has the money you earn changed because of the food processor?" (n = 147), **67% reported that their earnings "very much increased" (45%) or "slightly increased" (22%) as a result of working with the processor.** Of the 67% who reported increased earnings, 91% mentioned an *increase in volume sold* and 26% mentioned an *increase in price* as a main reason, while 2% mentioned *reduction in cost* as reasons for higher earnings.

VOLUMES SOLD

Of the respondents to the question, "Without the food processor, would you have sold more, less, or the same quantity of produce?" (n = 56), **91% said they would have sold "much less" (62%) or "slightly less" (29%) without the market provided by the processor.** The processor's Managing Director mentioned that SHFs would otherwise sell to local markets that might not buy substantial quantities, highlighting that most other local companies working in peanuts are traders that import into Kenya from Malawi, Mozambique, Zambia, India, and Argentina. He noted that SHFs can also commit greater quantities because of the sheller provided by the company, which reduces breakage, is less labor-intensive, and adds value.

Of the respondents to the question, "Which of the following services did you receive from the food processor?" (n = 150), **91% reported accessing inputs,** and **69% reported accessing training.** Additionally, **80% reported that their way of farming "very much improved" (39%) or "slightly improved" (41%)**, noting improvements in fertilizer use (31%), crop spacing techniques (20%), and use of manure or organic fertilizers (16%). Of the respondents to the question, "Has the total production from your crop changed because of selling to the food processor?" (n = 147), **62% reported that total production "very much increased" (42%) or "slightly increased" (20%).**

The Managing Director commented that, in addition to peanuts, many of the farmers grow sorghum and maize, which are also susceptible to aflatoxin; once farmers apply Aflasafe for peanuts — provided by the company at manufacturer's cost along with training on how to use it — it will help with the other crops as well. He mentioned that farmers have received requests for these crops from institutional buyers, but aflatoxin has been a barrier to securing those markets.

PRICE

Of the respondents to the question, "Do you think the price offered by the food processor is very good, good, fair, poor, or very poor?" (n = 57), **63% said the price offered by the processor is "'very good" (42%) or "good" (21%)**, while another 19% say "fair". The processor's Managing Director noted that contracts at the farmer group level include a minimum price, and that for one farmer group the company offers slightly above market price (by ≈KSh 10/kg) for a particular peanut variety. In a new region where the company is in talks with a SHF cooperative, production has been low and demand has been high; the local government together with an INGO is promoting commercial peanut farming. While the processor is offering a price slightly below what the cooperative is currently receiving, the company conducted a gross margin analysis with SHFs to demonstrate that — based on the projected offtake volume — SHFs would generate strong revenues.

OTHER

73% of surveyed SHFs (n = 150) said that their quality of life has "very much improved" (33%) or "slightly improved" (40%) as a result of working with the processor, noting improvements in ability to afford household expenses (38%), ability to afford education (32%), and increases in profit or revenue (25%). Of the respondents to the question, "How often does the processor pay on time?" (n = 57), **89% said the processor "always" (70%) or "most times" (19%) pays on time.** Of the respondents to the question, "Did you find the processor trustworthy or not?" (n = 57), **84% reported that the processor is "very trustworthy."**

COMPANY LEARNINGS

The processor's Managing Director shared the following learnings from his experience adapting and investing in a SHF sourcing model:

- **New seed varieties need to be tested in each new location.** In one target area, the company provided a new variety to 50 SHFs who had never planted the variety before. The plants did not reach maturity, and SHFs were largely unable to harvest or sell their crop.
- **"On-time payment is quite a good incentive."** SHFs want to be paid immediately. The company's agronomist "weighs and pays" — paying SHFs via mobile pay, largely using Mpesa.
- **Building a successful SHF sourcing model requires having relationships with the SHFs.**

Peanuts at processing facility in Kenya. (TechnoServe / Bobby Neptune)

2. TRANSITIONAL MAIZE, SUNFLOWER, AND RICE PROCESSOR | TANZANIA

COMPANY OVERVIEW

The female-founded and-led company produces fortified flours, sunflower cooking oil, and white rice. The enterprise distributes across 5 regions of Tanzania and exports rice and maize flour to the Democratic Republic of the Congo (DRC).

WHY SHF SOURCING?

