

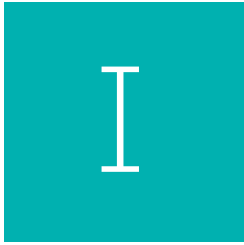


**USAID**  
FROM THE AMERICAN PEOPLE



# Food Processing in Sub-Saharan Africa

Solutions for African Food Enterprises Final Report



# Introduction: Solutions for African Food Enterprises



127

processors trained



1,709

participants  
received training  
via sector-wide  
trainings

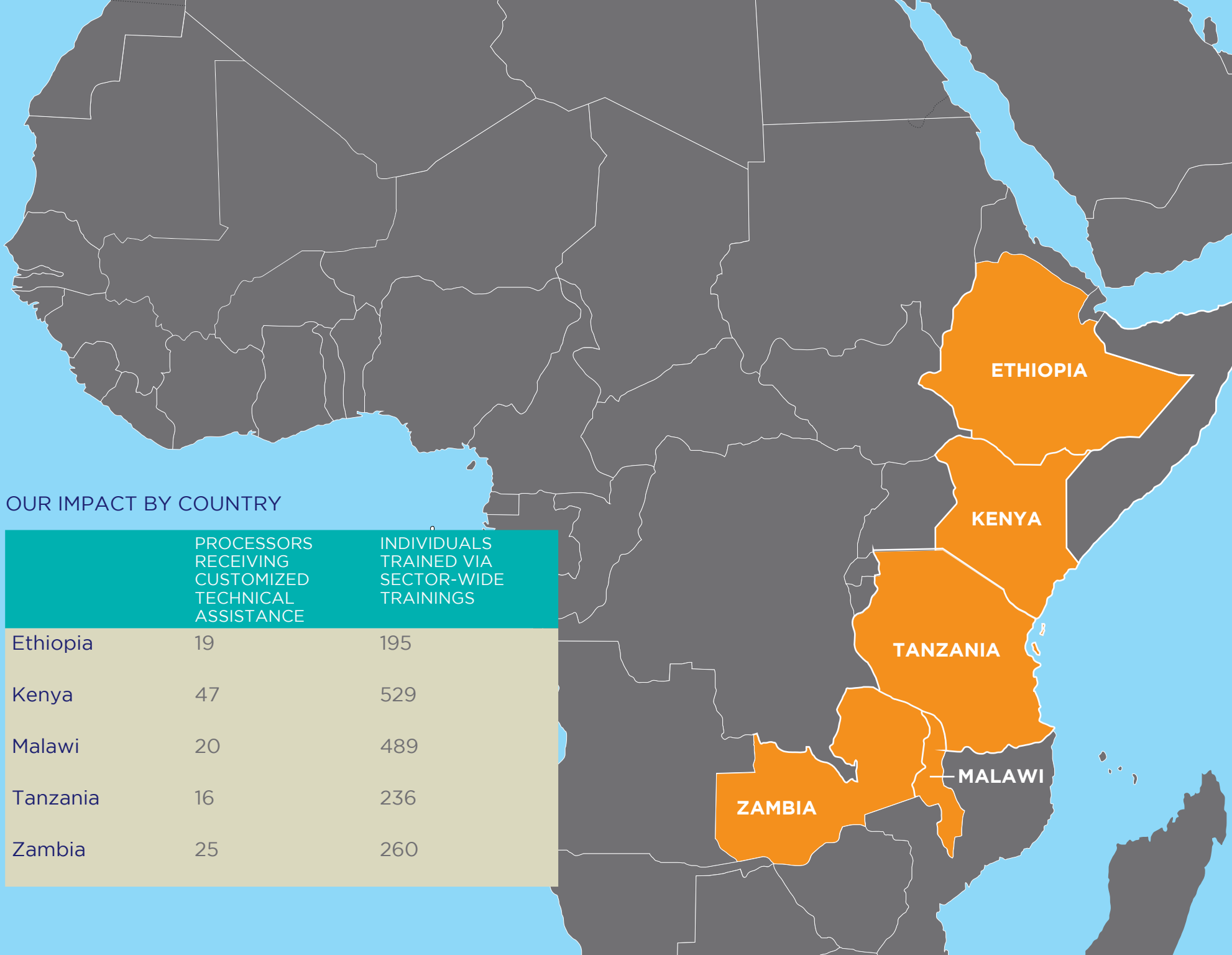
Food processing is a significant driver of local economies, creating supplier linkages for millions of small-scale farmers and helping elevate rural incomes across East and Southern Africa. As population and urbanization rates rapidly increase across the region while hundreds of millions of people continue to face food insecurity, the demand for food has never been greater. Yet, small and growing local processors often have difficulties producing high-quality affordable and nutritious products that meet food safety standards and regulatory requirements due to a lack of technical and business knowledge and investment.

Africa's food processing industry holds huge potential for growth: by 2040, it is anticipated that the value of food purchased in East And Southern Africa will grow seven-fold.<sup>1</sup> When equipped with the technical and business skills in food processing best practices, such as manufacturing, food safety, packaging, marketing, budgeting and planning, as well as increased access to inputs, new markets and finance, growing processors can play a significant role in providing for the region's food needs.

Solutions for African Food Enterprises (SAFE) was a public-private partnership between TechnoServe,

Partners in Food Solutions and the United States Agency for International Development (USAID) that aimed to increase the competitiveness of the African food processing sector and expand the availability of affordable and nutritious foods. SAFE was launched in 2012 in Kenya, Malawi and Zambia with a \$6.3 million grant from USAID. In 2016, SAFE expanded to Ethiopia and Tanzania and extended the timeframe in the other countries with an additional \$4.1 million grant. Between launch in 2012 and completion in 2017, SAFE benefited more than 1,000 food processors, who source from more than 800,000 smallholder farmers.

1. United States Department of Agriculture: <https://www.fas.usda.gov/data/turning-point-agricultural-exports-sub-saharan-africa>



OUR IMPACT BY COUNTRY

	PROCESSORS RECEIVING CUSTOMIZED TECHNICAL ASSISTANCE	INDIVIDUALS TRAINED VIA SECTOR-WIDE TRAININGS
Ethiopia	19	195
Kenya	47	529
Malawi	20	489
Tanzania	16	236
Zambia	25	260

# SAFE Final Report

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## II

# A New Approach to Supporting the African Food Processing Industry

With over a decade of experience working with food processors and suppliers, the government and public sector, and local NGOs in East and Southern Africa, TechnoServe has played a key role in developing and diversifying food processing capacity and catalyzing investment in food systems. TechnoServe's partnership with Partners in Food Solutions (PFS), refined through years of experience testing different interventions, has played a fundamental role in shaping our strategy while bringing world-class technical and business expertise to build the capacity of African food processors, thereby improving the availability of nutritious foods and creating market opportunities for smallholder farmers in the countries where we work.

