

MozaCajú Impact Report

DECEMBER 2017

Funded by

USDA

United States Department of Agriculture

Implemented by

TECHNOSERVE
BUSINESS SOLUTIONS TO POVERTY

AGA KHAN FOUNDATION
An agency of the Aga Khan Development Network

MOZACAJÚ
SHARED VALUE FROM TREE TO TRADE

MozaCajú is funded through the generous support of the United States Department of Agriculture.

PRIMARY IMPLEMENTING PARTNERS

TECHNOSERVE

TechnoServe works with enterprising people in the developing world to build competitive farms, businesses, and industries. It is a nonprofit organization that develops business solutions to poverty by linking people to information, capital, and markets. Its work is rooted in the idea that hardworking people can generate income, jobs, and wealth for their families and communities. With more than four decades of proven results, TechnoServe believes in the power of private enterprise to transform lives. TechnoServe has been providing technical assistance to agribusinesses in Mozambique with high growth potential since 1998. As the lead implementing partner, TechnoServe Mozambique used its extensive experience in the Mozambican and African cashew industries to drive and implement the strategy for MozaCajú. TechnoServe was involved in all aspects of the initiative, and leveraged specialists in the areas of processing, product certification, and marketing to help build strong linkages between Mozambican factories and international cashew retailers.

AGA KHAN FOUNDATION

The Aga Khan Foundation (AKF) focuses on a development problems by forming intellectual and financial partnerships with organizations sharing its objectives. Most Foundation grants are made to grassroots organizations testing innovative approaches in the field. With a small staff, a host of cooperating agencies and thousands of volunteers, the Foundation reaches out to vulnerable populations on four continents, irrespective of their race, religion, political persuasion or gender. AKF's activities in Mozambique are concentrated in Cabo Delgado, the northernmost, and poorest, province of Mozambique. AKF is an agency of the Aga Khan Development Network, which brings together social, economic and cultural development. The Network's experience includes decades of integrated rural development and value-chain approaches from Rural Support Programs in Asia and Africa. AKF Mozambique implemented MozaCajú's agricultural extension efforts, training cashew farmers on improved production methods and farm management techniques, as well as improving their access to yield-promoting inputs and support services.

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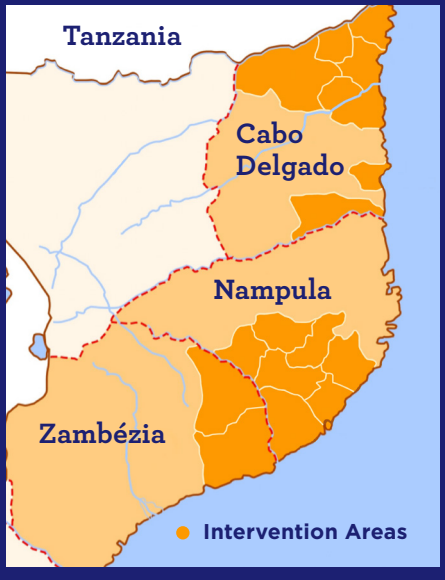
ACRONYMS

AKF	Aga Khan Foundation
CNSL	Cashew Nut Shell Liquid
HACCP	Hazard Analysis and Critical Control Points
INCAJU	Institute of Cashew Promotion
RCN	Raw Cashew Nut
SPEED+	Supporting the Policy Environment for Economic Development
USDA	United States Department of Agriculture

Executive Summary

MOZACAJÚ'S IMPACT

MozaCajú, the "Mozambican Cashew Project," is a 4 year initiative funded by the United States Department of Agriculture (USDA). TechnoServe is the project's prime implementer, with the Aga Khan Foundation (AKF) serving as a sub-grantee and the Government of Mozambique's Cashew Promotion Institute (INCAJU) as a key partner.



Since 2014, MozaCajú has been operating in the three northern provinces of Nampula, Cabo Delgado and Zambézia, in line with the Government of Mozambique's efforts to reduce poverty. MozaCajú has supported the Mozambican cashew nut industry by harnessing global market demand for premium cashew and addressing obstacles throughout the value chain, including in the areas of production, inputs, processing, finance, and marketing. MozaCajú has also worked to support the enabling environment for the cashew nut industry through knowledge-building and policy reform.

MozaCajú's broad range of activities has included a grants fund for small and medium agribusinesses, to encourage innovation and expansion in the cashew sector; hands-on technical assistance in factories, to support batch processing and food safety standards; business advisory services to larger plantations; and "My Cashew Business" trainings for smaller farmers. These farmers were exposed to new and improved agricultural practices, including the use of improved inputs. As an important part of this, community nurseries and seed providers were established across the cashew production zones of the country.

Over three planting, spraying and harvest seasons, MozaCajú worked with an estimated 23,000 cashew farmers, over 300 small and medium enterprises such as agro-dealers and nurseries, and seven industrial cashew processing facilities, thus impacting over 120,000 individuals. Through various interventions, MozaCajú has benefited the Mozambican cashew nut industry, stimulating productivity, efficiency, and growth in both production and processing.

In the 2015-2016 season, Mozambican cashew farmers who participated in the project experienced a 53-percent increase in cashew tree productivity and a corresponding 66-percent increase in income. Similarly, from 2015 – 2016 there was a 55-percent increase in the exports of Mozambican processors who participated in the project, which has amounted to an additional $20 million of kernel sold in the international market and a 64-percent increase in revenue. Moreover, MozaCajú has helped to leverage over $1 million in investments along the value chain.

WHAT'S NEXT FOR THE CASHEW INDUSTRY?

MozaCajú has witnessed growing interest and investment in the Mozambican cashew nut industry, which, if sustained, can lead the way to even more significant impact. This momentum presents an opportunity to leverage key changes in attitude and practice in order to introduce sustainable, commercial solutions to the challenges affecting so many cashew farmers in Mozambique. MozaCajú believes that there are two main areas for future impact: development of commercial cashew farms and expanded access to inputs through the entry of the private sector.

Since 2014, MozaCajú has worked tirelessly with a very large base of small cashew farmers to increase their adoption of improved production techniques. At the same time, MozaCajú has helped to build capacity and leverage investments by larger commercial cashew farmers. Though small farmers carry out the vast majority of cashew farming, MozaCajú has recognized that commercial cashew farming has an important role to play, for two reasons.

First, commercial farmers demonstrate far higher rates of adoption of good practices in response to direct technical assistance, and serve as role models for neighboring smallholders. Smallholders, in turn, exhibit much higher adoption rates of improved techniques when a successful commercial farmer is located nearby, whereas they are less likely to take risks and change practices without first seeing a larger neighbor succeed. Second, commercial farmers are a focal point for procurement

and can be aggregators for neighboring production, which enables expedited and more efficient procurement for traders and processors, enhancing the overall competitiveness of the export-focused industry. Therefore, one key lesson learned from MozaCajú is that focusing efforts on these larger farmers will increase impact and help reach more cashew farmers overall.

Similarly, MozaCajú has realized that low availability of improved varieties of seeds and chemical fungicides required to combat powdery mildew disease is the core constraint to increased cashew production. To this end, MozaCajú has worked closely with INCAJU and agro-dealers to increase farmers' access to important inputs. In part due to MozaCajú's influence, INCAJU has begun to develop a plan to phase out its direct delivery of agricultural inputs such as chemicals and seedlings, in favor of supporting private sector agro-input distribution. However, the agricultural input sector is still very underdeveloped, and agro-dealers for seedlings and chemicals in the cashew sector are weak or nonexistent in most of Mozambique.

MozaCajú believes that developing these input markets in Mozambique will require a long-term, four-pronged approach:

- Government input subsidy programs must work towards an exit, perhaps through a voucher program.
- A public awareness campaign for cashew farmers must highlight the huge potential return on investment of spraying trees, so farmers fully understand and internalize these benefits.
- Agro-dealers and distributors must be supported to develop business models that allow them to be profitable and sustainable, even in remote, rural areas.
- Large multi-national companies must be attracted to invest and build operations in the Mozambican market.

MOZACAJÚ BY THE NUMBERS

Improved production

21,323 farmers are now applying improved cashew farming practices such as pruning, cleaning, spraying, and post-harvest handling.

15,559 farmers have adopted at least two improved farm management practices, leading to **84,719** hectares under improved farm management techniques.

Increased access to inputs

85 community-based, locally owned cashew tree nurseries were established, which contributed to the planting of **542,807** tree seedlings, benefiting **5,566** farmers.

219 individuals were helped to acquire sprayer machines, with the potential to protect **328,500** trees against pests and disease.

309 agro-dealers were established to supply various inputs to cashew farmers.

Improved processing

5 factories installed batch-processing systems.

3 factories received food safety certification by internationally recognized standards.

2,522 factory staff and management were trained on batch processing and food safety systems.

Increased access to finance

13 grants were awarded to **11** enterprises and agencies involved in the cashew nut industry, comprising **7** small and medium agro-businesses, **3** large cashew factories, and **1** government agency.

Better marketing and market linkages

3 new international buyers were introduced to Mozambican processors, resulting in over **1,000** additional tons of cashew kernel sales.

Prices for cashew increased by **5%** for farmers who adopted new commercialization practices.