The processor was initially procuring a majority of its raw materials from aggregators; however, it was experiencing issues with quality and price. The processor noted that materials would sometimes arrive with other substances like sand mixed in, creating losses for the company. The aggregators' "top up" on price also increased expenses. This limited the company's ability to buy up enough raw material to sustain consistent production throughout the year, in order to supply domestic markets such as schools and government institutions, and to export to the DRC. As a result, the company was operating significantly below capacity — ranging from 50-70% — resulting in high per unit production costs. The company saw an opportunity to expand direct sourcing of sunflower seed and maize from SHFs to improve the quality and cost of raw materials, and to ultimately source greater volumes.

SHF CHALLENGES

The company reported low motivation among SHFs to produce sunflower due to the historical unreliability of the market. Among SHFs producing sunflower, inadequate access to seed and limited knowledge of GAPs, fertilizer application, and post-harvest handling contributed to low production. Meanwhile, high levels of aflatoxin contamination afflicted SHF maize production. Across all of its product lines, the company encountered high aggregation costs, as some SHFs were not grouped and were producing small quantities of varying quality. The company also faced significant side-selling.

AINFP'S SUPPORT

AINFP teamed up with the company in 2021 to develop a plan for improving the company's access to quality, affordable volumes of maize and sunflower seed from local SHFs in ways that would also benefit farmers. Together, AINFP and the company identified the following interventions to meet the needs of both the company and SHF suppliers:

» Begin contracting SHF groups, while maintaining a smaller percentage of sourcing from individual SHFs and aggregators. The company had never worked with SHF groups, which are often less expensive to mobilize, monitor, and aggregate volumes compared to individual SHFs.

» Establish contracts with SHF groups that include:

  • Procurement terms and specifications: minimum indicative prices, volumes, and quality; price adjustment mechanisms to accommodate increases in market price at harvest time.

  • Farmer services to be provided by the processor: agricultural extension services; free storage under the condition that SHFs will sell to the company; value addition services.

» Coordinate with value chain stakeholders to facilitate services for SHFs: financing, inputs, markets, extension services.

» Add a small capacity maize milling machine at the company's facility in southwest Tanzania where maize SHFs are located to:

  • Enable SHFs to mill a portion of their maize at a low cost, strengthening the company's relationship with SHFs.

  • Reduce the cost to the company of transporting the maize grain 800 km to Dar es Salaam for processing.

After supporting the company to develop the intervention plan, AINFP helped them initiate implementation. This included:

» Identifying SHF groups via the government cooperative office. Some were already registered as cooperatives, while AINFP helped others register. Benefits of registering include, but are not limited to, access to bank loans as well as government guarantees and small loans.

» Developing contracts with SHF groups.

» Training SHF groups on group management; business planning (i.e., determining the target number of members, inputs required, production forecasting); and using contracts as collateral for loans.

» Supporting the company to access commercial financing.

ACTIVITIES IMPLEMENTED TO DATE

With support from AINFP, the company connected with already-established SHF groups and helped establish and register other groups. They signed season-long contracts with each group specifying volumes and quality and agreeing to pay market rate. AINFP trained SHF groups on organizational management, developing business plans, and using contracts as collateral for loans. Since developing the plan, the company has also:

» Purchased raw materials from contracted SHF groups.

» Begun selling inputs at its facility in the Southwest, including a seed variety with higher output, fertilizer, and weeding chemicals.

» Facilitated government extension support to SHFs in land preparation and GAPs by covering a portion of the extension agents' transportation and fuel costs.

» Expanded provision of space in its warehouse at no cost to SHFs to display and sell some of their finished product.

COMPANY IMPACT

From 2021 to 2023, the company increased the percentage of its total raw materials sourced from SHFs from ≈50% to ≈70%, including increasing the share from women SHFs from 26% to 65%. The remaining ≈30% of its raw materials are from aggregators. The company has successfully grown its supply of maize and sunflower as follows:

» **Maize**: 650 MT in 2021 → 850 MT in 2023 (30% increase)

» **Sunflower**: 60 MT in 2021 → 178 MT in 2023 (197% increase)

The enterprise reports that since 2021, revenue has grown by 9-11% each year. This is a result of expanding to new markets, including to the DRC where it now exports rice and fortified maize flour. They also report improved quality from SHFs, noting that when they buy directly from SHFs, "raw materials are not mixed," and that aflatoxin is not a big issue because the company now has testing equipment to be able to ensure quality before purchasing. They also noted improved volumes and that side-selling is no longer a problem. Even after factoring in the cost of logistics, the company notes that it is more cost effective to buy from SHFs. Further, they successfully accessed a USD $86,000 bank loan after

submitting proof of contracts with SHFs — though this was significantly lower than the amount sought — as well as $100,000 in grant funding.

