



# FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



## Feed the Future Mozambique Promoting Innovative and Resilient Agriculture Market Systems Activity (FTF Premier)

Cooperative Agreement No. 72065622CA00006

### Assessments Summary Document

January 30, 2023



**USAID**  
FROM THE AMERICAN PEOPLE

  
**TechnoServe**  
Business Solutions to Poverty

## **Contents**

---

<b>Introduction</b>	3
<b>Identifying High-Potential Market Opportunities in the Nacala Corridor</b>	4
<b>Overview of Value Chain Prioritization Methodology</b>	6
Step 1: Assess End Market opportunities	7
Step 2: Identify Top Opportunities for Value Addition	9
Step 3: Consider Potential for Impact and Scale	11
Composite Analysis	12
<b>Commodity Highlights</b>	13
Maize	14
Soybean	15
Cashew	16
Pigeon Pea	17
Sesame	17
Cassava	17
Groundnuts	19
Common Beans	20

## Introduction

The agriculture-based economy of Mozambique presents unique challenges that threaten the country's overall competitiveness and growth prospects, as well as the livelihoods and food and nutritional security of its 32 million citizens.

Firstly, the country is prone to climate-induced shocks and crises, such as cyclones, floods and drought, which negatively impact agriculture and livelihoods. The latest Global Climate Index assessed Mozambique as the African country most vulnerable to climate change, reporting that the country suffered \$4.9 billion in losses due to cyclone activity in recent years.

At the same time, conflict and insecurity in Cabo Delgado have further exacerbated the challenge, leading to significant displacement, disruption of livelihoods, lack of access to basic services, and high levels of acute food insecurity. Accordingly, Mozambique's ranking in the Global Fragility Index has been steadily declining since 2014. In recognition of these developments, the United States in 2022 designated Mozambique as a priority country for support under the Global Fragility Act (GFA).

Despite these significant challenges, Mozambique has many strengths that, if harnessed, could drive sustained and inclusive transformation. Agriculture remains the country's main economic activity and its agro-ecological diversity offers compelling opportunities to support food security, and its strategic geographical position allows it to play an important role for agricultural trade with the neighboring landlocked countries.

Other factors that create opportunities for agricultural growth are the rapid urbanization that spurs even more rapid growth in demand for food, including value added processed foods and animal foods; and substantial investments in roads over the past five years with at least some major improvements in road access<sup>1</sup>.

It is within this context that the Feed the Future Mozambique Promoting Innovative and Resilient Agriculture Market Systems (FTF Premier) operates. FTF Premier is a five-year, \$25.5 million market systems activity that seeks to seize on opportunities to work with local market actors, increasing the resiliency of the agricultural market system in the Nacala corridor to absorb, adapt, and respond to external climate, economic, and political shocks; to reduce poverty; and to improve food security. FTF Premier is implemented by TechnoServe with strategic implementing partners DAI, ELIM and Partners in Food Solutions.

---

<sup>1</sup> Analysis to Guide USAID/MOZAMBIQUE programmatic investments in agriculture and food nutrition security, March 2021

FTF Premier will focus on seven districts (Cuamba, Balama<sup>2</sup>, Gurué, Meconta, Malema, Nampula and Nacala) in four provinces (Nampula, Zambezia, Cabo Delgado and Niassa) of the Nacala Corridor, although it considers the entire Nacala corridor as the Zone of Influence.

The project expects to achieve the following results:

- Increase incomes by an average of 30% and/or improve employment for over 100,000 individuals, including 26,700 women and youth.
- Generate \$58M in annual sales by supported agribusiness firms and farmers.
- Facilitate \$6M in new inclusive contracts for agribusinesses to reach 100,000 smallholder farmers (SHFs).
- Produce 65,000 MT of nutritious food.

Through its facilitative approach FTF Premier will support a variety of market actors to seize on value-adding opportunities that will attract additional private sector investment into the corridor. FTF Premier will implement a facilitative market systems development (MSD) approach driven by three core components:

- Support agricultural firms to expand local value addition in value chains with growing and attractive opportunities in export and local markets;
- Support small and medium enterprises (SMEs) and smallholder farmers to expand their opportunities to access markets and increase production and productivity; and
- Improve the capacity of local third-party service delivery partners to provide business, financial and finance, and technical advisory services, and assistance to agribusiness enterprises.