Introduction

Global overview and history

African cashew nut industries contribute over half of the world's supply of raw cashew nut (RCN), a product that is growing in demand globally as incomes rise and diets change. However, African countries still only process around 7 percent of the world's cashews. The vast majority of the African RCN production is exported, primarily as an intermediate good to countries such as India and Vietnam—the top two importers of RCN with shell. These countries then process the cashew nut for export to markets in North America and Europe, which house 40 percent of global cashew demand.

Mozambique was a top global producer of cashew nuts in the 1970s and had a thriving processing sector that exported primary processed cashew nuts. However, following a prolonged civil war from the 1970s to the mid 1990s, and a cyclone in 1994 that destroyed 40 percent of productive cashew trees, Mozambique's cashew production levels fell dramatically. At the same time, the Mozambican cashew processing industry, which had become highly inefficient and overly centralized, declined significantly as government protections were temporarily lifted with market liberalization in the mid-1990s.

In Mozambique today, nearly one million households grow cashew —though much of it is grown relatively passively. Smallholder farmers are responsible for more than 95 percent of the country's cashew production. In Nampula province alone, cashews account for nearly one-fifth of total household income and approximately two-thirds of total cash income (in cashew producing areas). However, Mozambique accounts for less than 3 percent of African RCN production, with the lowest quality within Africa due to old acreage and recurrent disease outbreak.

Cashew processing also provides income for Mozambicans in factory wages. When a cashew factory opens, usually in a rural area, it employs workers and it procures its RCN from the local community. A typical factory will have over 1,000 workers, many of them female, throughout the various sections of cashew processing. In northern Mozambique, there are 14 large industrial processing facilities and several smaller

facilities, creating over 14,000 jobs in these communities. Currently, however, the Mozambican cashew processing sector operates at less than 70 percent capacity, facing significant supply-side challenges.

Context for the MozaCajú project

TechnoServe has worked within the Mozambican cashew nut industry since the late 1990's, primarily working with processors to increase their productivity and efficiency by introducing new cashew processing technology. Though much progress was made prior to 2013, many challenges remained for farmers and processors in reaching their full potential and maximizing profit in the industry.

Before designing MozaCajú, TechnoServe identified the main challenges that Mozambican farmers and processors faced. Processors struggled to diversify their markets and capture the full potential of these markets due to both food safety concerns and weak market linkages between processors and farmers, making product traceability impossible. Increasingly, many countries have become stricter on food safety compliance and traceability for imports in order to ensure quality and protect the health of the end user. Many European buyers today require the implementation of a food safety management system based on internationally recognized standards. Similarly, the U.S. has increased its food safety regulations through the Food Safety Modernization Act of 2011, which aims to ensure the safety of U.S. food supply by shifting the focus from responding to contamination to preventing it. However, most existing Mozambican processors had no food safety management systems in place to regulate the quality and safety of the cashew nuts for export, increasing the risk of contamination-based recalls and losses, and further limiting their market opportunities.

These processors were also in need of major technology upgrades. At the time, processors still relied heavily on manual labor, despite the fact that there had been improvements in technology resulting in new equipment for processors in the international market. These processors were hesitant to adopt these new technologies and techniques due to skepticism of the benefits, and as such they were not therefore able to compete with other processors who did upgrade.

On the production side, one of the greatest challenges for Mozambican farmers over recent years has been the declining productivity of their cashew trees and lack of access to inputs to increase and sustain production. Over the past few decades, very few new trees were planted to replace those that were destroyed or had outlived their productive lifespan. Private seedling nurseries for cashew trees were few in number, the government's few nurseries were limited in resources, and many farmers lacked the technical knowledge necessary to replant on a large enough scale. Moreover, even productive trees had begun to be negatively affected by disease and pests, due to neglect and lack of resources. As a result, yearly yields in the cashew producing regions were well below their potential, and the whole industry risked losing even more market share in an increasingly competitive global market.

In October 2013, USDA formally awarded TechnoServe the funds for the MozaCajú project, with activities starting in May 2014. MozaCajú was designed to comprehensively address the many problems faced by cashew farmers, agro-businesses and industrial processors. MozaCajú aimed to increase productivity and efficiency in the industry by targeting multiple points of the value chain with various interventions. Through activities in production, inputs, processing, finance, and markets, as well as initiatives aimed toward policy reform and building an enabling environment, MozaCajú has worked to increase the quantity, quality and value of Mozambican cashew, while facilitating access to export markets.

Improved Production

By training Mozambican cashew farmers on improved production techniques and technologies, MozaCajú has strengthened both the viability and sustainability of the cashew industry, while simultaneously enhancing both the earning potential and quality of life of those farmers.

LESSONS LEARNED

Commercial farmers as leaders in adoption

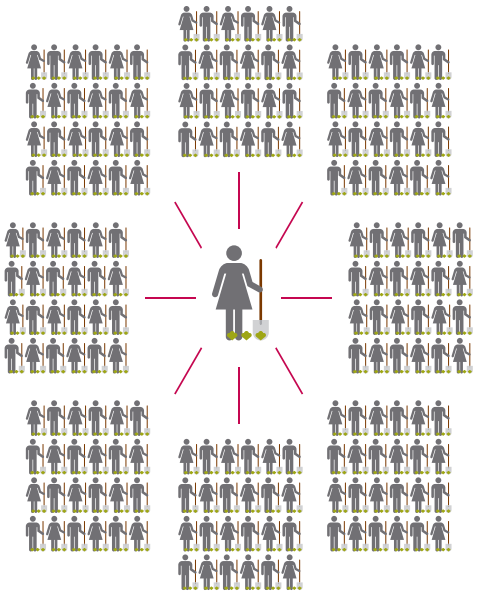
Though MozaCajú focused on reaching a large base of small cashew farmers, it worked with cashew farmers with holdings of various sizes, ranging from 50 trees to over 1,000 trees. However, MozaCajú learned that larger commercial farmers were better at adopting improved practices and contributed disproportionately to the project's impact. At the same time, smaller farmers in the community were more likely to adopt better practices once they saw a lead farmers' yield increase. In this way, working directly with commercial farmers was more impactful and the best use of project resources.

Timeframe and geography

MozaCajú was initially designed as a three-year intervention due to USDA program parameters (though the project was extended during implementation). However, for perennial crops such as cashew, any intervention must be a minimum of five years in order to have a long-term impact. Subsequent USDA Food for Progress programs have acknowledged this, and now five-year programs are the norm. Moreover, MozaCajú worked across three large and very under-developed regions, making the management of the fieldwork extremely challenging. Particularly for projects with a shorter timeframe, choosing small geographic areas facilitates easier monitoring of the quality of the work.

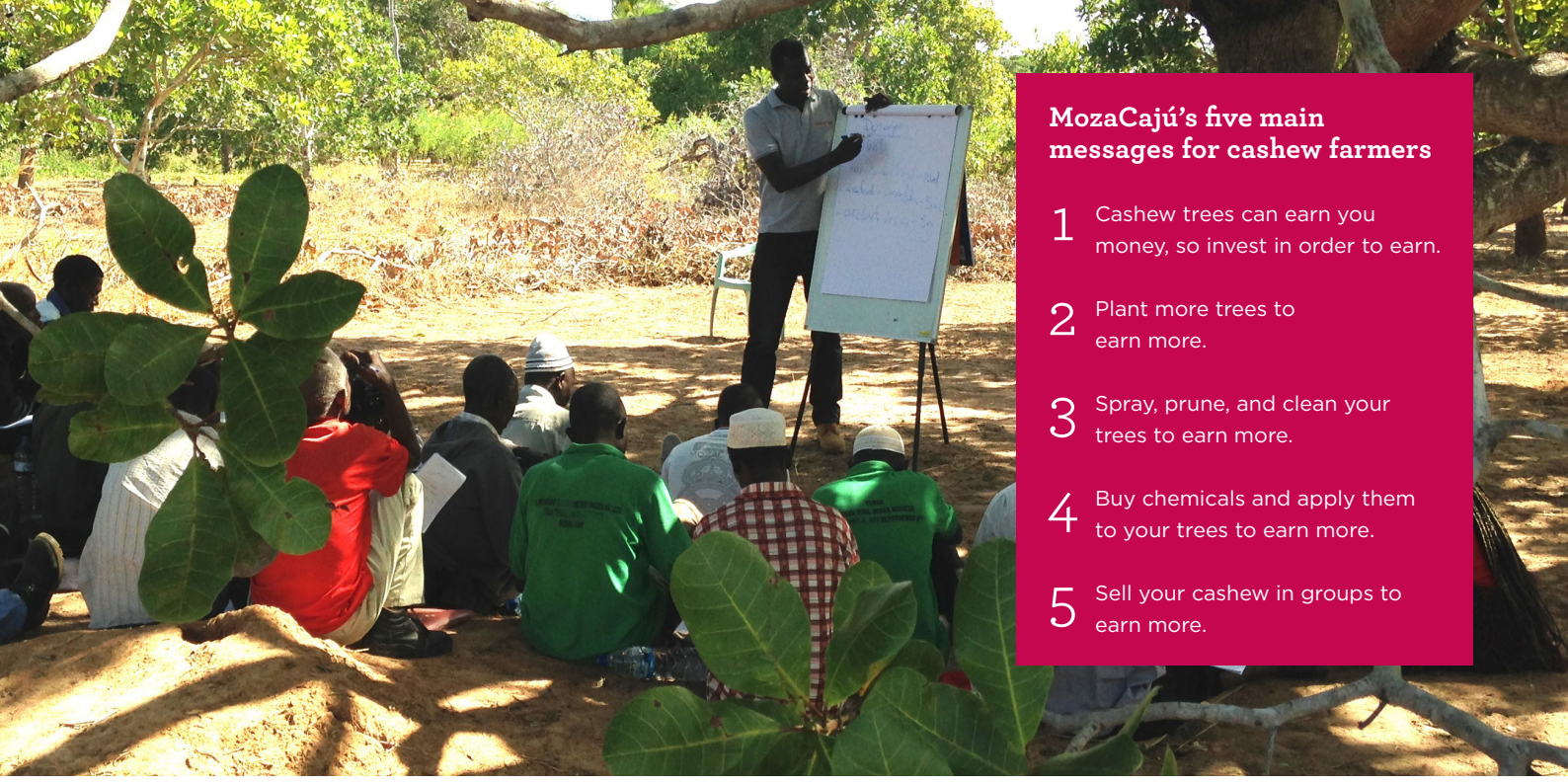
Training farmers on how to improve their production