SHF IMPACT

In addition to increasing the percentage of raw materials sourced from SHFs from 2021 to 2023, the company also increased the number of SHFs it procured materials from. For maize and sunflower, changes included:

» **Maize**: 67 SHFs in 2021 → 415 SHFs in 2023
376 MT from SHFs in 2021 → 510 MT in 2023

» **Sunflower**: 75 SHFs in 2021 → 117 SHFs in 2023
64 MT from SHFs in 2021 → 102 MT in 2023

60 Decibels conducted brief phone surveys with 96 SHFs (40% women) who actively supply the processor. In response to the question, "Has the money you earn changed because of the food processor?", **95% of SHFs reported that their earnings "very much increased" (42%) or "slightly increased" (53%) as a result of working with the processor.** Of the 95% who reported increased earnings, 65% mentioned an *increase in volume sold* and 82% mentioned an *increase in price*, while 33% mentioned *reduction in cost* as reasons for higher earnings. One woman SHF noted,

"I use seeds of improved quality and cultivate on more land, all because of the increased profits I am making by selling to [processor]."

VOLUMES SOLD

Of the respondents to the question, "Without the food processor, would you have sold more, less, or the same quantity of produce?" (n = 89), **88% said they would have sold "much less" (45%) or "slightly less" (43%) without the market provided by the processor.**

Of the respondents to the question "Has your farming changed because of the food processor?" (n = 95), **77% reported that their way of farming "very much improved" (26%) or "slightly improved" (51%),** noting improvements in seed and fertilizer availability (44%), increased investment in equipment or labor (22%), and agricultural land and earnings expansion (12%). In response to the question, "Has the total production from your crop changed because of selling to the food processor?" **88% of SHFs reported that total production "very much increased" (35%) or "slightly increased" (53%).** 83% reported accessing storage, 38% reported accessing transport, and 16% reported accessing milling or processing. One male SHF shared,

Owner with employee at maize milling facility in Tanzania. (TechnoServe / Bobby Neptune)

"[Processor] has enabled me to find a reliable market and my income is improving. I no longer stress about finding a market for my harvest."

PRICE

Of the respondents to the question, "Do you think the price offered by the food processor is very good, good, fair, poor, or very poor?" (n = 89), **95% said the price offered by the processor is "very good" (61%) or "good" (34%).**

OTHER

Of the respondents to the question, "Has your quality of life changed because of the food processor?" (n = 95), **93% said that their quality of life has "very much improved" (34%) or "slightly improved" (59%)**. Of the 93% who reported improved quality of life, 53% mention improved ability to afford household expenses; 51% report an increase in income; and 43% report ability to afford assets, such as house, livestock, or farmland. Additionally, of the respondents to the question, "How often does the processor pay on time?" (n = 89), **99% said the processor "always" (83%) or "most times" (16%) pays on time,** and **87% report that the processor is "very trustworthy."**

3. TRANSITIONAL SPICE AND NUTRITIOUS FLOUR PROCESSOR | TANZANIA

COMPANY OVERVIEW

The female-founded and-led company produces spice products using ginger, garlic, and several other raw materials, as well as nutritious flours using white and yellow maize, sorghum, finger millet, and wheat. The company distributes across 10 regions of Tanzania and exports to Kenya.

WHY SHF SOURCING?

The processor was initially buying spices from traders and some SHFs. With traders, however, there was no traceability, sand was mixed in with the spices, quality was not meeting the company's specifications, and it was expensive. Materials from SHFs were more affordable, but they also struggled with quality due to a lack of certified seed, and their yields were low. Unable to access sufficient volumes of quality spices at affordable prices, the company was having trouble meeting market demand for its spice products. The company decided to explore how it might deepen and expand its SHF sourcing model – and reduce its reliance on traders – to increase available volumes of quality, affordable raw materials and meet the high and growing market demand.