### **Identifying High-Potential Market Opportunities in the Nacala Corridor**

FTF Premier defines the Nacala Corridor as starting at the port of Nacala and covering the entire Nampula province as well as the adjacent districts of Zambézia, Niassa, and Cabo Delgado. The corridor's 27 districts are home to around 7.5M people, of which over 80% are employed in agriculture, and more than half are under the age of 24. While most agricultural production is for subsistence (primarily maize and cassava), the corridor exports most excess production of raw cashew nuts, sesame, and pigeon peas. The population relies on nutrient-poor diets, leading

---

<sup>2</sup> Balama is on hold due to the insecurity situation in Cabo Delgado. FTF Premier will include Alto Molocue as an eighth focus district

to nearly 50% of children under 5 years old affected by stunting; the northern provinces also register the highest levels of food insecurity, with Cabo Delgado hosting 50 percent of the country's food insecure population.<sup>3</sup>

Despite pockets of nascent agro-processing industries, businesses still face several systemic barriers to becoming competitive. Mozambique's vast size and poor transport infrastructure isolate the corridor from the rest of the country, causing high business and operating costs. It often costs more to move goods between the North and South than to transport the same goods to and from Asia, which incentivizes exports of locally produced raw material and forces retailers to rely on imports. Southern Mozambique imports both raw and processed agricultural products from South Africa, most of which are unavailable or very expensive in the North.

Hundreds of agri-SME producers, input suppliers, and distributors operating in the corridor are generally unsupported and face barriers to growth. Without the networks, resources, and skills to identify pathways for growth, businesses often miss opportunities to better serve current customers, access new markets, and scale repeatable business models to become profitable.

FTF Premier's approach centers on facilitating support to primarily private sector actors through three main components: a) exploit attractive market opportunities where the Nacala Corridor has a comparative advantage, b) catalyze and expand local agro-processing industries, and c) work with and through local third-party service providers as delivery partners. To ensure the long-term financial viability of agricultural firms, FTF Premier is focusing on attractive market opportunities for high potential raw crop and processed food products within international and regional export markets, and national urban and local food markets. The project's objective is to identify multiple pathways for producers, processors, and related service providers to exploit a sustainable comparative advantage.

Preliminary assessments suggested that eight commodities may offer attractive market opportunities in the corridor that align with Premier's objectives to promote end market diversification and local value addition.



**Maize**



**Soy**



**Cassava**



**Cashew**



**Sesame**



**Pigeon  
Pea**



**Common  
Beans**



**Groundnuts**

---

<sup>3</sup> UNICEF, "Mozambique Overview," 2022



During the first four months of the project, a dedicated team has been analyzing these value chains with the objective to confirm a portfolio of agricultural commodities where the Nacala Corridor has a comparative advantage; this will then guide FTF Premier's future investments and activities.

### **Overview of Value Chain Prioritization Methodology**

The team assessed the 8 commodity value chains and end markets and mapped the agro-processing industry to determine opportunities for local value addition. These studies were the basis for confirming the portfolio of commodities following three steps:

Step 1: End Markets opportunities: current and projected domestic demand in the corridor and national urban markets (incl. import substitution) and demand from regional and global export markets for which the Nacala Corridor offers a comparative advantage.

Step 2: Opportunities for Value Addition: Based on current production volumes, quality, and prices, including the total number of small-scale producers in the Nacala Corridor and opportunities for value addition for each commodity, assess the overall competitiveness of both Mozambique and the Nacala Corridor to produce, process, and market (e.g., production cost and major cost drivers, prices and price seasonality, and key drivers of price fluctuations).

Step 3: Potential for Impact: determine agricultural commodities that offer significant opportunities for marketable and differentiated value addition, nutrition, climate resilience, and the inclusion of smallholders, women, and youth.

## Step 1: Assess End Market opportunities

The FtF Premier team leveraged primary and secondary datasets to apply two strategic, demand-driven lenses through which to prioritize the eight commodities (and their derivative products). This featured:

- **1A:** Fulfill current and projected domestic demand in the corridor and national urban markets through improved value chain efficiency, optimization, and coordination, as well as import substitution strategies.
- **1B:** Allow Mozambique to capitalize on current and projected demand from regional and global export markets for which the Nacala Corridor offers a comparative advantage.