## How It All Started

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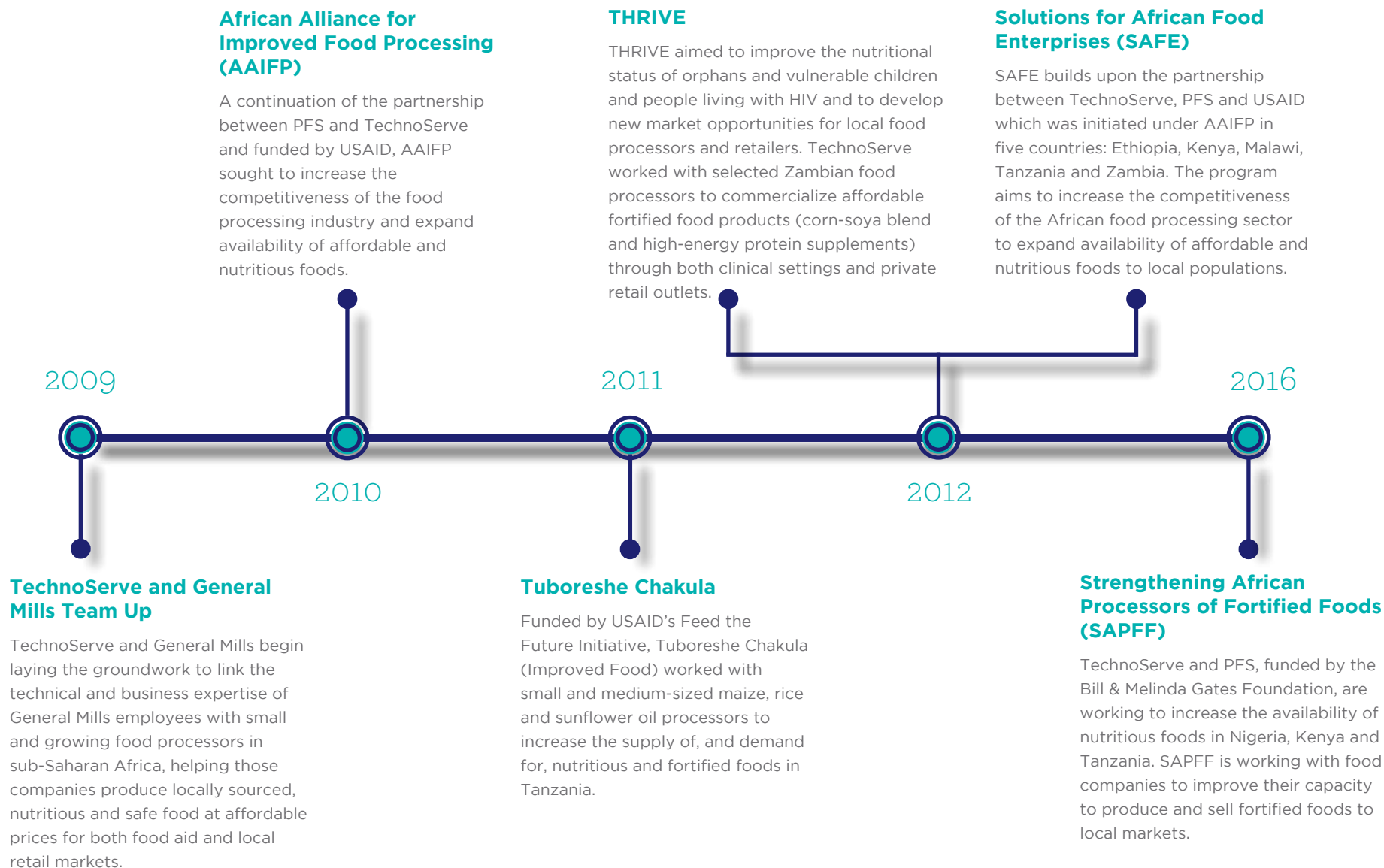
In 2009, General Mills partnered with TechnoServe, a nonprofit organization that develops business solutions to poverty by linking people to information, capital and markets. Together, they developed an initiative to link the technical and business expertise of General Mills employees with small and growing food processors in sub-Saharan Africa, helping those companies produce locally sourced, nutritious and safe food for both food aid and local retail markets.

The pioneering model initiated by General Mills led to the formation of Partners in Food Solutions, a consortium of world-class companies that now includes General Mills, Cargill, Royal DSM of the Netherlands, Switzerland-based Bühler, The Hershey Company and most recently, Ardent Mills. Employees from these PFS partners provide remote technical and business advice on a voluntary basis, coordinating with the in-country network of TechnoServe staff working alongside the local food processing industry.

With support from the Office of United States Global AIDS Coordinator (OGAC) and USAID through Feed the Future, the U.S. Government's global hunger and food security initiative, this alliance has grown to assist more than 1,100 food companies in Ethiopia, Kenya, Malawi, Tanzania and Zambia, providing markets for more than 829,000 smallholder farmers, reaching nearly five million people.

The profiles in the following section demonstrate the experience TechnoServe has gained in the food processing sector prior to the launch of SAFE.

## FOOD PROCESSING PROGRAM TIMELINE





## PAST PROGRAM PROFILE

### Growing Businesses through Access to Finance Tuboreshe Chakula (Improved Foods)

Three Sisters Sunflower Oil Mills was founded by the three Majengo sisters—Amina, Mariam and Jamila—in 2008. “I saw an opportunity in Dodoma. Consumers needed sunflower oil, and sunflower seeds were available in our area,” said Amina. But the sisters had little knowledge on how to run an oil processing business. Three Sisters was selected as one of 400 milling businesses to receive advisory services through the USAID-funded **Tuboreshe Chakula** Project. As one of the co-implementers on the project, TechnoServe advised the sisters on recordkeeping so they could track the amount of raw materials, how much oil was produced and the profits from their sales. The Tuboreshe Chakula Team also worked with the Majengo sisters to facilitate business plan development and financial proposals to support the loan application process. With this support, the Majengo sisters were able to secure a \$50,000 loan from the PFS Opportunity Fund to purchase a 2 MT/day capacity oil refinery.



The Majengo sisters (from left), Amina, Jamila and Mariam show off the products produced at their processing facility in Dodoma, Tanzania.

### A Focus on Nutrition THRIVE

The **THRIVE** program, a five-year USAID program, implemented by TechnoServe, PATH, FHI360 and Overseas Strategic Consulting, sought to improve the nutritional status of people living with HIV/AIDS as well as orphans and vulnerable children. This program provided nutritional assessments, counseling and support (NACS) packages in clinical and community settings, offered training and mentorship to community health workers and increased the production and quality of specialized nutrient supplements, such as maize-soya blends (MSBs) and high-energy protein supplements (HEPS), and improved the distribution of these products to bottom of the pyramid consumers.

TechnoServe worked with selected Zambian food processors to commercialize affordable fortified food products (maize-soya blend and high-energy protein supplements) through both clinical settings and private retail outlets. Leveraging our partnership with PFS, TechnoServe provided technical assistance to processors, supported their certification efforts, established new market linkages to clinical settings, and introduced products to public consumers through retail chains. Over the life of the project, TechnoServe assisted the production and distribution of high-quality HEPS to 21,000 clients, including retail consumers and health facilities.