SHF CHALLENGES

Though certified seed was available, it was largely unaffordable for SHFs. And despite the existence of government extension staff who provide training for free, their limited transportation budget made it difficult to reach SHFs, leaving many SHFs untrained in GAPs.

AINFP'S SUPPORT

From 2022-2023, AINFP worked alongside the company to identify opportunities to strengthen its work with SHFs, in order for the company to access larger, more reliable volumes of quality and affordable spices while meaningfully benefitting SHFs.

AINFP and the company identified the following interventions:

- Establish contracts with SHF groups vs. individual SHFs.
- In addition to specifying the responsibilities of the company in contracts, also include expectations for the SHFs.
- Incorporate SHFs into bundled services: seeds on a loan basis with cost to be deducted at harvest, and training in GAPs in collaboration with local government extension, with the company to help cover transport costs for extension agents to reach SHFs.
- Partner with input suppliers.

In addition to supporting the company to develop the intervention plan, AINFP helped them initiate implementation of the plan. This included:

- Connecting the company to SHF groups.
- Strengthening contracts with SHF groups by specifying volumes, quality, and price.
- Signing with SHF groups using the improved contract.
- Supporting the company with a successful USD $167,000 grant proposal. The company was awarded working capital and investment funding to: 1) help boost SHF productivity; 2) increase its spice processing capacity by installing a grinder, packaging machine, and processing machine to double capacity; and 3) improve marketing.

ACTIVITIES IMPLEMENTED TO DATE

In addition to the above activities implemented with help from AINFP, the company has:

- Hired an agronomist.
- Coordinated training for SHFs by the input supplier, from planting through harvest.
- Coordinated training for SHFs by the local government extension officers on GAPs, paying an allowance to the officers.
- Set up 2 collection centers operated by SHF groups, where the groups pre-process spices, and installed equipment at the centers including solar dryers and a ginger cutting machine. Services to be provided at the collection centers include: provision of production inputs to be deducted at harvest; production training; rehabilitation of rainfed irrigation canals; offering irrigation pipes at a 50/50 subsidized rate using funds from the secured grant.
- Purchased a new spice grinder and sachet packing machine with grant funds.
- Is paying SHFs a better price for higher-quality spices.

COMPANY IMPACT

In 2023, the company sourced 100% of its spices from SHFs, compared to 80% in 2022. Through establishing structured sourcing with five SHF groups across three regions, the company grew its supplier base from 350 SHFs in 2022 to 500 SHFs in 2023.

Sales revenue from spices has increased 31% from 2021 to 2023, from Tsh 380m (USD $139,000) to Tsh 500m (USD $183,000). The company reports that it is now receiving the volumes, quality, and on-time delivery that it needs, and reported no side-selling issues. They also noted, "Buying from SHFs is cost-effective!" and "If we want quality, we should invest."

PERCEIVED SHF IMPACT

The SHFs supplying this company were not included in the survey by 60 Decibels or in the semi-structured in-person interviews. However, the company notes the following perceived benefits to SHFs:

- An assured and sustainable market
- Access to certified seed and training (proper use of inputs; GAPs)
- Better prices for higher-quality produce
- Improved yields
- Exposure to technology

WHAT'S NEXT?

The company is experiencing quality issues with the grains for its nutritious flours, which it sources from traders. The company's leadership indicated interest in improving grain quality by exploring a SHF sourcing model.

4. FOUNDATIONAL DAIRY PROCESSOR | TANZANIA

COMPANY OVERVIEW

The female-founded and-led family business produces cultured sour milk, ghee, butter, and flavored yogurt, with distribution across three regions of Tanzania.

WHY SHF SOURCING?

The company sources 100% of its raw milk from SHFs because SHFs produce a large majority of the milk in the region where the company is based, and the company was founded to provide a stable market for SHFs. The business buys directly from nearby SHFs and indirectly from SHFs located further from the factory (30-40km) via agents. The Managing Director noted that they see better quality milk from the SHFs they buy from directly, as agents sometimes tamper with the quality.

SHF CHALLENGES

In 2022, the company approached AINFP for support after receiving inadequate volumes and quality of milk from local SHFs. When testing the milk SHFs were delivering to their facility, they detected quality issues due to animal disease, mastitis, use of antibiotics, poor feeding practices, poor farm hygiene, and contamination from use of plastic containers vs. more expensive stainless steel milk containers. As a result of suboptimal quality and limited volumes, the company struggled to meet the fast-growing market demand for its products.