Growth Outlook	Commodity	Considerations
High	Soybean	<ul style="list-style-type: none"> <li>• <i>Large and growing export and domestic market opportunities.</i></li> <li>• Medium to long-term potential to supply the domestic animal feed and edible oil markets, with estimated annual demand of 30,000 MT for feed and 200,000 MT for oil.</li> <li>• India is currently importing significant quantities of soybean from Mozambique, and there is potential for increased trade volume.</li> </ul>
High	Maize	<ul style="list-style-type: none"> <li>• <i>Large and growing domestic market opportunities.</i></li> <li>• Strong demand for maize in the form of maize flour and feed in the north as witnessed by the increase in processing facilities.</li> <li>• Nascent and more limited growth potential in domestic brewing and maize grits end markets.</li> <li>• No immediate opportunities to export; Mozambique is a net importer of maize.</li> </ul>
Med	Cashew	<ul style="list-style-type: none"> <li>• <i>Attainable export market opportunities.</i></li> <li>• Demand for RCN and whole kernels with the skin on continues to originate from Vietnam and India, as world's major processors and exporters.</li> <li>• Highly competitive with other cashew-producing markets and hampered by supply-side challenges, such as aging tree stock.</li> </ul>
Med	Sesame	<ul style="list-style-type: none"> <li>• <i>Highly targeted export market opportunities.</i></li> <li>• Demand for sesame from Mozambique has grown significantly with an increasing number of exporters committed to the crop. Mozambique exports most (83%) of its sesame to China, which represents the primary export market for growth.</li> <li>• Domestic market for sesame oil is limited in Mozambique.</li> </ul>

Growth Outlook	Commodity	Considerations
Med	Pigeon Pea	<ul style="list-style-type: none"> <li>• <i>Highly targeted export market opportunities.</i></li> <li>• Since 2020, Mozambique has become India's largest supplier of pigeon pea, accounting for between 30% to 50% of India's total imports, depending on the year.</li> </ul>
Med	Cassava	<ul style="list-style-type: none"> <li>• <i>Limited domestic market opportunities.</i></li> <li>• Common end uses within domestic markets include cassava wet cake for brewing and cassava flour; however, both have minimal demand growth.</li> <li>• In Mozambique, cassava is predominantly consumed at the household level or transported into town for sale mostly on the informal local markets.</li> </ul>
Low	Groundnuts	<ul style="list-style-type: none"> <li>• <i>Limited domestic market opportunities.</i></li> <li>• In 2020, groundnut producers sold only 21% of their production, Of that, 80% was traded domestically and 20% exported.</li> <li>• Domestic end markets for groundnuts are both informal street retailers and formal retail channels.</li> <li>• Export to North American and European consumer markets is restricted due to quality standards not being met by the Mozambican groundnuts sector, especially those related to aflatoxins.</li> </ul>
Low	Common Beans	<ul style="list-style-type: none"> <li>• <i>Limited domestic market opportunities.</i></li> <li>• Common beans exports from Mozambique are insignificant, between 2016 and 2021, Mozambique never exported more than 3.5 thousand tons, going mainly to South Africa, Eswatini, United Arab Emirates Nepal and Thailand</li> <li>• Data indicates that the informal domestic market is the end market for the common bean produced locally.</li> </ul>



## Step 2: Identify Top Opportunities for Value Addition

Value-added agriculture is an important strategy to increase economic returns at multiple stages of the value chain, and is especially important in undifferentiated commodity markets.

In the context of value addition, Mozambique presents a unique set of challenges and opportunities due, in large part, to its vast size and poor storage and transport infrastructure. The country's food processors – especially the larger processors – are concentrated in the south of the country, while agricultural production is concentrated in the north. Infrastructure challenges and economics of transporting produce from north to south lead to southern processors importing raw materials from South Africa or other countries, while produce from the north is often exported raw, with little or no value addition in the country. Over 90% of the soy, sesame and pigeon pea produced in the Nacala corridor is exported raw out of Mozambique each year, depriving local market actors of the opportunity to perform critical value addition roles.