Since 2014, MozaCajú has worked with cashew farmers across the three northern cashew-producing regions in Mozambique, training them on improved production techniques and technologies in order to increase their yields. MozaCajú had four regional supervisors who supported 16 field technicians that worked with 176 farmer promotion agents. These promotion agents, more commonly known as "promoters," were members of the community who were selected by MozaCajú according to specific criteria, including attainment of a certain level of schooling and literacy, as well as approval from the community. Once selected, each promoter was trained on the various improved production techniques and technologies and was subsequently responsible for training seven or eight groups of 20-30 farmers, averaging 200 farmers per promoter.



helping MozaCajú to reach over 23,000 cashew farmers

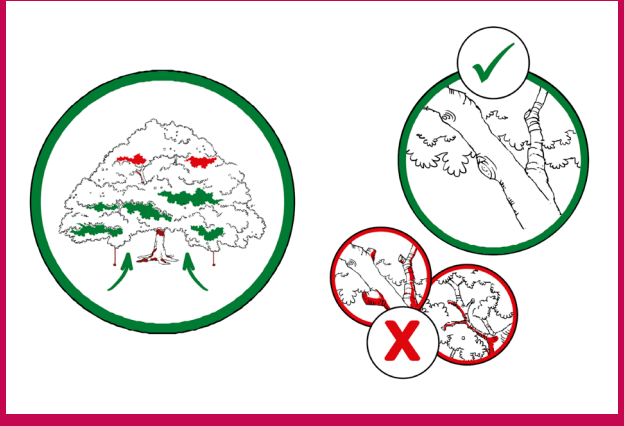
These farmer trainings, which took place on local demonstration plots using the Farmer Field School method, were organized seasonally to ensure that farmers used the practices soon after they were taught. Over the course of three years, 1,168 demonstration plots were created to train 23,556 cashew farmers. The curriculum focused on



MozaCajú's five main messages for cashew farmers

1. Cashew trees can earn you money, so invest in order to earn.
2. Plant more trees to earn more.
3. Spray, prune, and clean your trees to earn more.
4. Buy chemicals and apply them to your trees to earn more.
5. Sell your cashew in groups to earn more.

good agricultural practices that aimed to increase crop yields and reduce loss, including canopy rejuvenation, pruning and cleaning, spraying, use of organic fertilizers and pesticides, harvesting and post-harvest handling and storage, conservation agriculture, high density farming, and intercropping. There were also trainings on new planting and substitution of old trees. The project also provided training on s improved farm management practices, such as maintaining administrative and financial records of the farm. Participants learned how to keep inventories of their productive cashew trees and calculate the costs of production, in order to inform future farm investments.



MozaCajú Field Manual details the actions required for pruning and cleaning.

To further support and enhance the effectiveness of the trainings, MozaCajú developed a field manual and an outreach plan on how to reach more farmers. The field manuals, which detail the required actions at each stage of cashew production, were printed and distributed to all promoters, together with posters displaying information on various production techniques. Additionally, to reinforce the work of facilitators and promoters to expand the project's reach beyond enrolled farmers, MozaCajú broadcasted radio spots and programs on Mozambique Radio and local community radio across the three provinces, using both Portuguese and local languages.

To date, these production activities have achieved impressive results, with 21,323 farmers now applying improved cashew farming practices, such as pruning, cleaning, spraying, and post-harvest handling, and 15,559 farmers now adopting improved farm management practices. This has led farmers to cultivate 84,719 hectares under improved techniques. More importantly, these results have contributed to a 53-percent increase in cashew nut yields and 66-percent higher incomes for these farmers.

SUCCESS STORY

Farmer promoters teach best practices in their community

Cashew farming communities in northern Mozambique are seeing firsthand the important contributions that women can make when they are empowered to make a difference. Traditionally in Mozambique, men are responsible for generating and managing income for the household, while women are responsible primarily for domestic affairs.

Gilda practices teaching at a training on crop protection

However, MozaCajú, worked to change that by supporting female cashew farmers to become more actively involved in agricultural activities and livelihoods, recognizing that investing in women has a big impact on the economic and social well-being of the household and community. Female farmer promotion agents, for example, have contributed to an increase in cashew nut yields and incomes by helping to teach farmers new production techniques.

Fatima Mussa and Gilda Jose are two cashew farmers from neighboring districts in Cabo Delgado province, a predominantly cashew-producing region. Fatima is from Mueda, a district in the interior, and Gilda is from the coastal district of Mocîmboa da Praia.

In 2014, these women were chosen to become two of MozaCajú's 176 promoters. The majority of MozaCajú's promoters are male, but around 20 percent are female. Gilda and Fatima were chosen by fellow farmers because they were better educated than other women and were active in the community.

Over the past two years, Gilda and Fatima have joined other MozaCajú promoters in trainings on techniques for improved cashew production, including cleaning, pruning, harvesting and post-harvesting. They have traveled to centralized locations for these trainings, which strive to foster peer learning within the group.

In addition to learning these improved practices from the MozaCajú technicians, these trainings have been good opportunities for promoters to get out of their own villages and communities, in order to meet other farmers. This has been particularly important for the female promoters, as they do not typically get as many opportunities to travel to new districts and meet other women. The opportunity to travel and establish an informal network of other female farmers helps them to share best practices between them. As Gilda and Fatima have been attending the same training sessions since 2014, they have come to know and learn from each other, despite living around 55 miles apart—a large distance in a rural area.

A few of MozaCajú's female promoters (left to right): Janete Caciano, Fatima Mussa, Zura Issumail, Gilda Jose, Bendita Rafael, Sofia Momade, Salima Amule, and Matilde Pedro

The real work of the promoter begins when they return to their communities. As promoters, these women are responsible for disseminating this new knowledge and information to other cashew farmers, with the help of materials such as field manuals and posters.

The experience of being a promoter has had a positive impact on the women. They have learned how to organize their community and communicate important information to large groups of people—skills that are not common for rural Mozambican women, but which are necessary to carry out the work of a promoter.

Through their dedicated work over the past few years, promoters like Gilda and Fatima have been contributing to a larger movement that is revitalizing the Mozambican cashew nut industry. Their many successes in promoting adoption of good agricultural practices and re-planting of cashew trees highlight how women in Mozambique can be empowered to play a leading role in agricultural activities, thus contributing to the economic well-being of the household and larger community.

MOZACAJÚ
SHARED VALUE FROM TREE TO TRADE

Increased Access to Inputs

By providing cashew farmers with increased access to essential inputs, particularly for new planting and crop protection, MozaCajú has strengthened farmers' ability to realize both greater yields and a more sustainable livelihood.

LESSONS LEARNED

Importance of a multi-pronged approach to agro-inputs

Despite its importance for crop protection, chemical fungicide is not available in local, rural markets in Mozambique, as farmers expect to receive these inputs from the government, rather than to purchase them. Similarly, improved seed varieties are also not available in sufficient quantities for the level of planting that cashew farmers require. Because of this, the local agro-input industry for both seeds and chemicals are vastly underdeveloped. These constraints must be addressed in tandem: donor and government support is needed both for private-sector agro-input distribution and the development of the market for these products, which can be accomplished by helping farmers to understand the dramatic returns on investment they may see from proper spraying and planting. Without this type of multi-pronged approach, any intervention will not have sustained impact.

Nursery location matters

In establishing a nursery, it is not enough to consider the aptitude of a particular farmer: the location of the nursery was paramount to its success. Creating nurseries in a region where the government distributes seedlings and seeds as part of an agricultural subsidy program provides a particular set of challenges. Therefore, it was necessary to establish nurseries in locations that were far from the government's nurseries but also in communities where there was enough market demand and ability to purchase the new seeds and seedlings.

Developing community-based nurseries

MozaCajú has supported the establishment of local, independently owned, community-based cashew nurseries in order to ensure access to a consistent supply of sustainably sourced cashew seedlings for the planting of new cashew trees. In order to accomplish this, MozaCajú selected exemplary cashew farmers in strategic geographic locations across the three northern provinces and trained them in seedling production and nursery management. Following trainings, these farmers used the knowledge and inputs to build their seedling nurseries in their communities. They also received essential production materials and equipment—for example plastic pots, seeds (including polyclonal seeds), shovels, pruning shears, knives, hoes, and water bottles.