AINFP'S SUPPORT

AINFP worked closely with the company's management team and consulted SHF suppliers to better understand these challenges and identify interventions that could improve the quality and volumes of milk delivered, while generating tangible benefits for SHFs. Together, AINFP supported the company to implement the following:

- Improved its contract, based on company and SHF input, by stipulating roles and responsibilities not only for the company, but also for SHFs. Previously, the contracts only outlined expectations for the company.
- Trained SHFs on the new contract and business planning.
- Established a collection center closer to SHFs and identified a strategic location for a second collection center.

Employee bottles yogurt at a processing facility in Tanzania. (TechnoServe)

The collection centers help to:
1) address quality issues closer to SHFs vs. rejecting their product after SHFs have traveled a distance, and 2) encourage more SHFs to supply the company by being closer to SHF farms, vs. SHFs having to travel up to an hour to deliver milk to the factory. The center has two rooms — one for milk collection, and one for future input sales. Each morning, the company picks up from the collection center with its own small trucks.

» Developed standard operating procedures (SOPs) for collection points, including tests for temperature, smell/taste, and alcohol. One trained staff operates the current collection center to control quality and records quality and quantity from each SHF.

Additionally, AINFP provided the following recommendations based on input from SHFs and the company:

» Invest in relationships with SHFs first, i.e., through providing advice, a reliable market, and access to inputs. These seemed to be greater concerns to SHFs than a higher price.

» Hire a veterinary extension officer to supervise the input shop at the collection center and observe input application.

» Incentivize improved milk quality by offering a higher price for better quality.

» Enable SHFs to supply better quality by:
1) offering quality feeds to SHFs — which is a particular challenge for SHFs during the dry season — and deducting the cost over time as milk is delivered;
2) supplying stainless steel milk containers to SHFs and deducting the cost (≈$60) over time as milk is delivered. In Tanzania, use of plastic containers for transporting milk is prohibited. The containers can be difficult to clean, and milk can react with the plastic, deteriorating the quality of the milk. Having a lump sum of money for inputs is challenging for SHFs, so providing them on credit and deducting the cost over time makes it more feasible.

Further, AINFP assisted the company to submit a successful $50,000 grant proposal. A prerequisite for the grant was to have a structured model for working with SHFs, which AINFP and the company developed together. The grant includes funding for:

» Provision of stainless steel milk containers to up to 300 SHFs to transport milk.

» Establishment of a veterinary input shop alongside the milk collection center for easy SHF access.

» Artificial insemination services for ≈100 SHFs, in collaboration with local government extension services.

Finally, AINFP supported the company to access $16,000 in grant funding for testing equipment and milk cooling systems at collection centers, along with other technology upgrades.

COMPANY IMPACT

Today, the company sources from 105 SHFs (68 directly, 37 via agents). From 2022 to 2023, the company increased purchases from SHFs by ≈31% — noting a reduction in rejections — and reported an increase in annual revenue from ≈$105,000 to ≈$200,000.

SHF IMPACT

While SHFs supplying this company were not included in the survey by 60 Decibels, 7 of them were interviewed in-person to share their experience working with the processor.

Before the company entered the market, the farmers sold their milk to local retail shops and informal markets. They noted that shops were unable to off-take their full supply and — from what they did off-take — would return to them any milk that went unsold. Informal markets were inconsistent. Often, they were paid late or — in some cases — not paid at all, which one farmer said made it difficult to repay loans. Another farmer mentioned supplying a processor for six months, but receiving late payment. Additionally, most of the farmers noted that the market was limited during the cold season.

When asked about the benefits of working with the processor, farmers highlighted **assurance of income/a sustainable market, on-time and convenient payment** directly into their accounts, **good communication**, and **integrity**. One farmer explained how she uses her income: "Some [goes] to my cows, some to my kids' education, and some for daily life". Multiple farmers spoke about the positive personal relationship they have with the company, describing the relationship as "comfortable", "friendly", and adding "they listen". One farmer added that one of the owners "treats [me] like her son". Another farmer mentioned that she recognizes the commitment of the company to help farmers develop, and that she has seen how the company has been growing and an opportunity to improve her production to meet the company's needs. The farmers identified the following services provided to them by the company: advances to buy inputs; help with animal feed; training in husbandry practices and milk handling and hygiene; support with artificial insemination; a link to veterinarians; and on-the-spot support if there is an issue with their milk upon delivery to the company.