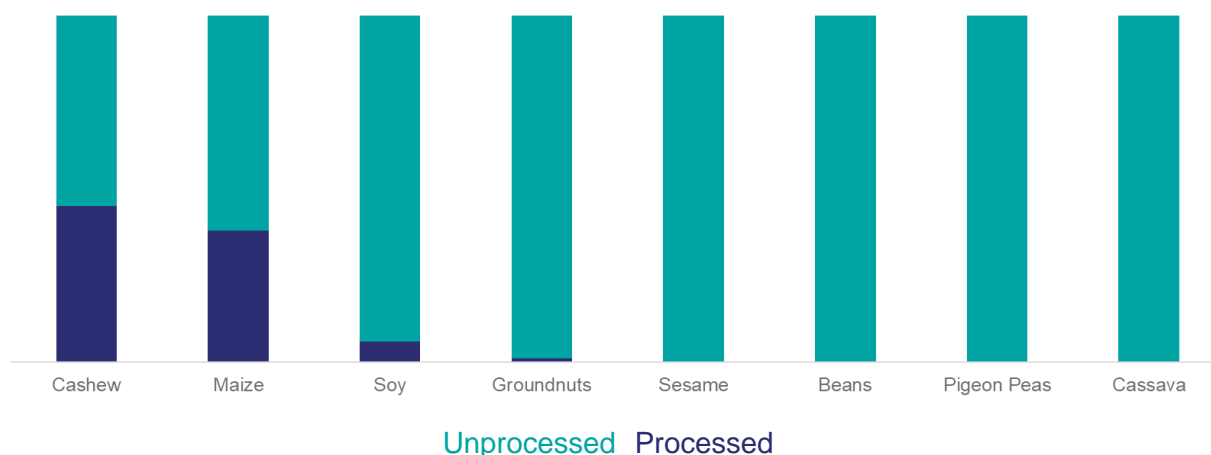
FtF Premier used the commodity value chain assessments and the agro processing industry mapping to:

- **2A:** Map key determinants of and opportunities for value addition for each commodity, including a detailed profit margin analysis.
- **2B:** Assess overall competitiveness of both Mozambique and the Nacala Corridor to produce, process, and market (e.g., production cost and major cost drivers, prices and price seasonality, and key drivers of price fluctuations).

Priority	Commodity	Considerations
High	Soybean	<ul style="list-style-type: none"><li>● <i>Significant opportunities for value addition.</i></li><li>● Support feed processors with technical assistance and strengthen abilities to compete with importing soy cake; support nascent soy oil processors to develop markets and efficient distribution systems for soy oil to maximize their competitiveness and growth; explore and support niche opportunities to develop other soy products, such as CSB, soy chunks.</li></ul>
High	Maize	<ul style="list-style-type: none"><li>● <i>Significant opportunities for value addition.</i></li><li>● Opportunity to support small-medium mills with professionalizing operations and improving quality standards; support larger processors with quality standards and relevant certifications.</li></ul>
Med	Cashew	<ul style="list-style-type: none"><li>● <i>Significant opportunities for value addition.</i></li><li>● Develop further processing and exports to South Africa of both primary and secondary processed cashews; develop higher-end branded primary/secondary processed cashews for markets demanding traceability.</li></ul>
Med	Cassava	<ul style="list-style-type: none"><li>● <i>Limited and highly targeted opportunities for value addition.</i></li></ul>

		<ul style="list-style-type: none"> <li>• The industrial use of cassava in Mozambique is estimated to be less than 0.5% production.</li> <li>• Although there is high theoretical potential to develop a processing sector to develop a range of products, from cassava-based beer to cassava flour to ethanol to animal feed, in practice there are many barriers.</li> </ul>
Low	Sesame	<ul style="list-style-type: none"> <li>• <i>Limited opportunities for value addition.</i></li> <li>• Mozambique currently exports 98% of all sesame production, most of it as low quality, undifferentiated, unprocessed raw sesame primarily for oil crushing.</li> <li>• The vast majority of these exports are destined for China, the world's largest importer of sesame.</li> <li>• No industrial crushing plants for sesame oil currently exist in Mozambique.</li> </ul>
Low	Pigeon Pea	<ul style="list-style-type: none"> <li>• <i>Limited opportunities for value addition.</i></li> </ul>
Low	Groundnuts	<ul style="list-style-type: none"> <li>• <i>Limited opportunities for value addition.</i></li> </ul>
Low	Common Beans	<ul style="list-style-type: none"> <li>• <i>Limited opportunities for value addition.</i></li> </ul>

### Percentage of Production Processed in the Nacala Corridor, Est. 2022<sup>4</sup>



<sup>4</sup> Sesame and pigeon pea are cleaned/graded/packed before export and some beans are cleaned/graded for sale to domestic market; however, this is not defined as processing for this analysis