These nurseries varied in size and capacity, with most producing between 1,000 and 5,000 cashew seedlings per year

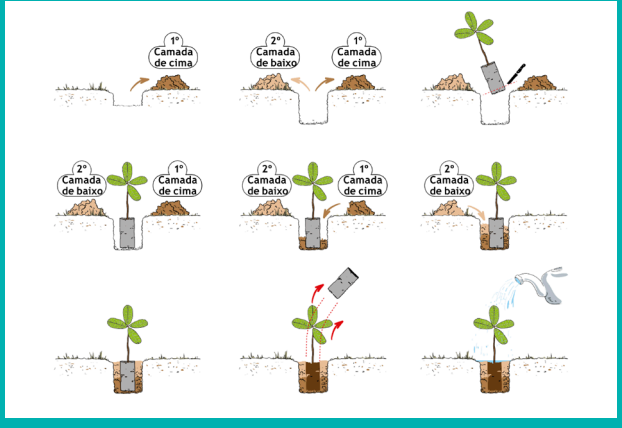
Polyclonal seeds: an alternative to grafting

Polyclonal seeds are a special kind of seed that have been engineered to retain only the best characteristics from a set of cashew trees, which have been grown in isolation to allow cross pollination only from within that set of trees. Polyclonal seeds have many benefits, including that they adapt easily to a new geography, which gives them higher survival rates than grafted seedlings. Moreover, while conventional seeds produce only after seven years, polyclonal seeds start to produce within three years—and once they start to produce, they are far more productive than conventional seeds, leading to greater cashew yields.

(though two exemplary nurseries demonstrated the capacity to produce more than 15,000 seedlings per year). To assist the nurseries, MozaCajú's promoters served as a link between the new nurseries and farmers in the community, facilitating the distribution of seedlings to farmers who wish to plant more cashew trees. As nurseries can provide income for farmers through the sale of seedlings, MozaCajú also developed a sustainable business plan that will enable nursery owners to continue to earn a profit and keep the nurseries financially viable. MozaCajú worked with the most successful cashew tree nursery owners to provide further support and assistance, so that the nurseries continue to thrive for years to come. MozaCajú also partnered with small agro-dealers to produce and supply cashew production equipment not available locally. Through this partnership, MozaCajú supported the development of five tool shops that would continue to supply these materials to the nurseries in the future.

MozaCajú initially taught nursery owners how to graft seedlings with scions from mother trees, which are locally identified, highly productive trees that produce more than 14 kilograms of cashew nut per tree. However, MozaCajú soon learned that polyclonal seeds, an improved type of seed being produced and used by INCAJU, were far superior to grafted seedlings and conventional seeds. Recognizing that the planting of polyclonal seeds could not be sustained without an increase in the number of private sector providers, MozaCajú also worked with INCAJU to develop these providers. As polyclonal seeds must be produced in a very contained and carefully controlled environment, in which only the best quality trees are allowed to cross-pollinate, the seeds can only be called polyclonal after a provider is certified in production, following years of careful observation. MozaCajú and INCAJU worked to train ten seed providers on these production techniques, with the expectation that after several years these providers will have production levels high enough to plant over 1 million new cashew trees per year.

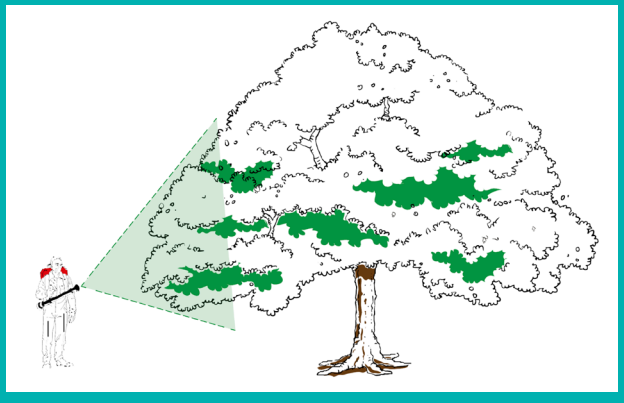
MozaCajú supported 85 cashew nurseries in Mozambique, benefiting 5,566 farmers through seedling distribution. To date, an estimated 542,807 new cashew trees have been planted in local communities. Through these nurseries, MozaCajú has been largely successful at encouraging and supporting farmers to plant new cashew seedlings. In fact, 65-percent of project farmers reported having planted new trees, with an average increase of 51 trees planted per farmer, among those who were engaged in planting.



MozaCajú Field Manual details the actions required for planting.

Promoting crop protection through increased spraying

Given the pervasiveness of white powdery mildew (or oidium, a fungus that can decimate a cashew crop), properly spraying of trees with anti-fungal treatment is by far the most effective practice when it comes to increasing yields. Through the farmer trainings delivered by promoters, MozaCajú worked hard to sensitize cashew farmers on the importance of spraying cashew trees for crop protection. However, due to the large role of the government in chemical distribution and service provision, there were not many private spraying services available in cashew communities prepared to pay for these services.



MozaCajú Field Manual details the actions required for spraying.

Therefore, MozaCajú worked to expand the role of private sector actors in providing chemical spraying services by enabling them to purchase spraying machines. MozaCajú assisted cashew farmers and nursery owners through micro-grants, which helped them to purchase 36 sprayer machines and begin spraying services in their community. MozaCajú also gave grants to larger agribusinesses involved in agricultural input distribution (see section below on "Increased Access to Finance" for more information about this formal grants program). MozaCajú first gave a grant to Agrifocus, Mozambique's biggest agricultural supplies distributor of fertilizers, seeds, and spraying equipment, which has a network of technicians around the country providing technical assistance to distributors, retail sellers, and farmers. With this grant, Agrifocus was able to provide 148 small and medium farmers with sprayer machines. Agrifocus also trained them on proper utilization of the machine and techniques for applying the pesticides to the cashew trees. Additionally, these sprayer providers who received machines were put in direct contact with shops in order to get the spare parts and purchase the pesticides. Later, MozaCajú gave grants to two smaller agribusinesses, Soluções Verdes and Ngala Investimentos, which purchased 15 and 12 sprayer machines (respectively) and contracted providers in communities to offer spraying services to cashew farmers.

To date, MozaCajú has facilitated access to 219 sprayer machines for service providers and, together with its partners, provided training for these new providers on the techniques of spraying. Combined, these machines have the potential to treat 328,500 trees with protection against pests and disease, thus benefiting 5,566 farmers.

Bokashi: "fermented organic matter"

Bokashi is a type of organic material that farmers use to fertilize plants. It can be an important fertilizer for young cashew seedlings that need nutrients in order to grow. MozaCajú taught nursery owners how to make bokashi using only materials locally available—in fact, it can be made at home. Nursery owners found that the bokashi was not only producing healthier seedlings, but also helped significantly with the transportation of the seedlings, as it is lighter than normal soil. While a nursery owner previously could deliver only 20 seedlings at a time, they could deliver between 70 and 80 at a time with bokashi, greatly increasing their ability to deliver seedlings in the community. Moreover, with bokashi, seedlings could be grown in smaller pots, thus increasing the number that a nursery owner could grow in a given space.

SUCCESS STORY

Cashew nurseries help farmers plant seeds for a better future

Mariamo Agy from Angoche district in Nampula Province is one of MozaCajú's nursery owners, or *viveristas*. In early 2014, Mariamo attended MozaCajú's nursery trainings, where she learned how to establish and run a nursery— with the techniques behind grafting seedlings and producing germlings from seeds being particularly important. Following the training, Mariamo received the necessary materials in order to begin her work as a nursery owner.

"I learned in the MozaCajú training that for better production, I should select the plants with the desirable characteristics and later remove scions for grafting," Mariamo explained. "Thus, at the time of production, I select and mark the plants with the best characteristics, resistance to pests and diseases, and production level of each tree, thus ensuring that the new plants have high productive potential."

As is typical of the MozaCajú-supported nurseries, Mariamo produces two types of cashew seedlings: germlings, which use polyclonal or improved seeds, and grafted seedlings. Last year, Mariamo produced around 5,000 seedlings, of which 3,804 seedlings successfully germinated and were planted. Mariamo sold these seedlings for a total income of MZN 30,460, which is close to $550 USD—a huge sum in rural Mozambique. In addition to the cashew seedlings, Mariamo produced and sold 570 other grafted seedlings of various fruit trees for MZN 15 each, resulting in a revenue of MZN 8,550, or nearly $150 USD.

Mariamo stands in front of her new house with a tin roof

Mariamo Agy and Carlos Muekela with their cashew seedlings

"Not only did I earn money that I did not earn before, I also gained skills and a profession that besides generating income, I hope to teach my children in order to continue to serve communities through the provision of cashew seedlings and other fruit trees," she said.

These nurseries have already yielded long-term benefits for the owners. "With the revenue I earned, I proposed to my husband that we make home improvements," Mariamo said. "Since the house we had was thatch-roofed, it was always susceptible to catching fire at any moment, especially because of the seasonal and uncontrolled fires in the area."

Mariamo was not only able to construct a new home with a corrugated tin roof, but also buy and install solar panels to provide electricity during the night. Not only will the new roof make the home less vulnerable to wildfires and keep it dry during the rainy season, the new electricity will help Mariamo's three children study.

MOZACAJÚ
SHARED VALUE FROM TREE TO TRADE

Improved Processing

By working with Mozambican processors to install batch-processing systems and become food safety certified by HACCP standards, MozaCajú enabled these processors to access more premium markets thus increasing their profitability.