## AAIFP PROFILE

**The Inauguration of an Innovative Partnership** As part of the first visit by a sitting U.S. president to Ethiopia, President Barack Obama toured Faffa Food Share Company and learned about how the African Alliance for Improved Food Processing worked to promote nutrition and food security in Africa.

On July 28, 2015, President Barack Obama had a firsthand look at TechnoServe's work to improve food security and increase the income of smallholder farmers in Ethiopia. During his visit, Obama toured the Faffa Food Share Company plant in Addis Ababa and learned about the **African Alliance for Improved Food Processing (AAIFP)**, a partnership between TechnoServe and PFS supported by USAID.

"We want Ethiopia not only to be able to feed itself, we want eventually Ethiopia to be a food exporter as well," President Obama said on the floor of the Faffa plant.

The Faffa plant is Ethiopia's leading producer of baby food for children over six months, and it is also a major source of fortified flour and foods, some of which it supplies to the World Food Program. Prior to AAIFP, one of Faffa's processing lines remained idle for several months of each year. Faffa leaders worked with PFS to identify and add new products that helped make more effective use of existing equipment. Other improvements facilitated by volunteer food industry experts include making the Faffa facility more energy-efficient, updating manufacturing processes, such as extrusion and drying, and increasing the quality of products, such as cornflakes and other breakfast cereals.

"We are honored to host the first visit by a sitting U.S. President to Ethiopia," said Zeko Kassim, Faffa Food Share CEO. "From the beginning of the company, we have tried to fight the debilitating



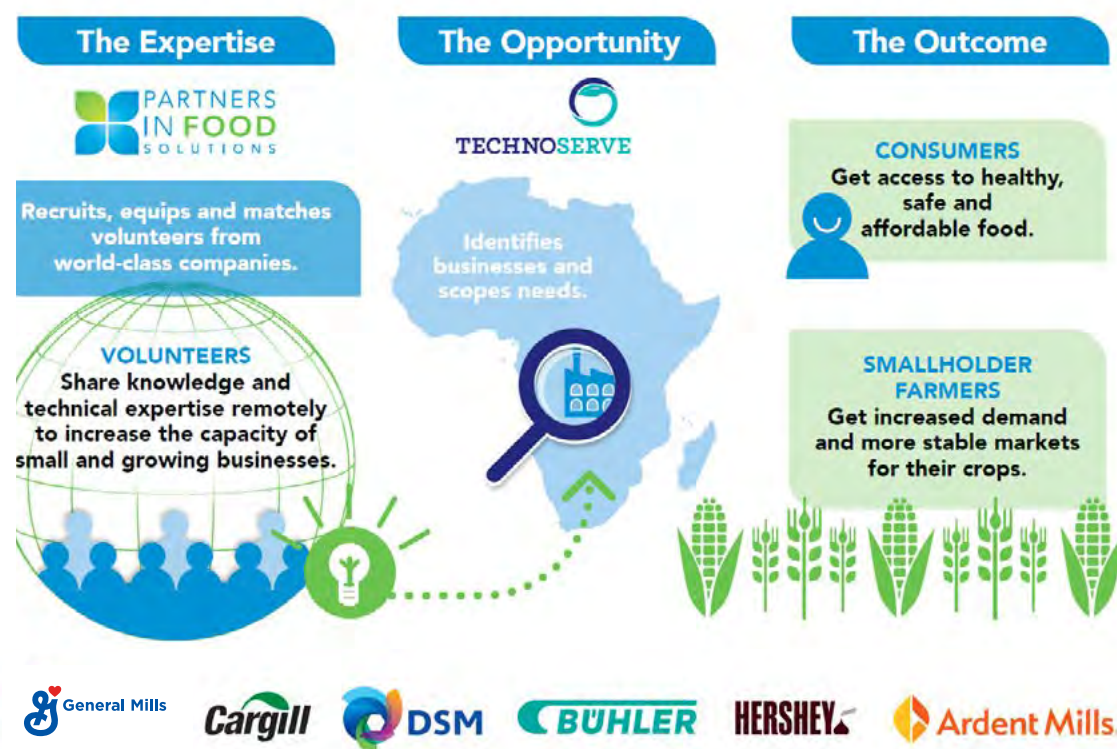
A worker at Faffa Food Share Company speaks with President Obama at their processing facility in Addis Ababa, Ethiopia.

effects of malnutrition on Ethiopian children by producing low-cost, high-protein weaning food and supporting nutrition for children and families, so we are fundamentally aligned with President Obama's Feed the Future Initiative. Our partnership with USAID, PFS and TechnoServe is helping to substantially improve our quality and boost our growth."

## Connecting Expertise with Opportunity

SAFE is built off of years of on-the-ground experience in food processing, through such programs as AAIFP, Tuboreshe Chakula and THRIVE. This program provides knowledge and technology transfer from volunteer experts to build the capacity of African food processors, improving availability of nutritious foods and creating market opportunities for smallholder farmers.

### THE SAFE MODEL



## III

## Customized Technical Assistance: Building Local Capacity

Food processing in East and Southern Africa is predominantly in the hands of small and growing processors. Due to limited exposure to technical and business knowledge, these processors are characterized by sub-optimal productivity levels, low efficiency rates and poor quality products, which limits their ability to access growing domestic and export markets.

## Building Local Capacity

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# 127

processors trained

To address gaps in the technical knowledge of processors, TechnoServe works as an agent for PFS in selecting food processors, developing tailored interventions to address their technical and business needs and sourcing the appropriate expertise from PFS partner companies. Over the course of the SAFE program, 127 processors have received technical assistance.

Such technical assistance includes: product quality improvement, new product development, equipment upgrading and compliance with standards, such as International Standards Organization (ISO) and Hazard Analysis Critical Control Points (HACCP), which focus on food safety and quality. TechnoServe Business Advisors also provide vital technical assistance on the business side, including business and marketing plans, branding, financial system improvement, recordkeeping, and linkages to investment and financing.



Jane Lungu, TechnoServe SAFE Program Manager in Zambia, offers a piece of advice to a worker at High Protein Food Limited in Lusaka, Zambia.



## SAFE PROFILE

**Hitting the Ground Running** In the first 90 days of a new processor relationship, TechnoServe implements quick wins—basic improvements that can be made with minimal investment—while simultaneously identifying volunteer experts at PFS to support more technical projects.



An Almi Fresh worker utilizes the new handwashing station that was created as a quick win during the SAFE program.

Asmamaw Tafes, Founder and General Manager of **Almi Fresh Milk Processing** in Hawassa, Ethiopia, has photos tacked to the walls of his office which serve as a reminder of how far his dairy processor has come from when he first started collecting milk in a single clay pot and selling it to his neighbors, back in 2005.

Over the years, Almi Fresh upgraded from one pot to multiple pots and as business operations continued to grow, they eventually acquired modern pasteurization equipment and were collecting an average of 2,500 liters of milk a day from 145 farmers. Despite the massive growth in sales, Almi Fresh lacked awareness of good manufacturing practices, which are vital to producing quality, safe products.