### Step 3: Consider Potential for Impact and Scale

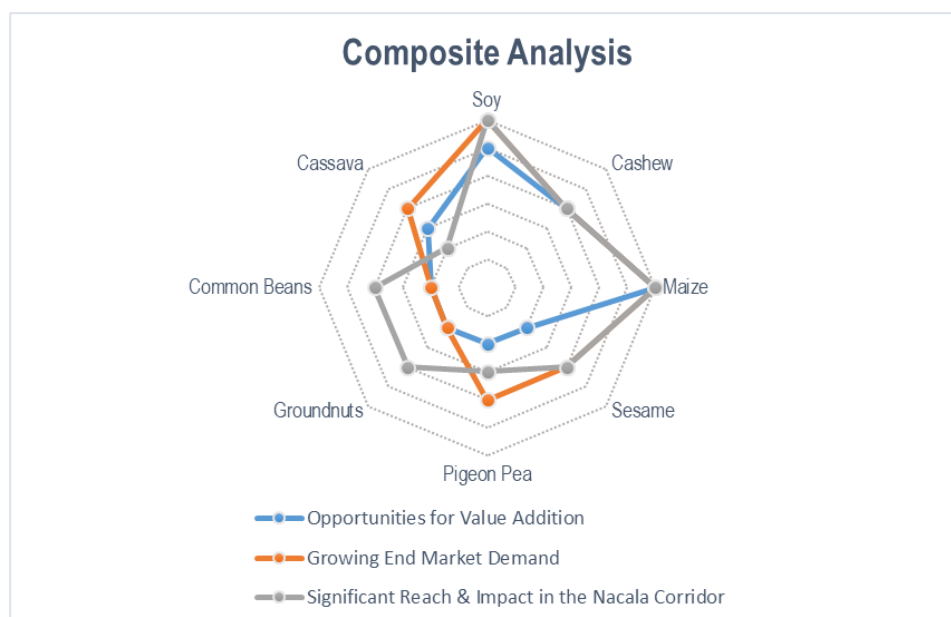
Utilizing the output of each analysis to prioritize commodities, the project assessed how each of these agricultural commodities offer differing opportunities for reaching a significant number of smallholder farmers, ensuring positive profit margins, and addressing cross-cutting needs around nutrition and climate resilience.

	Maize	Soy	Cassava	Cashew	Sesame	Pigeon Pea	Common Beas	Groundnuts
<b>Immediate Reach</b> Est. producers in target districts <sup>5</sup>	200,000	16,000	90,000	16,000	33,000	33,000	83,000	83,000
<b>Expanded Reach</b> Est. producers in Nacala Corridor	1.7M	52,000	1.2M	200,000	300,000	300,000	560,000	560,000
<b>Farmer Livelihoods</b> Est. average profit (MZN/Ha)	1,500 to 4,500	20,000	3,500	3,000	20,000 to 30,000	7,500 to 13,000	15,000 to 25,000	2,000 to 8,000
<b>Impact on Food &amp; Nutrition in the Nacala Corridor<sup>6</sup></b>	Medium	Low	Medium	Medium	Low	Low	High	Medium
<b>Relative Climate Risk</b>	High	High	Medium	Medium	High	Medium	High	Medium
<b>Value Addition Opportunities</b>	<ul style="list-style-type: none"> <li>• Flour</li> <li>• Feed</li> <li>• Grits</li> <li>• CSB</li> </ul>	<ul style="list-style-type: none"> <li>• Feed</li> <li>• Edible oil</li> <li>• CSB</li> <li>• Soy-based food and beverage products</li> </ul>	<ul style="list-style-type: none"> <li>• Wetcake</li> <li>• HQCF</li> <li>• Feed</li> </ul>	<ul style="list-style-type: none"> <li>• Semi-processed kernels</li> <li>• Roasted nuts</li> <li>• CNSL</li> </ul>	<ul style="list-style-type: none"> <li>• Color-sorted lots</li> <li>• Edible oil</li> <li>• Flour</li> </ul>			

<sup>5</sup> Includes all segments of producers (SHF and emerging commercial and entrepreneurial farmers) within FtF Premier's targeted districts

<sup>6</sup> Assessment takes into account general nutritional density of the commodity in addition to the current and projected levels of consumption in the Nacala Corridor

## Composite Analysis



	Opportunities for Value Addition	Growing End Market Demand	Significant Reach & Impact in the Nacala Corridor
<b>Soy</b>	High (2.5)	High (3)	High (3)
<b>Cashew</b>	Medium (2)	Medium (2)	Medium (2)
<b>Maize</b>	High (3)	High (3)	High (3)
<b>Sesame</b>	Low (1)	Medium (2)	Medium (2)
<b>Pigeon Pea</b>	Low (1)	Medium (2)	Low (1.5)
<b>Groundnuts</b>	Low (1)	Low (1)	Medium (2)
<b>Common Beans</b>	Low (1)	Low (1)	Medium (2)
<b>Cassava</b>	Low (1.5)	Medium (2)	Low (1)

The overall ranking using the 3-step methodological approach proposed suggests a range of priorities for FTF Premier investment and activities.