Farmers shared how the partnership has impacted them. One farmer was able to buy a house, a truck, and more cows, another farmer is now able to pay school fees for three grandchildren, and another farmer has seen a small increase in her milk production, which she attributes to on-time payment and thus her ability to buy proper feed for her cows. Others highlight improved milk quality. One gentleman shared, "Now when I go to an ATM, I have money", and that he sees an opportunity to buy additional cows.

When asked about the challenges they currently face, farmers highlighted a **lack of working capital, unreliable veterinarians, low-producing breeds, and unsuccessful artificial insemination.** While they acknowledged the opportunity to request a loan from the processor, they said capital remains a problem and described the difficulty of qualifying for a bank loan and the prohibitive interest rates if one successfully qualifies. This lack of working capital prevents them from being able to: buy more cows; buy enough feed or purchase a grass-cutting machine for feed; replace plastic milk containers with stainless steel containers to comply with the law and improve milk quality; build proper storage for feed, which can affect milk quality if wet; access the right vaccinations and medications for their cows; dig a well for access to water during drought periods; and construct proper cow sheds for ease of milking during the rainy season. Regarding unreliable veterinarians, farmers noted incorrect advice and misdiagnoses as key issues.

In addition to these reflections from SHFs, the company's Managing Director identified the following benefits she expects the interventions will generate for suppliers:

- Contracts as a guaranteed and reliable market for SHFs.
- Better prices to SHFs based on improved milk quality. She explained that milk vendors offer a lower price to SHFs compared to what the company is paying.
- Access to inputs (feed, aluminum milk container).
- Reduced delivery time and cost as a result of collection centers.

LEARNINGS

The Managing Director noted the importance of on-time payment to SHFs. Due to limited working capital, the company currently pays SHFs every 30 days directly to their bank accounts, but, with the improvements from the grant funds, they hope to reduce this to 14 days.

WHAT'S NEXT?

The company plans to start providing inputs to SHFs at collection centers based on the volumes they deliver, as an incentive to deliver larger volumes. The Managing Director also mentioned the need to offer more training at the farm level to continue boosting quality; topics include record keeping and milk hygiene, as well as

gender-related themes. She mentioned plans to train 50 SHFs in 2024 in collaboration with the government, noting that the company will cover transportation and allowances for the government trainers. The company also wants to invite banks to attend trainings and offer credit to SHFs. The company's goal is to "scale from the current 1,050 L/day working to midnight, up to 2,000 L/day working until 6pm," and in the coming years, they expect to be independent of loans and grants.

5. ACCELERATOR WHEAT MILLER AND BAKERY | TANZANIA

COMPANY OVERVIEW

The male-founded and-led family business produces bread, confectionery, and wheat flour. It distributes across six regions of Tanzania and exports wheat flour to Rwanda.

WHY SHF SOURCING?

A company Director shared that supporting local wheat SHFs has always been a priority. In 2023, the company purchased ≈60% of its supply from SHFs — ¼ from SHF groups and ¾ of it via brokers. The remaining 40% came from commercial farms and imports from Ukraine, Russia, and Estonia.

The Director pointed to good price and quality (grade, freshness) as key benefits of buying from local SHFs. He shared that most imported wheat is not of high quality, describing it as "second grade wheat from Ukraine, Russia, and now also Estonia that has been stored in a warehouse for a long time and is sent to African countries to free up space to bring in new wheat from their farms." He also noted that the company makes losses when it imports, and only does it to "keep [its] name in the market." The expense for the company is driven in particular from having to transport the imported wheat from Dar es Salaam to its facility, though the war in Ukraine has also driven up the price of all imported commodities.

SHF CHALLENGES

The company shared that wheat has been scarce over the last five years, and that they are nervous about where they will get their wheat in the future. The company Director stated plainly, "I need wheat," and questioned, "How do we get volumes and handle the side-selling challenge?" He explained that 1) they are competing with breweries who are willing to give SHFs seed and fertilizer to produce barley; 2) SHFs are shifting to other crops including pulses, pigeon peas, maize, and sunflower; and 3) "Kenyans are crossing the border to get wheat." The business used to buy 20,000 MT per year from farmers, operating one mill at 100% capacity and the second mill at 40%; however, in 2023, they were only able to get 7,000 MT from farmers. As a result, they shut down one mill, and the other is operating at only ≈50%. The Director added, "Tanzania has enough land and knowledge, but needs to see the potential."