LESSONS LEARNED

Incentives for adoption

Cashew processing is a high-volumes, low-margins business. Therefore, introducing any slight inefficiencies or lowered capacity utilization within a factory must be countered by a clear and present incentive in terms of increased sales or prices, as these industrial firms do not have the time and resources to invest in long-term, risky initiatives. MozaCajú learned that while the global market is very interested in HACCP certification and traceability, it is not yet prepared to cease purchasing when certified product is unavailable, and is not yet prepared to pay a premium for price for increased traceability. If the market truly demands these certifications, then it must demonstrate this to processors in the form of strict requirements and price premiums.

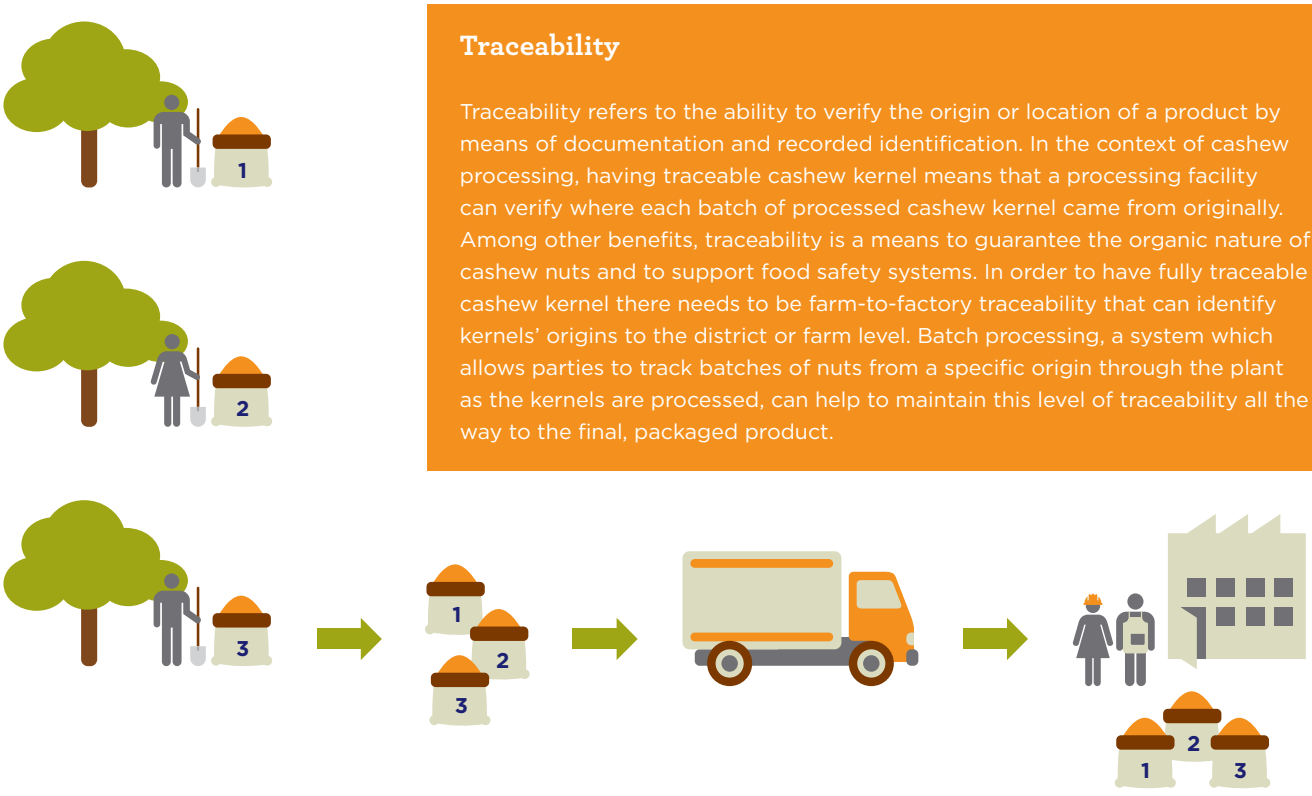
High-level buy-in

MozaCajú learned that obtaining buy-in from the highest levels of senior management in cashew factories is critical to implementing sustainable changes at the operational level of the factory. Often, management might authorize a training to take place, but if the implementation of new standard processes is not a clear business priority, the lessons of the training will never be implemented.

Paving the way for traceable cashew with batch processing

MozaCajú conducted traceability audits inside five factories in order to identify obstacles that impede full traceability, from the first step of purchasing RCN from farmers all the way to the final 50 pound boxes of processed kernel. The audits highlighted practices in factory processing operations that needed to be adjusted in order for traceability to be achieved. These included measures improve initial areas and processes for receiving RCN from agents in order to ensure to ensure physical product segregation and labeling of the product by origin. The audits also traced the journey of RCN from farm to factory. In Mozambique, smallholder farmers sell their RCN to a local trader in the informal market. These traders then aggregate RCN to sell to processors. The audits found that training traders on traceability is a key step, as their methods for labeling and identifying the origin of the RCN needs to be consistent with level of detail used by the processor and communicated at the handover of RCN at the factory receiving bay.

An important precursor to traceability and food safety systems, batch processing is a factory management and documentation system that allows processing facilities to keep cashew that comes from the same location together throughout the various stages of processing. It depends heavily on warehouse organization, well-designed records and registers, and staff commitment. In a batch processing system, all sacks of cashew nut that come from the same area are labeled with a specific code that enables the management to track where it is at all times and keep it separate from cashew kernel from other areas. Each section in the factory will only process kernel from



Traceability

Traceability refers to the ability to verify the origin or location of a product by means of documentation and recorded identification. In the context of cashew processing, having traceable cashew kernel means that a processing facility can verify where each batch of processed cashew kernel came from originally. Among other benefits, traceability is a means to guarantee the organic nature of cashew nuts and to support food safety systems. In order to have fully traceable cashew kernel there needs to be farm-to-factory traceability that can identify kernels' origins to the district or farm level. Batch processing, a system which allows parties to track batches of nuts from a specific origin through the plant as the kernels are processed, can help to maintain this level of traceability all the way to the final, packaged product.

one location, which will move together from arrival at the plant to final packaging.

In order to install batch processing in the factories, MozaCajú trained senior management and factory supervisors on the various requirements for batch processing. Following this, MozaCajú technicians worked with these factory supervisors and managers to incorporate and adapt the new processes into the existing factory management and documentation systems. Once all senior staff had been oriented and the systems adapted, MozaCajú technicians conducted training sessions for all the workers in each of the factories' sections for example, working with the warehouse staff on one day and with the peeling staff on another – to learn the various batch processing components.

In each section, the technician worked with factory employees to create systems for recording and documenting the entire process in order to show those responsible for each section how to keep track of the batches of cashew nut by date and location as they passed through. After training and roll-out of the batch processing system in each factory, MozaCajú technicians conducted monitoring visits to each factory in order to verify the system's functionality and make corrections where necessary in order to ensure top-quality batch processing systems in each factory.

Today, five processing facilities in Mozambique have implemented batch processing systems, thus laying the groundwork needed to make processed kernel traceable down to the district level or beyond in the future.

Sections of processing

The cashew nut is wrapped in a thin inner skin that sits inside a hard outer shell, which contains an acid that could cause skin rashes if not removed properly.

Cashew processing facilities move batches of cashew kernel through 8 sections and semi-strenuous processing over the course of a week, to get it ready for consumption.

Ensuring food safety through HACCP certification

MozaCajú worked with Mozambican processing facilities to help them install food safety management systems that are compliant with internationally recognized standards. A food safety management system includes the policies, procedures, practices, controls, and documentation that ensures that the food sold by a business is safe to eat and free from contaminants. To accomplish this, MozaCajú assisted processing facilities to become certified according to the HACCP system.

MozaCajú oriented senior management of the processing facilities on the various requirements and benefits of having HACCP certification. Once buy-in from senior management was established, MozaCajú contracted a food safety company with over 20 years of experience in the food industry, Merieux NutriSciences, to assess the current status of food safety by conducting HACCP pre-assessment audits in seven of the factories. The findings from the pre-assessment audits informed the necessary corrective actions to be taken by each factory in order to prepare them for HACCP certification. Following the pre-assessment audits, Merieux NutriSciences and MozaCajú technicians formed HACCP Committees in each of the factories, which consisted of approximately five senior-level factory employees who became responsible for the implementation and maintenance of the HACCP system in the factory. MozaCajú conducted workshops for these HACCP Committees to orient and train them on the various requirements for obtaining HACCP certification.

Next, MozaCajú worked with the HACCP Committees to conduct hands-on trainings for all workers in each section of the factories, from the warehouse to the packing and storage sections. At this stage, MozaCajú technicians trained hundreds of workers on phytosanitary procedures according to HACCP over the course of several months. Each worker needed to understand the general requirements of HACCP as well as his or her role in promoting food safety.

The main topics covered in these training sessions included:

- Cleaning, sanitization, and maintenance procedures for infrastructure and equipment
- Waste management procedures
- Pest control procedures
- Document control procedures
- Maintenance plans, with emphasis on cleaning and sanitizing
- Inventory management
- Hygiene codes
- Quality control records

During this time, MozaCajú and Merieux NutriSciences developed all materials used by the HACCP Committee, most especially the HACCP manuals to be used as a reference for implementation procedures within the factory. In total, over 100 documents were developed to assist the HACCP Committee roll out HACCP in each section of the factory. These included documents detailing rules and regulations, registration sheets for tracking the movement of people and product within the factory, and verification sheets to ensure that maintenance, cleaning, and sanitization occurred when necessary.