- We conclude that maize and soybeans offer high potential for large-scale reach and significant farm income, respectively, as well as multiple opportunities for value addition, especially maize, driven by strong end market demand from the feed sector.
- Sesame, groundnuts, and cashew show average potential for growth yet a mixed outlook for increasing value addition due to global competition related to primary and secondary processing.
- Common beans, pigeon peas, and cassava offer limited opportunities for growth across all three domains, even with the ongoing yet unpredictable opportunities for pigeon pea exports to India.

## **Commodity Highlights**

### **Maize**

Mozambique's maize sector is dominated by local production, with imports accounting for no more than 10-12% annually. It is the staple crop of choice for most households in Northern Mozambique and the second leading source of calories, after cassava. As such, maize is also a priority crop for most smallholder farmers because it meets household food requirements while also being an easily marketable commercial crop for any surplus. Because it is grown by a majority of households, there is a vibrant market for maize in the target districts offering points of leverage to impact the population of the Nacala Corridor.

The maize value chain has been evolving over the past several years and is becoming more competitive. In addition to an increasing number of commercial farmers and CATs and greater availability of inputs, there are increasing numbers of small maize mills, pushing up prices paid to SHF, while bringing down the cost of maize flour to the consumers.

Despite the entry of new actors and more formal market opportunities, the value chain analysis has identified that significant challenges remain, such as low profitability for farmers, low yields, poor quality and poor agronomic practices.

For Mozambique's maize production system to supply a growing modern milling industry at all, and to supply traditional markets more reliably and at lower cost, productivity and quality must be substantially raised. To do this under the current production and marketing structure requires major investments in improved seed systems, broader input systems, and extension. Currently, Mozambique ranks near the bottom of Sub-Saharan African countries in crop productivity, and there are significant quality issues related to early harvesting and moisture content. Systems need to be installed at farmer level, buying point and processor levels to address these and other quality issues.



## **Soybean**

Soybean production started in Mozambique in 2005 with the primary objective of supplying stock feed for the poultry sector. This remains an important end market use for the crop but, since 2017, a second major end market emerged: exports of raw soybeans to India. The volume and value of these exports increased steadily, marked by a dramatic increase in 2021. This sustained demand has led to a rapid increase in farm-gate prices, rising over 50% between the 2020 and 2021 seasons to MZN 32/kg (USD 500/ton), and crowding out poultry producers from buying local soy for feed and driving them to source soy cake from Malawi. Today, it is estimated that approximately 95% of soybeans are being exported raw to India, due to the appreciation in global soy prices and relative attractiveness of the export opportunity compared to the local processing market.

Locally processed edible oil also represents an emerging growth opportunity, with two new soybean pressing plants established in Cuamba in 2021 and 2022. However, current imports of crude palm oil, primarily from Malaysia and Indonesia, threaten the competitiveness of domestic oil processing at scale.

Additionally, the current dynamic, with the increasing export of soybean to India, is benefitting the SHF with much higher prices and fueling more farmers to commit to the crop. However, the new channel is starving the market for processed soybean in Mozambique, which cannot afford the new farm gate prices. This is limiting the development of a deeper and more diversified soybean industry that can contribute to greater food and nutritional security in Mozambique, employment creation and import substitution.

Soybean is highly relevant to FTF Premier as a crop which is already grown widely in the Nacala Corridor and for which various growth and improvement opportunities exist. This assessment demonstrates that there are multiple entry opportunities for FTF Premier to address sector-wide inefficiencies by applying a market systems development (MSD) approach. By co-creating solutions with lead firms and SME agribusinesses they can promote commercially driven access to inputs, to promote improved supply chain management and improved capacities of the SMEs and farmers. For example, improved seed and inoculant, essential for high yields, are still largely unavailable in local shops and most farmers can only source these from district centers.