After joining the SAFE program in 2016, the TechnoServe team identified a number of quick wins, such as posting signs and instructions throughout the facility for personal behavior and cleanliness, building access points and cleaning procedures. In addition, the SAFE team developed a new organization structure which included updated job descriptions and salaries as well as a promotion plan for staff.

As a result of the quick wins, Almi Fresh employees have enhanced awareness of standard operating procedures. Employees now know when and where to wash their hands and refrain from consuming food in the processing area. Almi Fresh has also instituted a new cleaning schedule of food contact surfaces and equipment. These quick wins are a small but vital step to producing quality, hygienic products that will continue to propel Almi Fresh to the top of the Ethiopian dairy sector.

Today, Almi Fresh has the “Best Dairy Product Processor Award” pinned to its walls and has increased its production capacity to 10,000L per day, increasing their revenue by 100,000 to 150,000 ETB per day (\$4,275 to \$6,412).





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ወተት አልሚ  
ALMI FRESH MILK & MILK PRODUCED P

The Almi Fresh team at their dairy processing plant in Hawassa, Ethiopia.

## PFS Volunteer Spotlight: Scott Myers

With over 19 years of experience working as an engineer for General Mills, Scott Myers was the perfect candidate to support Java Foods, a recently launched processor in Zambia.

“This struck me as a neat opportunity to leverage my technical expertise while doing some greater good for the world,” he said.

When Scott first began remotely working with Java Foods, the processor had already ordered machinery from China that would arrive in just a few weeks. Scott dove right in, holding several calls with Java in order to design a factory layout that would increase efficiency and avoid any future processing issues.

In an effort to diversify its products and produce nutritious foods for Zambians, Scott worked with Java Foods to manufacture a Corn Soy Blend (CSB) product, called eeZee Supa Cereal, fortified with essential vitamins and minerals.

“For small companies like this, you really need some technical support, especially if you want to compete with big companies, with big budgets. We can’t usually get such support or send for a shelf life analysis because it is too expensive. This partnership has helped bring experts to the field to help us understand the best way for us to operate,” said Farayi Muzofa, Production Manager at Java Foods.

To Scott, PFS not only provides the opportunity to do good in the world, but it also serves as a professional development opportunity for volunteers. He explained how his experience working with PFS has motivated him to think more creatively and build his problem-solving skills. In his current position as Senior Principal Engineer at General Mills, he feels more confident improving systems in General Mills factories without physically being onsite.



“There is always an element of curiosity that we all have as scientists or people with technical backgrounds. While we want to share our experiences, we also want to learn too.”

SCOTT MYERS

SENIOR PRINCIPAL ENGINEER, GENERAL MILLS



## SAFE PROFILE

**Ripe for Marketing** Chankwakwa Limited faced strong competition from both local and imported products on the Zambian market. SAFE worked with Chankwakwa to increase brand visibility to gain an edge in the market.



“The moment we changed our labels, we doubled our sales. We have asked Pick N Pay to give us more shelves. SAFE’s training on branding opened my mind to other ways of doing marketing. Our truck is a moving billboard.”

DOROTHY ERICKSSON  
FOUNDER OF CHANKWAKWA LIMITED

What started as a small farm in Kabwe, Zambia, soon turned into an impressive food processor specializing in the production of dried fruits, jams, sauces and honey thanks to the entrepreneurial know-how of its founder Dorothy Ericksson. Although **Chankwakwa** was an innovative plant that prides itself on its sustainable use of agricultural products that would otherwise go to waste, it fell short when it came to developing a marketing strategy until the arrival of SAFE in 2013. In the words of Dorothy, “When [SAFE] came, we realized that we had no unique marketing. Our jam bottles looked the same as our competitors. Everyone in Zambia is using the same bottle. So our products were sitting on the shelf with the same bottles and orange or red lid.”

With advice from SAFE, Dorothy decided that the time was ripe to make adjustments to the packaging of Chankwakwa’s products as well as to develop a viable marketing strategy for the company as a whole. As a result, research and development volunteer experts from General Mills identified the best type of packaging for Chankwakwa’s dry products in order to enhance shelf life while marketing volunteers worked to ensure that the advertisements would catch the eyes of customers and set the products apart from their competitors. However, arguably the most novel marketing intervention was the decision to transform the delivery vehicles used by Chankwakwa into mobile advertisements by adorning the sides of the trucks with designs put forth by the marketing team.

Since participating in the SAFE program, Chankwakwa has increased volumes produced by 30MT annually and is working with 403 farmers (up from 199). The increase in visibility from the advertisements and branding adjustments has increased sales by 67 percent.

## IV

## Sector-wide Training: Promoting Sector Sustainability

Technical knowledge gaps exist across the food processing sector, impacting not only small-scale processors but also larger, established processors, government institutions, financial institutions, learning institutions and input suppliers. In order to maximize the potential of the food processing sector in East and Southern Africa, it is vital that all market actors are equipped with the knowledge and tools to drive production as well as the fora to enhance collaboration to create a thriving food processing ecosystem.



## Sector-wide Training: Promoting Sector Sustainability



1,709

participants  
received training  
via sector-wide  
trainings

65

sector-wide  
trainings

In line with growing interest around food processing, SAFE designed sector-wide trainings (SWTs) to address knowledge gaps and initiate coordination amongst various market actors. 1,709 individuals have attended the 65 training events that have occurred in Ethiopia, Kenya, Malawi, Tanzania and Zambia. SWTs are one to three day events on targeted knowledge gaps in the food processing industry, such as fortification, business strategy, marketing and quality control management. These trainings are led by local service providers with support from TechnoServe and PFS on the development of training content, and in some cases on the delivery of content, emphasizing adult learning methodologies. Trainings utilize a variety of training techniques, such as presentations of theory, practical exercises, demonstrations and case studies. These trainings attract a wide range of enterprises, including small-scale companies, farmer cooperatives, larger companies, university students and researchers, input suppliers and government officials. The combination of theory and hands-on exercises tailored to the specific participants in attendance ensures that sector-wide trainings equip participants with knowledge and skills that are applicable to their specific disciplines and can be shared with colleagues. SWTs also provide a forum for market actors from across the value chain to network and learn from a different perspective.



Three female participants at the SWT on aflatoxin in Morogoro, Tanzania.





TechnoServe Food Technologist, Josiah Edwin, provides a hands-on demonstration at the sector-wide training in Morogoro, Tanzania.



## SAFE PROFILE

**Setting the Standard for Safety** Aflatoxin contamination can affect the entire supply chain for susceptible crops making it a serious health hazard. SAFE hosted a SWT to increase awareness on how to address this issue.



A group of participants discuss good agricultural practices at the SWT in Morogoro, Tanzania.

In February 2017, the SAFE Tanzania team conducted a sector-wide training on aflatoxin control and management in Morogoro, Tanzania. Aflatoxins are toxins produced by specific fungi that are found on agricultural crops, such as maize and peanuts and can become hazardous to consumers if the proper procedures are not taken. While much of the current responsibility for food quality management, specifically aflatoxin control and management, is left to the industries, warehouse operators, transporters and farmers, the government is playing an increasingly important role in ensuring that the foods that are being locally produced and imported at production sites, borders and in markets and shops meet the country standards for safety and quality (free from aflatoxin contamination). This training was therefore designed to provide food processing companies, Tanzania Foods and Drugs Authority, Tanzania Bureau of Standards and Tanzania Food and Nutrition Centre staff, with practical knowledge and skills in aflatoxin control and management to enable them to pioneer the availability of safer food to Tanzanians.