Once all relevant staff and employees in each section of the factory had been properly oriented and trained, and all relevant materials handed over to the HACCP Committee, MozaCajú technicians began to make monitoring visits to check on the status of the factory's' HACCP compliance in order to ensure top-quality HACCP systems in each factory.

To date, three of MozaCajú's participating cashew processing facilities have received HACCP certification. Moreover, through MozaCajú support, two of these newly HACCP-certified factories will be seeking further certification by British Retail Consortium standards, which build on HACCP standards.

HACCP: Hazard Analysis and Critical Control Points

HACCP is a food safety management system and risk management tool that identifies, evaluates, and controls hazards that are significant for food safety at all stages of the food manufacturing operation. A functioning HACCP system examines every step in a food manufacturing operation, identifying hazards at each step, developing control measures and monitoring systems to ensure proper oversight of identified critical control points (steps in the manufacturing process at which controls can be applied to reduce hazards to acceptable levels), and then verifying the status of those control points. The potential benefits of HACCP are numerous, but the most significant are tangible and demonstrable improvements in food safety performance and a greater level of legal compliance. Additionally, by introducing HACCP, food processing results in less waste thanks to more efficient operations. The ultimate objective however, is to guarantee food safety by replacing low-efficiency, retroactive quality control processes with proactive identification of food safety hazards and best management practices.

Increased Access to Finance

MozaCajú has worked to increase small, medium, and large cashew enterprises' access to finance through grants, spurring innovation and development among a diverse set of actors who add value along the cashew value chain.

LESSONS LEARNED

Supporting, but not leading the process

MozaCajú aimed to reach a variety of value chain actors with its grant fund – including new and smaller agribusinesses. However, many of these agribusinesses required significant support just to start the application process. MozaCajú had to balance this assistance with room for participants to take the lead on the details of the project. It was important that MozaCajú not push the grantee to take on a project they were not truly interested in, even if it would ultimately benefit the industry.

Technical assistance increases impact of financial assistance

Though the main purpose of the grant fund was to disperse financial assistance in the form of in-kind or cash grants, for many of the grantees the technical assistance that MozaCajú provided proved to be just as important. Particularly for the grantees who were entering into a new area with their grants, MozaCajú technicians' insights on production, processing or business planning skills were paramount to the project's success.

MozaCajú's matching grant fund

MozaCajú launched its matching grant fund in May 2015, soliciting grant applications from a diverse range of actors in the cashew nut industry, from processors, to commercial farmers, to agro-dealers. The grants provided funding for a variety of projects, most especially for the procurement of much needed equipment or technologies that would have been otherwise unavailable to the grantee due to high cost and risk. MozaCajú's matching grant fund had a cost-share requirement in which the grantees had to put some of their own resources toward the project along with MozaCajú funds. The intention was that this would ensure that the grantee was committed to the project and would also leverage the investment made by MozaCajú. This cost-share was generally a minimum of 30 percent of the total grant value. With a total fund of $250,000, each MozaCajú grant ranged from just over $1,000 to under $50,000.

Overall, MozaCajú awarded 13 grants to 11 grantees, leveraging over $1 million in investments along the value chain. Half of the awarded grants funded innovations or technologies in the processing sector, while the other half advanced production. MozaCajú's grantees include three large industrial cashew factories (Olam, Condor Cajú and Condor Nuts), one government agency (INCAJU), three agricultural inputs companies (Agrifocus, Soluções Verdes, Ngala Investimentos), two small-scale cashew farms and factories (ADPP and EMAJU), one agribusiness (Sociedade Comercial Messalo), and one large commercial farm (DD Investimentos).

Through its Matching Grant Fund, MozaCajú is...

Encouraging adoption of innovative processing technology in cashew factories

The Controlled Atmosphere Chambers equipped with the Rapid Treatment System® in Olam's cashew factory in Monapo, Nampula helps to control contamination by pests in food supplies for both preventative as well as curative treatments.

Enabling cashew factories to adopt food safety systems

With funds from the grant program as well as hands on technical assistance from MozaCajú technicians, Condor Nuts and Condor Caju factories in Nampula province successfully passed their food safety audits to receive HACCP certification.

Supporting the development of community-oriented commercial cashew farms

DD Investimentos planted its first 50 hectares of cashew on their land concession in Chiure, Cabo Delgado. DD Investimentos bought the grafted seedlings from a MozaCajú nursery owner, Carlos Lassimo, from the neighboring town.

Building capacity of small-scale cashew nut and fruit juice processing facilities

The small-scale cashew juice factory at ADPP is one of the first juice factories in all of Mozambique, but has found a niche market for juice in the local community.

Increasing access to sprayers and other agricultural inputs for cashew production

After delivering the new atomizer machines to sprayer providers, Agrifocus trained them on how to properly operate the machines and apply chemicals to cashew trees.

Developing innovative mobile app technology to increase access to information

The CommCare Seedling Tracker helps INCAJU extension agents to more efficiently collect farmer-level data and track cashew seedling distribution and survival rates.

With new machinery, Condor Nuts reaps profits from formerly wasted by-products

Condor Nuts, a large industrial cashew-processing facility in Nampula province, received a MozaCajú grant that enabled it to purchase a Cashew Nut Shell Liquid (CNSL) extraction machine. Currently, cashew shells at most cashew factories are burned as a rough, dirty, and inefficient fuel. In some cases, they are simply discarded, putting to waste two potentially useful byproducts: the cashew nut shell and liquid. However, with the new machinery, Condor Nuts can safely extract the liquid, which can be used for over 20 different byproducts in various industrial settings. Moreover, the dense, dry matter, or "cake," that remains afterwards can be safely and more efficiently burned as fuel. The extraction equipment is the first of its kind in Mozambique, making this grant award highly innovative. With this CNSL machine, Condor Nuts has been able to earn more profit from the sale of the liquid as well as the sale of the cashew shell cake. Condor Nuts has even begun piloting the sale of more efficient cooking stoves that are fueled by this cashew shell cake. To date, several Condor Nut factory employees have benefited from the purchase of these stoves, which have been provided on credit from Condor.

Small processing units and factory allow women to hygienically process cashew

Established in 2001, Sociedade Comercial Messalo is an agribusiness and commodity dealer that buys and sells different crops, with a focus on cashew in the north of Mozambique. With a grant from MozaCajú, Messalo constructed and distributed individual processing units to members of a women's association, who were all cashew farmers interested in artisanal processing. Messalo also provided the women with the RCN and various other small tools needed for processing – and made contracts with each woman to receive payments based on the amount of cashew kernel they processed.

The small home-processing units help the women to hygienically shell and peel cashew nuts while not having to leave the home to work in a factory. With very few other opportunities for employment and income generation in their community—which is in a

rural and marginalized part of the country—these processing units have allowed the women to earn relatively large incomes from their work. In this way, the grant has a strong social component. The individual processing units provide income during the months that typically yield no income for the entire community, all while allowing the women to remain close to their children and attend to the house chores.

With the grant money, Messalo also built a small cashew roasting factory in the town of Mueda. In this factory, several women who are employed by Messalo roast, flavor and package the processed cashew nuts sourced by the female primary processors. Currently, Messalo produces three different flavors of roasted cashew (piri-piri, salt and natural) for the domestic market and is developing a healthy cashew nut bar for the broken cashew kernel.

Rehabilitation of a cashew farm and factory positively impacts local community

Emaju – Sociedade Unipessoal Lda is an agricultural company operating a small-scale cashew processing factory and farm in Nampula province. Though the company itself is new, its owner and staff have extensive experience in the cashew industry. Owner Else-Marie Fogtmann is dedicated to creating a positive impact on the local community and is a committed buyer of local farmers' produce and an employer for the community. The staff – 6 full time on the farm and 16 full time in the factory (7 of whom are women)—all come from the surrounding community and have previously worked as cashew farmers or in cashew factories.

MozaCajú first awarded a grant to Emaju to procure a small tractor, which helped them harvest their cashew nuts and enabled the planting of new cashew trees by helping to clear the land. Emaju also hired an engineer to drill a borehole and lay pipeline to provide water to the factory, with the help from a generator that was purchased and installed to pump the water. In addition processing its own cashew harvest, Emaju procured 23.16 tons of RCN for processing during the last harvest season (part of which was bought using MozaCajú funds). Later, MozaCajú awarded another grant to Emaju to purchase a water tank at the site of the borehole, protective equipment and bicycles for the workers, materials to make bokashi, equipment for buying four beehives, and various other supplies for the factory. The staff has received training in cashew spraying techniques as well as bee-keeping, thus contributing to their ongoing professional development.

Better Marketing and Market Linkages

By training farmers on how to manage their cashew business and commercialize their product and by facilitating processor introductions to international buyers, MozaCajú has improved market linkages along the value chain, thus increasing the earning potential for farmers and processors alike.

LESSONS LEARNED

Building in feedback loops

MozaCajú's CommCare system was an innovative tool to share information between farmers and factories via SMS as a way to improve market linkages. However, as a pilot that was not even in the original design of MozaCajú, all functionalities could not be rolled out immediately. For example, after sending buyers the location and quantity of RCN for sale, there was no formal feedback loop that could report on whether the sale occurred. Having details on what happened after the initial information-sharing would be important to know in order to monitor progress during the commercialization season, including total volumes sold.