## Cashew

The cashew nut sector has always been considered important for Mozambique due to its ability to provide rural employment: the industry directly employs an estimated 20,000 workers and supports about 1.4 million farming families. Almost all of Nampula province's 19 districts produce cashew nuts; most significant among these are Mogincual, Angoche, Mogovolas and Moma. Overall, the province accounts for 50% cashew production and has the largest concentration of cashew processing plants.

Average productivity of cashew trees is reported to be 6.8 kg/tree which is substantially lower than competing countries like the Côte d'Ivoire which average 16 kg per tree. There is an opportunity to further increase cashew yields by introducing improved planting material and performing appropriate crop management, particularly the control of pests and diseases. For example, currently only 8% of cashew producers in Nampula (mostly the medium to large scale farmers) have sprayed their trees. There is an opportunity to engage commercial service providers to drive access to input markets and sustainably increase productivity.

Beyond production, there has been a significant contraction in the number of processors coming out of the COVID pandemic, as world market conditions, weak management capacity, and high rates of cost of capital in Mozambique have put many processors under financial stress. The number of processors has reduced from 22 to 9, as of late 2022. As a result, cashew processing capacity is significantly under-utilized. The cashew processing capacity in Nampula is around 106,850 ton of RCN but the industry is only planning to process 47,811 tons (IAM, 2022).

Increasing investments by the Vietnamese, the world's largest importer of raw cashews and exporter of whole kernel, to meet changing market dynamics and import requirements in consumer markets are exerting continued pressure on Mozambique's weaker processing industry. Specifically, the Vietnamese cashew industry has invested in enhanced processing technology over the last few years, which has stimulated demand in Vietnam for whole kernels with the *skin on* – a much lower value product – to finish before exporting as whole white kernel. Several of the leading Mozambican processors have now responded to this demand and about 35% of Mozambique's exports are now going into Vietnam for secondary processing.

## **Pigeon Pea**

Mozambique witnessed a remarkable growth in pigeon pea production in the last two decades, rapidly turning it into one of the country's main cash crops and agricultural exports. On the back of growing Indian demand, various international development agencies partnered with the private sector to promote pigeon pea production among Mozambican farmers. Production expanded rapidly, reaching 200,000 tons in recent years and over USD 150 million in value, making pigeon pea the third largest agricultural export, after tobacco and sugar.

Opportunities within the pigeon pea sector are very limited; beyond exports to India, which is subject to unpredictable quotas and tariffs. Since 2020, Mozambique has become India's largest supplier of pigeon pea, accounting for between 30% to 50% of India's total imports, depending on the year.

## **Sesame**

Suited to diversified smallholder production systems, sesame is a short-duration crop that has been among the most profitable and increasingly relevant income-earning value chains for producers in Mozambique. According to the newly created Cotton and Oil Crops Institute (IAOM), in 2021, there were, nationwide, about 98,000 smallholder farmers producing sesame, in an estimated area of about 290,000 hectares. Although sesame can be grown by any type and size of farmer, the crop is mainly produced by smallholder farmers, primarily in Sofala, Zambezia, Nampula and Cabo Delgado provinces. The analysis estimates that approximately 80% of sesame farmers are located in FTF Premier target provinces. Total production in 2021 was estimated as being 157,000 metric tons, with an average yield of 541 kg/ha..

Mozambique currently exports 98% of all sesame production, most of it as low quality, undifferentiated, unprocessed raw sesame primarily for oil crushing. Sesame is fast becoming an important component of Mozambique's agricultural exports (fourth largest by value after tobacco, sugar, and pigeon peas), with an increasing number of exporters committed to the crop. China is the world's leading importer of sesame, with about 50% of the world market, followed by Turkey and Japan. Mozambique exports most (83%) of its sesame to China, with Japan a distant 2nd. Mozambique ranks 8th in terms of suppliers to China, and there is likely an opportunity for increase in exports. Demand is also growing in the United States, Middle East, and Asia for processed sesame products, which could provide a future target market.

## **Cassava**

Cassava is one of the most widely grown crops in Mozambique, but the sector faces significant obstacles to becoming more competitive. More than 40% of all farms in Mozambique—and more than 80% of farms in Nampula province—grow cassava. The crop forms an important part of the local diet, can be stored for significant periods of time, and has greater climate resistance than many crops. Overall, more than 2.5 million people nationally, and 1.2 million people within the Nacala Corridor, produce the crop.