“I will use this knowledge to train our farmers. When we reject farmers’ raw goods, I will now make sure they understand aflatoxins so we can improve the quality of our product and keep our community safe.”

GEOFFREY MASSAWE  
JACKMA ENTERPRISES:  
ATTENDING PROCESSOR

## SECTOR-WIDE TRAINING TOPICS



## SAFE PROFILE

**Project Peanut Butter** Showcasing the importance of quality management systems to other food processors in Malawi.

Project Peanut Butter (PPB) is a Malawi-based nonprofit organization that produces a proven Ready to Use Therapeutic Food (RUTF), known as “Chiponde,” meaning “peanut butter” or “paste” in Chichewa, the language spoken by Malawians. PPB sources from 6,000 local groundnut and soybean smallholder farmers to produce the RUTF, which is fortified with Vitamins D, E and K, for severely malnourished children across Malawi.

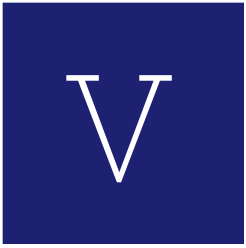
When the SAFE team first started engaging with PPB in 2013, the processor had not met its full potential. The shelf life of their RUTF’s were three months for bottles and 12 months for sachets. PPB’s imported ingredients were not being sourced effectively, placing a burden on production costs and PPB had no food safety management system in place.

Over 40 volunteer experts from PFS have worked with PPB and have implemented projects including establishing micro testing for quality onsite, conducting a shelf life analysis and market opportunity assessment, leading a HACCP review and making resulting improvements, and designing a new factory outside of Blantyre, Malawi.

As a result of these project charters, PPB is now ISO 22000 compliant, the shelf life of their products increased to nine months for bottles and 24 months for sachets, and PPB is sourcing cheaper non-fat dry milk, saving them \$66,000 annually. Their production has also increased to 1,000 metric tons (MT), up from 600MT in 2011.

Today, Project Peanut Butter has become a model processor for quality management systems, walking other processors in Malawi through their facilities to better understand not only the impact of such systems but also how to implement safety and quality recommendations.





# The Food Processing Ecosystem: Building Long-Term Success

Beyond processors, a number of private and public-sector organizations play key roles in East and Southern Africa's food processing industry. SAFE worked to strengthen these market actors by increasing accessibility to technical training content and engaging local experts in order to foster a more supportive food processing sector.







“Many of the processors said they had already been trained but they knew more of the theories than the practicalities. We helped them to implement on the ground. By going through presentations and forms and seeing it done in-person, it is a bit easier when they go to do it themselves.”

Daniel Chiremba  
Quality Management Systems Expert

## HARNESSING LOCAL EXPERTISE

Daniel Chiremba has decades of experience implementing quality management systems at public and private companies, including the Malawi Pharmacy Limited and Malawi Bureau of Standards. Today, he is a lecturer in food management systems at the Malawi University of Science and Technology as well as the Managing Director of Focus Training Associates, which conducts trainings and consultancies on a wide range of topics.

In late 2016, Daniel was brought on to lead a two-day, SAFE sector-wide training (SWT) on Quality Management Systems in Blantyre and Lilongwe, Malawi. The training included processors from across Malawi, staff and students from the University of Malawi and government representatives.

Daniel provided in-depth training on the steps to acquire Hazard Analysis and Critical Control Points (HACCP) certification, an international standard defining the requirements for effective control of food safety. He helped participants identify critical control points, a step or procedure at which controls can be applied and a food safety hazard can be prevented, eliminated or reduced.

To help solidify the concepts discussed during the SWT, attendees visited Project Peanut Butter, a processor that participated in the SAFE program. Participants witnessed hands-on demonstrations for how to implement quality management systems.

Following his participation in the SWTs, Daniel linked SAFE with two interns from the University of Malawi who supported processors to cement their knowledge through the practical application of quality management systems. Daniel is now in the process of developing a Master's program in Quality Management Systems for the University of Malawi.

Daniel Chiremba, Quality  
Management Systems  
Expert and Professor at  
the University of Malawi

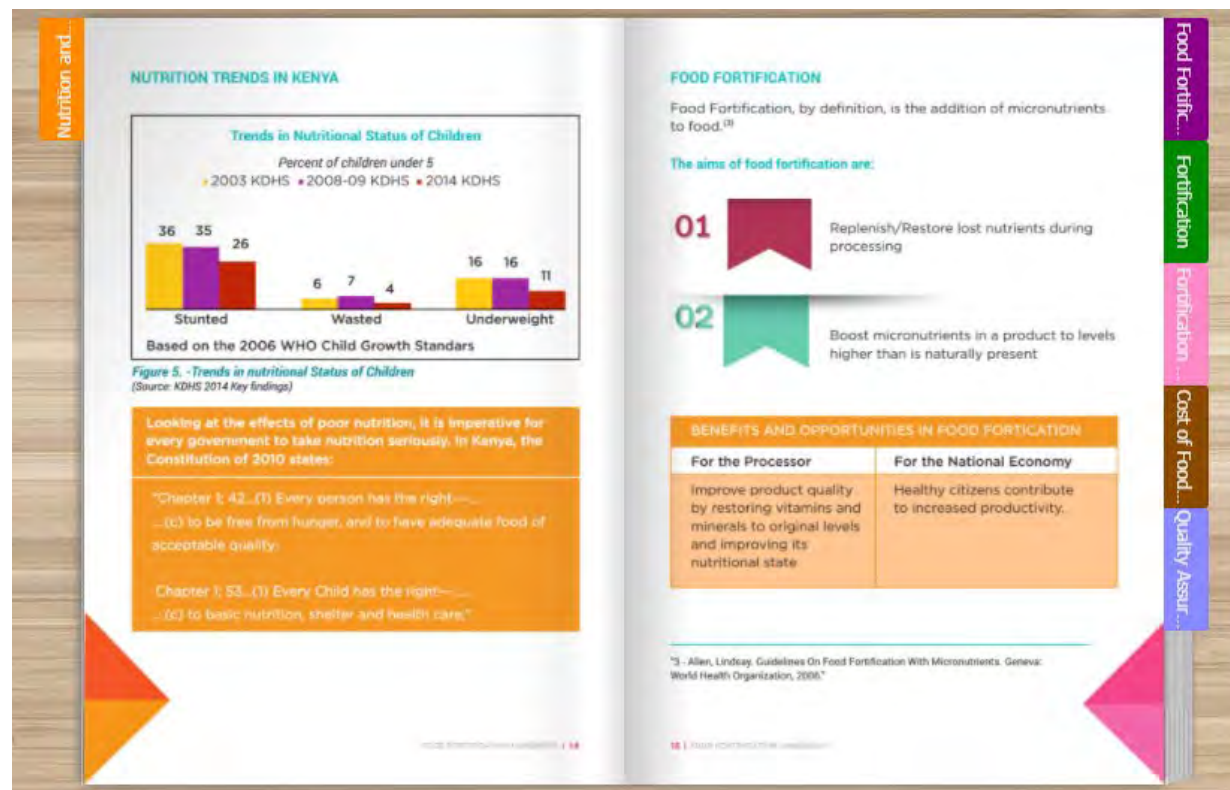
## DIGITIZING TECHNICAL TRAINING MATERIALS

In order to reach more industry players and to make SAFE's training materials accessible to a larger audience, the SAFE team converted technical assistance training materials into online resources for wider distribution.