The company has contracts with SHFs and groups outlining quality specifications and volumes, but notes that SHFs do not uphold them; if they can get a better price, they side-sell. The company used to give SHFs financing, seed from the government at-cost, and chemicals, but they paused these services in 2022 in response to side-selling. After receiving inputs, farmers told the company they could not pay due to low production, resulting in a ≈$40,000 loss for the company. Some farmer cooperatives have cleared their debts since then, while other payments are outstanding. The company has also shut down the collection centers it had previously opened.

AINFP'S SUPPORT

AINPF visited the areas where the company has sourced wheat to better understand SHF perspectives there. SHFs expressed the following challenges and needs:

- **Lack of quality seeds:** Input providers are selling seed varieties imported from southern Africa and Kenya, which are not adapted to local climate conditions and are expensive. As a result, SHFs reuse low-quality seed.
- **Low impact of fertilizer:** SHFs are proposing soil testing kits to identify what type of fertilizer they should use. They shared that they are applying a lot of fertilizer but are not seeing good production results.
- **Lack of equipment at cooperative warehouses:** Cooperatives lack moisture testers, scales, palettes, and tarps. Without palettes and tarps, it is a challenge to maintain quality.
- **Non-ideal pricing by the company:** SHFs shared that the company offers a price without considering the market price; therefore, if the market price is higher, the SHFs choose to sell to other markets.

» **Payment delays by the company:** The company shared that, if they are stretched financially, they pay SHFs within 10 days; if they have the money, they pay immediately. They deposit funds directly to SHFs' accounts — rather than using cash — as they sell flour on credit.

AINFP made the following recommendations, based on input from the company and from SHFs:

» **SHF cooperatives should work with the government to produce quality seeds** and sell the seed back to SHFs. After producing a seed variety, they need to test it locally.

» **The company should collaborate with local government authorities to ensure soil testing kits are deployed to the field, i.e., by providing an allowance for extension officers.** The government has already supplied soil testing kits to districts, but local authorities said they lack sufficient budget to go to the field to deliver the kits to SHFs.

» **The company should hire an extension officer** to train SHFs and be on the ground to provide GAP guidance.

» **The company should identify lead SHFs** and train them to be role models for other farmers.

» **The company should work with input suppliers** in a multi-partite model to see how to best provide inputs to SHFs.

In December 2023, AINFP coordinated a stakeholder meeting with the company and ≈30 attendees from the following stakeholder groups: cooperative leaders, input supplier, banks, local government authority from the department of agriculture, local government cooperative office, government organization that coordinates seed production, and insurance companies.

ANTICIPATED COMPANY IMPACT

By increasing volumes of wheat procured from local SHFs, the company seeks to:

» Improve its processing capacity utilization in order to reduce unit cost of production and boost sales/meet market demand.

» Reduce its reliance on expensive, low-quality imports.

ANTICIPATED SHF IMPACT

» By understanding their soil and applying the appropriate type and amount of fertilizer, yields will increase, and production costs will decrease.

» Using quality seeds will not only improve yields but will improve wheat quality, leading to better prices received.

» If quality seed is available, SHFs may choose to expand the percentage of land under cultivation, thereby producing larger volumes and generating higher incomes.

Warehouse at wheat milling facility in Tanzania. (TechnoServe)

Conclusion: How to Create Shared Value in the Food Processing Sector to Tackle Poverty, Food Insecurity, and Malnutrition in Sub-Saharan Africa

Strengthening local supply chains and improving the livelihoods of SHFs — who comprise over 60% of sub-Saharan Africa's population and produce an estimated 80% of its food ingredients — are essential to sustainably reversing trends of poverty, food insecurity, and malnutrition in the region.