However, these farmers have few market opportunities to sell their cassava. The industrial use of cassava in Mozambique is estimated to utilize less than 0.5% of production. Although there is high theoretical potential to develop a processing sector producing a range of products from beer to high-quality cassava flour to starch to ethanol to animal feed, in practice there are many barriers, and most cassava processing in Mozambique is traditional, requiring chipping, soaking to rinse out the cyanide, drying and then grinding into flour. This is highly labor-intensive, low-profitability work. The predominant processing is toll processing, where households bring their cassava that they want to consume for the week to the mill to be ground. The short shelf life of fresh cassava also limits sales in urban areas.

While FTF Premier's analysis did not identify promising opportunities for sector-wide transformation, there are opportunities for specific processors in sectors such as beer production to invest in improving farmers' access to high-quality stems and inputs in order to improve yields and quality, as well as make investments in logistics infrastructure that would enable farmers to supply processing facilities.

## Groundnuts

Groundnut production is dominated by smallholder farmers who produce for their own consumption and market any surplus. For instance, the analysis showed that only 21% of producers sell groundnuts to external agents outside the community. Groundnuts are grown in almost all regions of Mozambique, usually under a mixed-crop subsistence production system. Nampula province is the largest producing area, accounting for 35 percent of Mozambique's groundnut area, more than half of its producers (56%), and 45% of its production (IAI, 2020). The average area cultivated is less than a third of a hectare. Yields in Mozambique vary by location and varieties but are generally low; the average yield of the small groundnut, known as Nametil, is around 300 kg/ha while the larger variety is 270 kg/ha. These yields are far below attainable yields.

The lack of smallholder awareness and/or understanding of aflatoxin is widespread. As a result, smallholders have limited knowledge of suitable aflatoxin controls, good agricultural practice and best practice post-harvest crop management, and thus have no improvement incentive.

Groundnuts are mostly traded through informal and underdeveloped market systems, where most traders and processors do not engage farmers in formal contract farming arrangements. Although Mozambique has not invested in adding value to groundnut to fully exploit market opportunities, groundnut today is processed at the household level, typically by women. They process groundnut into oil, groundnut cake, paste, roasted groundnuts and other groundnut based products.

Beyond domestic consumption, Mozambique exports groundnuts primarily to Indonesia and South Africa. Combined, these two countries represented a 90% share of groundnut exported from Mozambique. After increasing exports significantly over the period 2016 to 2018, there has been a sharp decline in the quantity of groundnuts exported in both volume and in value. Internationally, Mozambique exports of groundnuts spiked to reach a peak of 26,141 tons in 2018, valued at USD 23 million. Most of this was exported to Indonesia. Since then, exports have since been in decline: dropping to 7,198 tons (USD 48.5M) in 2019 and again in 2020 to 5,067 tons.

The global demand for groundnuts is growing. It presents ample opportunities for Mozambique to export groundnuts. Unfortunately, aflatoxin remains the single greatest impediment to export of Mozambican groundnuts to European and USA markets. Improving pre- and post-harvest handling of groundnuts will be crucial to be able to reduce the levels of aflatoxins to acceptable levels. The dissemination of good agricultural practices; awareness campaigns about the risks of consumption of aflatoxin contaminated groundnuts as well as price incentives for low level aflatoxins in groundnuts and most importantly the production of the market demanded

groundnut varieties represent opportunities for growth.

### **Common Beans**

Common beans are an important dietary staple for households in Mozambique and across southern Africa. Mozambican farmers produce 66,800 MT of common beans every year, with more than 40% of the production occurring in the Nacala Corridor. Just 35% of the common beans grown in the country are sold, with the remainder consumed at home. It's estimated that some 88,000 farmers—overwhelmingly cultivating small farms—grow common beans in the four provinces, and women have a leading role in the production of the crop.

There are significant obstacles to securing better livelihoods through the common bean value chain. Marketing of the crop, when it is sold at all, is highly informal, carried out through small local traders making spot purchases, and commercial aggregators have expressed little interest in the crop due to the informality of the market. While production has increased over the past 20 years, a lack of high-quality seed and other inputs limits yields. Without sustained demand and related market information, farmers also do not produce the variety or quality of crop that higher-value buyers would require.

FTF Premier identified several potential approaches to improve the opportunities in the value chain. More formal market channels would help farmers meet the unmet demand in both larger Mozambican cities and export markets in South Africa, as well as facilitate market information back to farmers. Meanwhile, improving the availability of high-quality seeds and other inputs would also enable farmers to intensify production and achieve higher yields.