The first resource is an e-book that provides a discussion of the basic business concepts that entrepreneurs in the agri-business industry need to enable them to run their businesses profitably and sustainably. The main areas have been identified as entrepreneurship, development of business models, strategic management, marketing, accounting and finance.

In addition, the team also released a comprehensive e-book on food fortification in Kenya for maize flour, wheat flour, edible fats and oils.

In the future, SAFE is aiming to transfer the more than 20 effective, field-tested sector-wide training modules, on topics such as access to finance and aflatoxin and mycotoxin control to e-learning platforms.



A section of the e-book on food fortification in Kenya which outlines the benefits and opportunities in food fortification.

## VI

## Food Security and Nutrition

Agriculture is at the heart of East and Southern African economies, employing 60 percent of the population, the majority of whom are smallholder farmers. Despite the region's vast agricultural resources, billions of dollars are spent annually importing food and the region faces some of the highest food insecurity rates in the world. In fact, 29 percent of children under the age of five in Eastern Africa are underweight.<sup>2</sup> SAFE worked with processors to boost production, thereby increasing the availability of food products, as well as provided technical assistance in fortification to provide consumers with essential nutrients.

2. UNICEF: [https://www.unicef.org/esaro/A\\_Snapshot\\_of\\_Nutrition\\_Situation\\_in\\_Africa.pdf](https://www.unicef.org/esaro/A_Snapshot_of_Nutrition_Situation_in_Africa.pdf)



## The Role of the Food Processing Industry in Food Security

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Food processing can play a pivotal role in addressing food security and nutrition challenges in sub-Saharan Africa. In fact, the strength of the food processing industry directly determines the production of abundant high-quality, nutritious and safe foods, which are readily available and affordable for consumers.

Processing foods is fundamental to prevention of losses following harvest as well as to maximize utilization of the harvest, particularly during periods of drought and poor production, playing a vital role in securing income for farmers.

The industry is also pivotal in supporting the availability of nutritional products and in the implementation of fortification of staple foods, providing consumers with essential nutrients.

Beyond the production of food, the industry drives local economies, creating expansion of other linkage industries and promoting beneficial infrastructure developments. The food processing industry is also the largest employer in the manufacturing sector.

Since food processing is strategically placed in the middle of the value chain, it has the potential for significant impact at both ends of the value chain: (1) by providing a reliable market for locally sourced raw materials, predominantly produced by smallholder farmers, and therefore impacting level and stability of income; (2) by providing consumers with the choice of locally produced foods which are affordable, safe and nutritious.

SAFE worked to enhance the impact of the food processing sector on food security and nutrition in the five countries of operation by providing processors with the technical know-how to increase production and to fortify products as well as by enhancing coordination between market actors.

## SAFE PROFILE

**THE POTENTIAL OF PEANUTS** Improving food management safety systems to ensure the delivery of safe and highly nutritious foods in developing countries.

In Eastern and Southern Africa, 25 million, or 40 percent of children under the age of five years suffer from chronic malnutrition. Adequate nutrition from the womb to 23 months of age is vital to children's health and cognitive and physical development.

The SAFE team first began working with **VALID Nutrition**, a leader in the development of Ready-to-Use Therapeutic Foods (RUTF), highly fortified oil-based, protein-rich milk-peanut pastes designed to treat and prevent severe acute malnutrition, in 2016. With a processing center in Lilongwe Malawi, VALID Nutrition aims to manufacture affordable and highly nutritious foods for sale and distribution in the region.

VALID Nutrition is now looking to support the drive to combat chronic malnutrition in Malawi by introducing its new Ready-to-Use Complementary Food (RUCF) to the retail market. The SAFE team is working with VALID Nutrition to access new markets through technical assistance on improving food safety management systems and obtaining ISO 22000 certification. The SAFE team is also developing a marketing strategy that will provide insights into branding, packaging and increasing customer awareness.

Since entering the SAFE program, VALID Nutrition officially has a food safety management system in place and has improved their HACCP plans. And following a recommendation by TechnoServe, VALID Nutrition hired a business development manager to assist in the rollout of the marketing plan.

With the knowledge and skills gained through the SAFE program, VALID Nutrition aims to increase production and access new markets, providing more nutritious foods to families in need.



A worker mixes ingredients at VALID Nutrition's processing plant in Lilongwe, Malawi.

*“The greatest value of SAFE has been the technical guidance. We are able to ask questions and even if they don't have the exact answer there is a pool of people where we can get the needed information.”*

ANDREW CHINGUWO  
GENERAL MANAGER, VALID NUTRITION

## SAFE PROFILE

### FACILITATING FORTIFICATION Partnering with the World Food Programme to increase access to fortified foods for children in school feeding programs in Kakuma, Kenya.

In 2014, the World Food Programme (WFP) expressed interest in establishing a school feeding program to provide children with fortified foods at Kakuma Refugee Camp, located in northwestern Kenya. Despite maize being one of Kenya's most popular staple products, many small-scale millers lack the capacity and know-how to use fortification to competitively and nutritiously produce their products.

In 2015, TechnoServe partnered with the WFP in Kenya and led a training with two milling groups, Jenga Maisha and Loyal, as well as Etic Women's Group and Marakusi Mali Shambani, on good manufacturing practices, milling and fortification. When the WFP provided Jenga Maisha and Loyal with the funds for fortification equipment, TechnoServe facilitated the sourcing of dosifiers for the processors, a machine that allows for the continuous dispensing of premix proportionate to the weight of the grain added during processing.

After the success of the initial training, TechnoServe conducted a Training of Trainers (TOT) on milling and fortification to local members of the WFP, as well as leaders of the groups that attended the original training, to build the capacity of trainers so they could deliver training on these topics in the future. When these trainers conducted their first trainings, TechnoServe attended to provide additional guidance to trainers and clarification to participants. Over 191 people from Kakuma attended the trainings.

Following the trainings, Jenga Maisha and Loyal continued to receive support through the SAFE program, such as technical support in good manufacturing practices and good hygienic practices. Thanks to the assistance provided by SAFE, Jenga Maisha and Loyal are each now producing 180MT of fortified flour each year, resulting in a net profit of \$17,840 per year. They are also supplying maize meal to the WFP supported school feeding program, an initiative that targets 70,000 children attending local schools.





## The Future: Building on SAFE

While years of work in the food processing sector have demonstrated the value of working with processors directly to enhance their capacity, there is still more work to be done. It is important to continue to build off of lessons learned, engage with new partners and promote investment to ultimately increase farmer incomes and reduce poverty through innovative activities that promote inclusive growth in the African food-processing sector.