SME food processors occupy a critical role at the center of the value chain, both as markets for SHFs and producers of nutritious food products for local consumers. Supporting these enterprises to overcome challenges in raw material sourcing — a key business driver — via commercially viable, mutually beneficial investments in SHF sourcing models, can unlock company growth and sustainably improve both smallholder and SME-based livelihoods. In addition to boosting SHF livelihoods, farmer-level investments and SME food processor growth have the potential to:

» increase the local food supply through improved SHF productivity, reduced losses, and greater volumes of finished product available;

» improve nutrition through better food quality and safety; and

» strengthen food system resilience by reducing reliance on imported raw materials, among others.

HOW DO WE DO IT?

How can we as a global community expand and improve support to SME food processors in sub-Saharan Africa to solve raw material sourcing challenges in ways that sustainably strengthen SHF livelihoods, increase the local food supply, and improve diets? Based on the lessons learned from AINFP, we present five recommendations as guidance to NGOs, donors, financiers, and food processors.

NGOS & DONORS

Build the capacity of SME processors to design and execute inclusive raw material sourcing strategies.

Capacity building areas include:

» Identifying adjustments to and investments in SHF sourcing models that could benefit both processors and their SHF suppliers, including interventions that address gender inequalities. When presented with a strong business case and clear direction, processors can and will adopt practices that reach and benefit both women and men SHFs.

» Quantitative modeling of the projected benefits of proposed interventions for processors and SHFs based on financial statements, interviews, observations, and other data.

» Planning and operationalizing the interventions.

» Monitoring the benefits of the interventions for processors and SHFs.

Hiring local talent (staff or consultants) to carry out the above functions will be too expensive for most agri-SMEs; therefore, there is an opportunity to create and fund more platforms like AINFP that enable NGOs to engage local talent to work alongside agri-SMEs to develop and execute inclusive sourcing strategies.

Inclusive sourcing strategies must be mindful of the financial constraints of SME processors. When supporting SMEs to develop these plans, consider "bite-sized", incremental investments that account for the companies' access to finance capacities and the local financier landscape.

DONORS AND FINANCIERS

Help create blended finance mechanisms that facilitate the flow of working capital to SME processors.

Initiating or strengthening a SHF sourcing model requires capital; however, one of the biggest challenges for SME processors is a lack of working capital. It is particularly a challenge for processors in highly seasonal value chains, where — to get the best price and ensure availability of supply — they have to buy their full supply in bulk at harvest. If buying from SHFs, this often requires payment upon delivery and in cash — a large amount of money at once. Access to finance with favorable terms can enable SME investment in SHF supply chains and accelerate the speed of the investment, thus speeding up the impact.

Collaborating with local financial institutions to develop appropriate finance mechanisms for SME food processors looking to invest in SHFs, and identifying or developing impact investing and grant opportunities for these SMEs, can catalyze impact.

NGOS AND DONORS

Develop simple, low-cost impact tracking tools and build the capacity of SME processors to implement them.

Develop simple and low-cost tools to monitor the benefits of SHF sourcing model investments for both processors and SHFs. If either the SME or the SHFs do not see a clear benefit of the relationship/investment, it is unlikely to continue. Measurement and evidence are key for sustainability. Consider building SME capacity to track impact for the company and working with SMEs to develop a mechanism to gather feedback from SHFs regularly.

FOOD PROCESSORS AND NGOS

Consider partnerships to spread the cost and time requirement of building and optimizing SHF sourcing models.

By partnering with other players (i.e., input providers, government extension services, existing agent infrastructures, NGO activities supporting SHFs), SMEs can reduce their own resource requirement to initiate or strengthen a SHF sourcing model. This also allows for each partner to play to its strengths. By mapping existing resources, SMEs and those supporting them can identify key gaps (e.g., the government has soil testing kits but lacks funds for fuel to distribute them) and focus their resources on closing those gaps. A key step is bringing stakeholders together "at the table" to understand the needs and requirements of each party. Note that partnerships can also add greater complexity and reduce the degree of control that a processor has over the functioning of its SHF supply model; thus, potential partnerships should be weighed carefully.

Employees preparing chili peppers to make sauce at a processing facility in Malawi. (TechnoServe)

NGOS AND DONORS

To maximize long-term development impact, focus on value chains and markets where inclusive raw material sourcing models have the highest potential.

Key characteristics of high-potential value chains and markets include:

- quality, variety, origin, and/or traceability are valued (that is, not pure commodities);
- a significant number of SHFs produce for commercial purposes; and
- SHFs produce (or can produce) the varieties commonly required by processors.