Brokering sustainable relationships

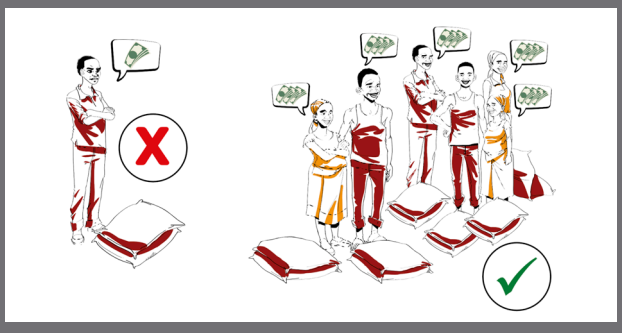
MozaCajú successfully brokered several important relationships between international cashew buyers and Mozambican processors that led to increases in sales. However, MozaCajú was careful to never take the lead role in these relationships after the introductions were made, as it was important that these relationships were sustainable beyond MozaCajú.

Improving the way farmers manage and sell their cashew

In addition to providing trainings to enhance production methods, MozaCajú trained cashew farmers on improved commercialization techniques in order to fill the knowledge gap that has prevented the farmers from aggregating their cashew and maximizing their profits. Traditionally, cashew farmers in northern Mozambique harvest and sell their cashew nuts alone and all at once. Most commonly, a local trader will come to a cashew-producing community to buy as much RCN as the farmers are willing and able to sell. Typically, there is little negotiation between the buyer and the seller. These cashew farmers are often not connected to markets and have little information about the price of their product on the market, an important determinant of a good profit after volume of yields.

MozaCajú's commercialization trainings were organized into sessions on *My Cashew Business* ("O Meu Negocio de Caju"), which covered all aspects of commercialization and business planning, including pre- and post- harvesting techniques, such as cleaning the ground around the tree, separating the cashew nuts from the apples without exposing them to moisture, or storing the cashew nuts in jute bags lifted off the ground. Most importantly, farmers learned how to organize themselves into groups and to aggregate their product. This helped them to negotiate with buyers for better prices as the buyers could save money by purchasing in one location, thus passing the savings on to the farmer. Farmers also learned how to analyze the quality of the cashew in terms of kernel outturn ratio (KOR), so they could know better what prices to negotiate for at the time of sale.

The *My Cashew Business* trainings also taught farmers business planning and farm management tools, including how to manage



MozaCajú Field Manual details the advantages of selling as a group.

Connecting farmers to markets via SMS

MozaCajú's CommCare system was designed so that registered farmers could broadcast information to buyers about their production quantities via SMS. Registered farmers sent a keyword to a universal number when ready to sell their cashew, which triggered a response from the system asking for the quantity of cashew available. The farmer replied by SMS with the quantity, and this information was transferred to the central database. From there, the GPS coordinates were used to map the farmers' location and the quantities of cashew they had available in real time. This information, as well as the farmers' phone number, was presented directly to buyers – primarily factories—to help with their procurement efforts.

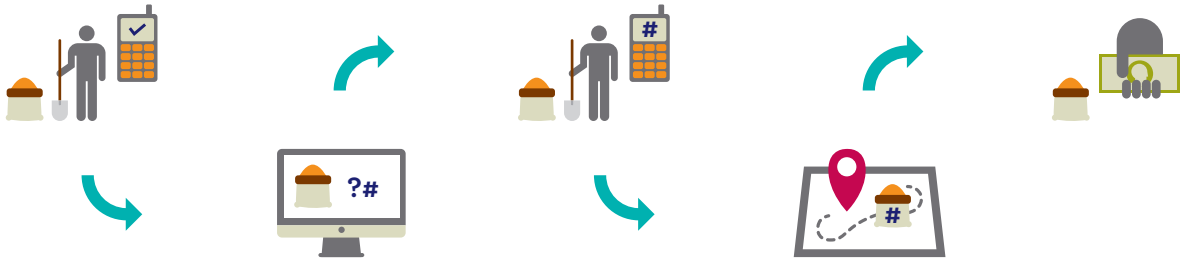
1 Registered farmers send keyword to universal number when ready to sell their cashew.

2 This triggers a response from the system asking for quantity of cashew available.

3 Farmer replies by SMS with quantity. This information is sent to central database.

4 GPS coordinates are used to map location and quantity of cashew available in real time.

5 This information is presented directly to buyers to help with their procurement efforts.



their income and invest and diversify their livelihoods, in order to grow their businesses further. Income management and investment are particularly important topics for cashew farmers for two main reasons. First, cashew brings in large amounts of money all at once, but needs to sustain a household for a whole year, as cashew is the primary source of income for many of these farmers. Knowing the best way to manage, spend and invest the money earned helps the farmers to sustain the impact of cashew farming.

Secondly, though the production of cashew could still improve with increased investments in new planting, cashew farmers must also diversify their livelihoods, as land is not an infinite resource. Investing in other crops and animals will not only bring more income at different parts of the year, but will allow the farmers to be more resilient overall. Farmers learned how and why to track costs and revenue by keeping records of all aspects of production, including the productivity of each tree or the application of chemical treatment. Farmers learned that this will help them to analyze their return on investment and make smarter decisions, as understanding the yields per tree and comparing that to the investments allocated to that specific tree will help them to determine where they are efficiently spending their time and resources.

MozaCajú also introduced farmers to the CommCare platform, which used mobile technology to link farmers directly with buyers through a digital platform based on SMS messages. This platform created a lot of interest particularly on the part of the factories, who are always searching for better ways to do their procurement, but also with farmers, who benefited from having more direct communication with buyers. The CommCare platform was so successful that the Norwegian embassy, through its partner Norgesvel, has funded a full-scale rollout of INCAJU's farmer management and M&E tool, now called ConnectCaju.

In the 2015-16 commercialization season, MozaCajú farmers experienced a 5 percent increase in per kg price due to adoption of new commercialization techniques, in particular selling in a group and negotiating prices directly with buyers. Additionally, MozaCajú registered over 4,000 farmers on CommCare, who were able to sell 6,516 tons of cashew through the system, which is currently being adapted and expanded for INCAJU to continue to use in the future for data collection.

Caro Nut testimonial

Caro Nut Company is a nut-roasting facility based in Fresno, California that supplies Costco Wholesale and other retail stores with high-quality and traceable finished goods. Caro Nut is a dedicated and active buyer of cashew nut in West and East Africa. Though they source cashew from all over the world due to rising demand, they have a strong preference to source African-origin kernel in an effort to strengthen local African processing industries for a more resilient value chain with traceable and fresh product. With this intent, Caro Nut began buying African kernel in 2009 from just two suppliers. Today, they work with over 20 cashew processing factories in Ivory Coast, Ghana, Benin, Togo, Burkina Faso, Mozambique, Tanzania, Kenya, Nigeria, and Senegal. Of its African cashew volumes, Caro Nut now sources nearly half from Mozambican cashew processing factories, largely due to the diligent work of MozaCajú. With MozaCajú's support, the company has been able to better identify good partners, business linkages, and develop a clear view of the cashew value chain. Caro Nut believes that MozaCajú has been a key factor in the company's ability to source confidently from the region.

Building better market linkages for factories

By leveraging the extensive private sector network of TechnoServe, MozaCajú has worked to connect Mozambican processors to several large, international buyers who were not currently engaged in the Mozambican cashew nut market. Some of these buyers previously procured their cashew from Mozambique, but had stopped due to quality control issues. As MozaCajú also worked with the processors to install food safety management and quality control systems, these processors were now ready to re-enter the international market to sell their kernel, but lacked the contacts to make these introductions.

In early 2015, MozaCajú contacted Caro Nut, a nut roaster and wholesaler that supplies cashew products to the major U.S. retailer Costco, and invited them to Mozambique to learn more about the Mozambican cashew industry. MozaCajú hosted Caro Nut representatives in-country and introduced them to several Mozambican processors, including Condor Nuts, Condor Cajú, and ETG. In 2016, Caro Nut placed its first order of cashew kernel from those three cashew factories. MozaCajú helped to ensure quality of those initial orders by checking on the containers--looking for variances between grades and conducting random nut counts--before they were shipped to Caro Nut's roasting facility in Fresno, California. Since then, Caro Nut has ordered several containers of cashew per year from Condor and ETG, which contributes to nearly half of Caro Nut's total amounts sourced from Africa.

Similarly, MozaCajú reached out to both Nutrade, a South African bulk supplier of fortified functional foods, grains, pastes and spreads, peanuts and tree nuts, and Red River Foods, a U.S. based global supplier of a wide variety of tree nuts, dried fruits, seeds, and specialty snack products. MozaCajú introduced Nutrade to Olam, ETG and Caju Ilha factories and introduced Red River Foods to Condor Nuts and Condor Cajú factories, who are now currently supplying multiple containers per year to these new buyers. As both Red River Foods and Caro Nut were interested in traceability and sourcing sustainable cashew from farmers, MozaCajú also worked with these companies to collect information on the farmers from whom the factories source their RCN. MozaCajú has also acted as a filter for requests to purchase Mozambican kernel through its online presence. MozaCajú receives hundreds of inquiries from companies seeking to source kernel from Mozambique, and through communication with these companies determines which are genuine in order to pass their information along to the Mozambican processors.

These important introductions have resulted in over 1,000 additional tons of cashew kernel sales for the participating Mozambican processors, contributing to their overall increases in revenues.