## Highlighting SAFE'S Impact



59,192

metric tons of nutritious  
food products



\$13.1M

private sector  
investment



119

market linkages

### Knowledge and Technology Transfer to Food Processors

The SAFE program demonstrated the impact customized technical and business support can have on the production of nutritious food products. Our 378 capacity building projects have resulted in 574 new jobs, the introduction of 327 new technologies and management practices, and the production of nearly 60,000 metric tons of nutritious food products.

### Private Sector Investment

The SAFE program also demonstrated the business case for private sector investment in the food processing industry. With SAFE support, processors established new financial management systems and achieved certification by improving quality management systems, thereby making them more attractive clients for private sector investment. Over \$13,057,575 in private sector investments were made over the course of the program.

### Market Linkages

In order to strengthen the African food processing sector at large, SAFE worked to help processors to access new markets. Over 119 market linkages were made during the course of the SAFE program. In Zambia, for example, Kane Limited, a dairy processor, accessed six new markets, including popular supermarkets such as Pick N' Pay and Food Lovers Supermarket.



Dorothy Ericksson, owner of Chankwakwa Limited, shows off her fruit jams at her processing facility in Kabwe, Zambia.

## Lessons Learned

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### **Early Interaction with Food Processors**

To gain momentum and build trust with food processors early on, the SAFE team implements “quick wins,” or basic improvements that can be made with minimal investment, within 90 days of a new processor relationship. This addition to the program allowed the SAFE team to engage processors in a meaningful way quickly while simultaneously taking the first few months to better understand the client’s needs for targeted technical assistance from PFS volunteers.

### **Client Segmentation**

Our experience working with food processors has shown that services can be delivered more effectively and efficiently when processors are segmented based on size, maturity and degree of sophistication. Transitional and Accelerator clients typically demand targeted technical assistance customized to their specific challenges and growth plans, such as new product development and compliance with standards, such as ISO and HACCP. Foundational or earlier stage businesses typically need support in fundamentals of business basics, good manufacturing practices, and compliance with local regulations on food safety. In the future, we aim to help processors move from the “Foundational,” to “Transitional,” to “Accelerator” segments, increasing their absorptive capacity for more sophisticated technical assistance along the way.

### **Targeting Bottom of the Pyramid Consumers**

Although the SAFE program demonstrated the role that technical and business support can play in increasing the availability of nutritious food products, additional efforts are required to ensure that these products reach bottom of the pyramid consumers. Many of the products produced by the food processors supported by SAFE reached the shelves of supermarkets, making them available to middle income consumers, but product distributions channels that reach BOP consumers must be strengthened in order to increase the availability and affordability of nutritious foods in markets with higher food insecurity.



“My customers are now aware of the benefits of fortification and they see my logo and know, this is the good flour.”

BABUATIYA KARIVDRA  
MANAGING DIRECTOR,  
MAGAGU FARM LIMITED  
BABATI, TANZANIA



“When SAFE first came we had five staff members. When we saw that things were selling so much and we added a night shift, I hired more and more workers. Now we have 12 people!”

CAROLINE OBUYA  
OWNER,  
KINDA BAKERY  
KENDU BAY, KENYA

## SAFE PROFILE

**GOING ABOVE AND BEYOND** When Hirut Yohannes opened her dairy business, she aimed not only to provide for her family, but also to improve the lives of dairy farmers across Ethiopia.

“When I was growing up, every day my father brought me milk to drink. Because of this I can work as I like. I can run. I am healthy. So, when I saw that there was a shortage of milk in Ethiopia, I chose to enter into dairy,” said Hirut Yohannes Darare, Founder and General Manager of **Rut & Hirut Milk Cows Breeding & Dairy Production & Processing PLC**, a dairy processing company located in Chacha, Ethiopia.

While Hirut’s company now sources from over 450 local dairy farmers, 95 percent of whom are women, she began her dairy business on a small piece of land with just two cows. After receiving training in cattle and feed management from Land O’Lakes and USAID, Hirut began sharing her knowledge with the farmers who helped supply her with raw milk for distribution. In conducting these trainings, she couldn’t help but notice that the burden of labor fell almost entirely on women. “The woman cleans the cow, she milks it, she carries the milk to sell and she takes the cow for grazing,” she said.

That is why when Hirut officially established Rut & Hirut in 2008, she did it with the goal of improving the lives of female dairy farmers. In 2013, after purchasing processing machinery, Rut & Hirut established a dairy processing plant that produces a variety of products, including pasteurized milk, 16 types of cheeses, three flavors of yogurt and three types of butter and cream.

In 2015, Rut & Hirut joined the SAFE program, which helped develop good manufacturing practices (GMP) manuals and provided training to the company’s staff to ensure that the

processor operates within environmental conditions favorable to the production of safe food. Additionally, SAFE conducted an analysis on how to prevent spoilage and improve shelf life, as much of the milk is transported over 65 miles to be sold in Addis Ababa.

Since participating in the SAFE program, Rut & Hirut has experienced a 216 percent increase in revenue, and the shelf life of its milk increased from three to seven days after following SAFE advice to chill the milk during transport. Her cheese is now earning an additional 1,500 ETB (\$55.35) a day due to an increase in shelf life. Farmers are also reaping the benefits, with increased prices for the milk they are supplying.

Hirut has not only been striving to make a difference in her community, but also in the country’s entire dairy industry. After writing a letter to the Bill & Melinda Gates Foundation about the poor quality of local cattle breeds, Hirut has become a spokeswoman for the necessity of artificial insemination across the entire country. “One day, they showed up and said, ‘you asked for artificial insemination.’ I said, ‘I asked for all of Ethiopia, not just for me!’” Hirut has since spoken at multiple events, even traveling internationally to spread the word for the need of improved cattle breeds in Ethiopia.

Just recently, Hirut gained word that her business is the recipient of a \$268,255 grant provided by USAID to acquire a chilling tank that will expand capacity from 3,000L to 7,000L per day, providing a market opportunity for over 700 milk producers in Chacha.



A woman with short dark hair, wearing a dark blue long-sleeved shirt, is focused on operating a manual machine. She is using her right hand to press down on a lever of the machine, which is mounted on a wooden workbench. The machine has a blue frame and a silver metal base. A small white yogurt cup is positioned under the machine's head. In the background, there are various items on the workbench, including a blue plastic jug, a yellow jug, and some metal parts. The setting appears to be a simple, functional workspace.

Hirut seals the top of a yogurt cup with foil at her dairy processing plant in Chacha, Ethiopia.

“When you invest in a woman, the whole family feels the impact. Even the cow.”

HIRUT YOHANNES DARARE  
FOUNDER, RUT & HIRUT  
CHACHA, ETHIOPIA

## NEW PROGRAM SPOTLIGHT

### Strengthening African Processors of Fortified Foods Harnessing the Power of the Private Sector to Combat Micronutrient Deficiencies in Africa.