SUCCESS STORY

Cashew farmer learns to maximize profit by selling in a group

Hilário Valentim, a promoter from the village of Nlepa in Zambézia province, has benefited greatly from the *My Cashew Business* trainings. Not only has he been able to maximize his profits from cashew, but he has also begun to make key investments to diversify his livelihoods.

"I was very excited about the *My Cashew Business* training," he said. "In addition to learning how to care for trees before, during and after harvest, I gathered all my cashews and negotiated the price with the buyer. Because of this, I sold my cashew for 37.5 MZN per kilogram while my colleagues sold for 35 MZN per kilogram."

Hilário is part of a group of 20 farmers who have given themselves the name *Change in the Field* ("Mudança do Campo"). Last harvest season they aggregated their production – 12 tons of RCN – and met the buyer together to negotiate the price as a group.

"Previously I didn't know how to negotiate the price with the buyer," Hilário said, "But now I earn more money." Though a seemingly small increase – about $.03 USD more per kilogram – this amounted to a roughly $100 USD increase overall, a large sum in rural Mozambique.

Hilário Valentim

Moreover, Hilário learned about income management and making good investments. "As a result of the *My Cashew Business* trainings, I learned to better manage my income by taking a percentage of the revenue from the prior harvest season to increase my farm production beyond the current use, investing in animal production as an alternative source of revenue," he said.

"I learned that the profit could be used for other investments, so much so that I bought two cattle that I will soon breed," continued Hilário. "With cattle, I can have at least two liters of milk per day for my family, improving our health, especially for our children. I also bought two sheep. In five years, I will be a big cattle breeder and will have milk and meat that I can sell to the community, which will also help to increase my cashew [production]."

Through the MozaCajú trainings, Hilário and farmers like him have been empowered by knowledge and information, which have not only enabled them to maximize their profits for cashew, but have helped them diversify livelihoods, strengthen their resilience and expand their hopes for the future.

MOZACAJÚ
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Enabling Environment

Recognizing that policy constraints lay at the heart of so many challenges in the Mozambican cashew nut industry, MozaCajú aimed to support reforms in the policy environment to sustain increases in production and processing that would turn the sector into one of the most competitive industries in the world. In order to do this, MozaCajú worked to build a knowledge base within Mozambique that would form the necessary foundation for subsequent key reforms in cashew law and regulation.

Knowledge-building within the industry

Competitiveness of the Mozambican Cashew Industry

At the outset of the project, MozaCajú analyzed the competitiveness of the cashew nut industry, detailed in a report entitled, Competitiveness of the Mozambican Cashew Industry. The report describes the history of the Mozambican cashew nut industry, current key players in the private and public sector, and a brief evaluation of the policies that regulate the industry. The report focuses on mapping out the costs of cashew processing in Mozambique. The primary conclusion of the report is that processors face slim margins and high costs of finance and export fees. They also face major challenges with procurement of RCN in terms of quality and quantity, as production levels in Mozambique are still low.

Ultimately, the report recommends priorities primarily around ramping up interventions to increase production levels, including implementing a strong monitoring and evaluation program on seedling distribution and planting; evaluating the vegetative potential of the varieties that are currently being multiplied; increasing the focus on post-harvest stewardship methods on the several extension services programs; and disseminating the concept of investment in inputs through the several governmental and non-governmental interfaces with the farmers.

Cost-benchmarking database

Complementing the competitiveness analysis conducted at the beginning of the project, MozaCajú maintains a continuously updated database of production and processing costs that benchmarks Mozambique against other cashew-producing countries. This work is being done in conjunction with TechnoServe's global cashew programs, and is the only database of its kind. This data is critical for investors and governments, yielding countless lessons about the economic impact of certain policies on cashew sector productivity, and indicating which countries present opportunities for investment.

Cashew Sector Industry Strategic Plan

In mid-2016, MozaCajú developed an industry strategic plan for the Mozambican cashew nut industry, which was detailed in a report entitled, Mozambican Cashew Industry Analysis. The report analyzes the competitiveness of the Mozambican cashew industry and notes that as it currently stands, the Mozambican cashew sector remains susceptible to certain uncontrollable risks and must plan for damage, but can actively lobby to combat risks around subsidies, availability of investment capital, and labor concerns. One major issue facing the industry is that the majority of the INCAJU budget goes to the chemical subsidies and seedlings program, which must be used more efficiently if they are to lift production. The report emphasizes that domestic policies must support business players throughout the value chain to protect against protected competitors that command the market.

The report includes a value chain assessment, which notes that in the current scenario, 49 percent of the value in the chain is captured if cashew is processed domestically. However, 45 percent of RCN is not being processed in country due to large inefficiencies in the upstream value chain and processing sector. Therefore, interventions aimed at boosting both production and processing in country, while reducing inefficiencies, can unlock significant value. The report recommends seven key interventions for the Mozambican sector that focus on the transformation of production in Mozambique in order to better supply both exporters and processors, including:

- Producer groups to increase producer cohesion to increase efficiency, information symmetry, and their commitment to cashew over other crops
- Vouchers to improve traceability and efficiency in distribution of subsidy, while laying the foundation for a private market
- Research and development to plant new highly productive seedlings and eliminate disease for the long-term viability of domestic RCN production
- Training assistance to improve cashew production techniques through sustained commitment to cross-training within communities
- Public information system to improve communication, channeling feedback to government and price/care information to farmers
- Processor initiatives to increase volume of RCN processed in Mozambique to create more jobs and capture more value in-country
- Lobbying efforts to better position Mozambican cashew in the global market while improving business conditions for processors and farmers

Industry stakeholder learning trips

In September 2016 and April 2017, TechnoServe hosted two delegations of Mozambican government officials (from INCAJU as well as customs agencies) and industry leaders (including processor representatives) to West Africa, where they were able to observe world-class processing facilities and witness the impact of impressive policy reform and government oversight of the sector. In Benin, the delegation visited the Fludor factory, a fully-automated and HACCP-certified factory with the capacity of 15,000 tons per year. In Ivory Coast, they visited a farmer cooperative and met with the Ivoirian Cotton and Cashew Council, as well as the Minister of Industry and Trade, where they learned more about the Ivoirian policies that are dramatically increasing cashew production in the country. The trips provided an opportunity for enhanced collaboration and relationships with INCAJU and the senior management of the factories, particularly around lobbying for more control measures over commercialization, exports, and the value chain, including the potential for more assistance to processors to do more in-country processing.

Cashew law and regulation reform

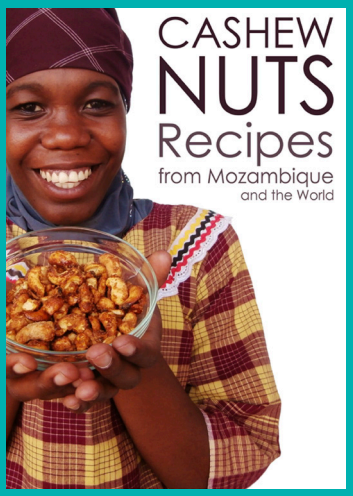
In 2016, MozaCajú forged an informal partnership with USAID's project SPEED+ (Supporting the Policy Environment for Economic Development), whose goal is to provide expert technical services to the Government of Mozambique to support economic and structural reform in the areas of agriculture, trade, business enabling environment, energy, water, and biodiversity conservation. As SPEED+ specializes in legal and regulatory reform, the goal of the collaboration was to leverage USAID resources and SPEED+ expertise, and ensure continuity to any policy reform efforts initiated during the final year of MozaCajú.

Under this partnership, MozaCajú worked with SPEED+, INCAJU and AICAJU, the Cashew Industry Association, to review the Government of Mozambique's Cashew Law, which was enacted in 1999 and had remained unchanged since then. MozaCajú advocated for reforms to be centered on a re-definition of INCAJU's role in the cashew industry--from direct implementation and delivery of services and inputs, to more extension and research into new varieties, techniques, and treatment methods; regulation of commercialization; and investment facilitation. From years of working closely with INCAJU, MozaCajú saw the vast importance of INCAJU creating an exit strategy from their input subsidy program and worked with them to develop strategies for the future of their programming. The new Cashew Law is still being drafted by SPEED+, but promises impact on the sector that will last beyond the closure of the MozaCajú project.

COOKING WITH CASHEW

Promoting domestic consumption of cashew as a nutritious product

In addition to being a valuable export-oriented cash crop, the cashew nut is a "highly nutritious and concentrated form of food, providing a substantial amount of energy," according to the United Nations' Food and Agriculture Organization. Recognizing the opportunity for households in cashew producing communities to utilize this readily available source of protein in areas plagued by constant food insecurity and malnutrition, MozaCajú promoted the consumption of cashew nuts as a nutritious product. Moreover, MozaCajú also recognized the potential for cashew to be sold on the domestic market as a tasty snack. MozaCajú held cooking demonstrations in various communities, which comprised of two distinct sessions. The first session was "Cashew as a nutritious food" which aimed to promote healthy ways to cook cashew as a nutritious product particularly for young children, through two different recipes: papas with cashew and spinach curry with cashew. The second session was "Cashew as my great business" which aimed to demonstrate diverse ways to cook cashew for sale in the local market, through recipes for cashews with sugar, coconut and sesame. MozaCajú also developed a cashew nuts recipe cookbook, which was distributed at events throughout the project lifecycle.



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