Food fortification, in which essential micronutrients are added during food processing, has been widely identified as a cost-effective strategy for addressing micronutrient malnutrition at scale. Undernutrition can lead to lifelong consequences, increasing the risk of impaired physical and cognitive development, and of diminished productive capacity.

In sub-Saharan Africa, hidden hunger affects millions of people. In these nations, combating undernutrition through food fortification is critical for long-term development, and many countries across the region mandate fortification in food processing. However, the effectiveness of these mandates is frequently undermined by inadequate compliance by millers and other food processors, often because the local companies lack the necessary technical knowledge and equipment, or believe the process to be too costly.

The **Strengthening African Processors of Fortified Foods (SAPFF)** Project takes a holistic approach to addressing those challenges, by providing technical assistance to food companies to increase their capacity to produce nutritious foods as well as working to strengthen the enabling environment that promotes the competitive, healthy and effective production of fortified foods.

The four-year, \$10 million initiative is a partnership between TechnoServe and PFS, funded by the Bill & Melinda Gates Foundation. Utilizing a market-based approach, it will help food companies in Nigeria, Kenya and Tanzania to increase

the availability of nutritious foods by improving their capacity to produce and sell fortified foods for local markets.

#### STRENGTHENING THE FOOD FORTIFICATION MARKET

The SAPFF Project will focus on two components of the food fortification market as a means to catalyzing lasting change in the sector:

##### 1. Strengthening the ability of food processors to comply with fortification standards

The project will work hand in hand with multiple stakeholders to build their capacity to fortify foods. The project will harness more than 16,000 hours of expert advice from employee volunteers at Partners in Food Solutions' member companies, leveraging the unique industry expertise of PFS's processing experts.

Customized technical assistance will be provided to at least 94 processors throughout the three countries where the project will operate, and shorter trainings will be provided to 200 additional companies. Technical assistance will not only cover topics directly related to food fortification, but will also help companies to adopt good business and manufacturing practices that enable them to fortify their products in the most cost-effective manner and improve their profitability.

##### 2. Supporting the fortification enabling environment

In order to create a market environment in which food fortification can sustainably improve access to nutrients, the SAPFF Project will engage with government ministries, industry

associations and nonprofit organizations to deepen cooperation and forge new partnerships between stakeholders.

It will also leverage the local knowledge, experience and relationships of organizations currently working in food fortification, most notably through a formal partnership with the Global Alliance for Improved Nutrition (GAIN) and close coordination with UNICEF, and by aligning the objectives of SAPFF with complementary initiatives, strengthening communication channels, and improving critical ecosystem support points such as government monitoring and enforcement, laboratory testing and consumer advocacy.

### **MARKET SOLUTIONS TO HIDDEN HUNGER**

Children suffering from hidden hunger are at risk of delayed cognitive development and other health risks that reduce a person's productive capacity. These effects can continue into adulthood, increasing risk of perpetuation, and prohibiting generations from leading healthy, productive lives. Although national programs supported by development partners have emerged across sub-Saharan Africa since 2002 to promote the fortification of staple foods, their struggle to meet compliance standards has limited their impact. By increasing compliance, the SAPFF Project will increase access to nutrients, and ensure the maximum impact of these activities by focusing on key food staples, such as wheat and maize flour, edible oils, sugar and salt. These fortified products have the scope and scale to make a large impact, especially for bottom of the pyramid consumers, allowing them to leave the cycle of malnutrition and live healthy, productive lives.



Women workers in Sannie, Ethiopia. Photo courtesy of Bobby Neptune.

## What Is Needed Next

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### **Smallholder Sourcing**

A fundamental challenge to African processors is the quality and reliability of their raw material supply. Since the product is only as good as the raw ingredients put into it, improvements in processed foods start with farm production. Greater emphasis needs to be placed on improving the linkages between smallholder farmers and food processors, strengthening direct relationships that leverage the resources and purchasing power of processors to support the required inputs, advice and logistics that would both benefit their purchase of quality product, as well as improving the market opportunities for smallholder farmers.

### **Access to Finance**

Growth in the food processing industry is often repressed by a lack of attractive financing options. Future program designs must consider financial options that allow for competitive and attractive lending and equity financing to the food processing sector.

### **Target Bottom of the Pyramid Consumers**

While the production of quality, safe and nutritious foods has been made possible, it should not end there. It is important that these products are made accessible to populations that need them the most. Research, new product development and marketing are necessary to target penetration of the bottom of the pyramid market.

### **Forging Partnerships Across the Value Chain**

With 12 of the 17 Sustainable Development Goals (SDGs) containing indicators highly relevant to nutrition, it is critical that partners unite in order to realize the SDG target of eradicating malnutrition by 2030. To sustain a competitive food industry necessary to meet the growing demand and nutritional needs of each country, it is necessary for processing programs to coordinate with other industry stakeholders, such as governments, learning institutes, the service sector and finance providers to align regulations and policy, ensure adequate skills and advice are available and to help unlock growth. This kind of cooperation has the potential to transform the food processing sector, transforming the lives of millions of farmers across the region.



## SAFE Targets and Results

INDICATOR	TARGET	AMENDED TARGET July 2015	NEW TARGET June 2016	ACHIEVED
<b>Processors receiving customized technical assistance</b>	<b>56</b>	<b>84</b>	<b>106</b>	<b>127</b>
<b>New technologies and management practices introduced</b>	<b>56</b>	<b>100</b>	<b>130</b>	<b>327</b>
<b>Number of jobs created</b>	<b>120</b>	<b>175</b>	<b>250</b>	<b>574</b>
<b>New private sector investment</b>	<b>\$1.0 million</b>	<b>\$1.2 million</b>	<b>\$5.0 million</b>	<b>\$13.1 million</b>
<b>Volume of improved nutritious foods sold (MT)</b>	<b>25,000</b>	<b>30,000</b>	<b>40,000</b>	<b>59,192</b>
<b>Total number of businesses reached</b>	<b>256</b>	<b>575</b>	<b>700</b>	<b>1,193</b>



**USAID**  
FROM THE AMERICAN PEOPLE

The U.S. Agency for International Development (USAID) is an independent agency that provides economic, development, and humanitarian assistance around the world in support of the foreign policy goals of the United States.



Connecting Expertise with Opportunity

Partners in Food Solutions, a consortium of leading global food companies - General Mills, Cargill, Royal DSM, Bühler, The Hershey Company and Ardent Mills - is working to strengthen food security, improve nutrition and increase economic development across Africa by expanding and increasing the competitiveness of the food processing sector. We link corporate volunteers from our world class corporate partners with promising entrepreneurs in nine African countries.



**TECHNOSERVE**  
BUSINESS SOLUTIONS TO POVERTY

TechnoServe works with enterprising people in the developing world to build competitive farms, businesses and industries. A nonprofit organization operating in 30 countries, TechnoServe is a leader in harnessing the power of the private sector to help people lift themselves out of poverty. By linking people to information, capital and markets, we have helped millions to create lasting prosperity for their families and communities. With nearly 50 years of proven results, TechnoServe believes in the power of private enterprise to transform lives.

Right: Workers processing flour at Lume Adama's processing plant in Mojo, Ethiopia.







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