



FEED THE FUTURE

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

ALLIANCE FOR INCLUSIVE AND NUTRITIOUS FOOD PROCESSING PROGRAM

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ANNUAL PROGRESS REPORT

Reporting Period: 1st October 2018 – 30th September 2019



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ACRONYMS

| | |
|-------|---|
| AAE | Ask an Expert |
| AINFP | Alliance for Inclusive and Nutritious Food Processing |
| BIA | Business Incubator and Accelerator |
| BOP | Base of the Pyramid |
| CBT | Capacity Building Team |
| CSB | Corn Soy Blend |
| CTA | Customized Technical Assistance |
| FBA | Farm Business Adviser |
| FTF | Feed the Future |
| GMP | Good Manufacturing Practices |
| HACCP | Hazard Analysis and Critical Control Points |
| ISF | Initiative for Smallholder Finance |
| OH | Outcome Harvesting |
| PC | Project Charter |
| PFS | Partners in Food Solutions |
| PPE | Personal Protective Equipment |
| QW | Quick Win |
| RUSF | Ready-to-use Supplementary Food |
| RUTF | Ready-to-use Therapeutic Food |
| SAFE | Solutions for African Food Enterprises |
| SHF | Small Holder Farmer |
| SME | Small and Medium Enterprise |
| SOP | Standard Operating Procedure |
| SWT | Sector Wide Training |
| ToT | Training of Trainers |
| USAID | United States Agency for International Development |
| USD | United States Dollar |
| WFP | World Food Programme |

I. EXECUTIVE SUMMARY

During the period under review, through the Alliance for Inclusive and Nutritious Food Processing Program (AINFP), TechnoServe in alliance with Partners in Food Solutions (PFS), provided one-on-one technical assistance to selected food processors with the ultimate goal of improving availability of safe, nutritious, and affordable food products. In addition, in partnership with Initiative for Smallholder Finance (ISF), AINFP sought ways to broaden options for those processors in need of financing. This report highlights the key program achievements, lessons learned and challenges in the four countries covered by the program (Ethiopia, Kenya, Tanzania and Zambia), covering the period between 1st October 2018 and 30th September 2019.

The total program expenditure to date is USD 3,400,980 against a life of program budget of USD 10,000,000, translating to an expenditure rate of 35%. The total cumulative leverage contributed by PFS to the AINFP program stood at USD 2,121,998, comprising of USD 791,265 as total value of volunteer hours (5,106 hours), USD 1,251,376 as PFS direct operating expenses on AINFP, and USD 79,357 as third party spend.

A total of 24 (10.5 female-owned/led) new food processors were on-boarded for customized technical assistance in Kenya, Tanzania, Zambia, and Ethiopia. Out of the newly recruited processors, 9 are transitional, 8 foundational and 7 accelerators, with a majority (42%) either processing dairy products or fortified maize flour, 37% processing breakfast cereals including oat and teff meal, fortified wheat flour, Corn Soy Blend/Ready to Use Therapeutic Foods (RUTF)/ Ready to Use Supplementary Foods (RUSF), and the remaining 21% processing baked products, blended porridge flour and fruit products. TechnoServe has to date provided Customized Technical Assistance (CTA) to 51 (29 female-owned/led) food processors in Ethiopia, Kenya, Tanzania and Zambia. Of these, 43% are Transitional, 33% Foundational and 24% Accelerator processors. As a result of the CTA, 29 (20 female-owned led), translating to 57% of the assisted processors have started applying improved management practices in their business operations mainly around Food Safety and Quality Standards.

The program adopted a new approach to roll out Sector Wide Trainings (SWTs). While traditional 3-day face to face training had been successful in helping food processors rapidly improve, the approach focused on long training days was not sustainable nor a cost-effective way for supporting partner companies long-term. This has informed the need for development of a digital, blended-learning solution that can transfer real-time, in-person training and advice through an application hosting bite-sized learning opportunities which would always be readily accessible. In view of this, the capacity building team focused on content development which will also be piloted on a mobile application for user testing in Kenya. Food Quality and Safety Management has been identified as the first training planned for roll out in Kenya and Zambia in November 2019, in Ethiopia and Tanzania in January and May 2020 respectively, to address a critical cross cutting challenge in the food processing sector.

TechnoServe engaged a Fellow to undertake a gap analysis study to aid in the development of an aggregator training model for more efficient and inclusive supply chain management with the ultimate goal of improving understanding of the backward linkages from processors to smallholder farmers. Lessons were collated from TechnoServe's work and other stakeholders in support of aggregators, seeking to understand how best aggregators of different shapes and sizes can be supported to add value to the supply chain, with a focus on two value chains – Soy and Mango – as representative of cereal and fruit and vegetable value chains. Based on the gap analysis undertaken, the study revealed that aggregators require additional technical, management, and soft skills to streamline existing business practices, expand client network, and achieve scale. As a result, an aggregator training model building on the Business Incubator and Accelerator (BIA) training framework has been developed (see Annex II).

Through Initiative for Smallholder Finance (ISF), AINFP continued supporting individual processors in Kenya, Tanzania, Zambia and Ethiopia to identify their financing needs. The program held meetings with various financial providers with the aim of understanding the lenders' financing model, focus areas, their products and services that would be suitable for the assisted food processors in the program, to identify risk mechanisms available and assess the possibilities of creating synergies and collaboration. Besides identification of processors in need of financing, the program provided access to finance customized assistance to 12 processors, out of which three have accessed financing to a tune of USD 340,805 and five are on the pipeline to be financed with the value of financing estimated at over USD 2,000,000.

AINFP continue to promote gender integration as evidenced by the number of female-owned/led processors' participation in the program and this can be attributed to the deliberate strategies deployed by the program in the recruitment of the processors as well as establishment of program gender champions who have been undertaking internal program assessment on gender integration opportunities among the assisted processors with the aim of developing a business case for gender integration for each country.

Further, AINFP supported selected clients to better understand the BoP market opportunity and to define an effective market and distribution strategy to target lower income consumers with nutritious products, including retail and through institutional buyers. Some of the activities undertaken by AINFP in support of this included: (i) Capacity building of processors to increase access to safe and nutritious food to BoP markets; (ii) Technical assistance in marketing strategy development ; and (iii) Facilitation of discussion between the assisted processors and identified BoP market distributors.

The main challenge encountered related to low pull for technical assistance from processors, particularly the foundational and some transitional processors, who may not have resources to implement project charters or QW recommendations, hence delaying implementation of recommendations on identified technical and business gaps among such processors. To counter this, the program improved on the client selection process to ensure assessment of the leadership and commitment as well as involvement of ISF to better understand the financial health of prospective clients. ISF also provided financing options to processors seeking access to finance through capital, grants, and equity.

Even though no major learnings have so far been formally documented, some of the key lessons include: (i) Placement of interns in processors' facilities has helped the assisted processors to see the value in recruiting skilled and professional personnel; and (ii) Given complexity in the ownership and management structures of some processing firms (those owned by several stakeholders) involvement of the key decision makers from the outset is critical for successful implementation of program recommendations.

Overall, despite the challenges faced during the period under review, the program has progressed well in the last one year of implementation, particularly in the provision of customized technical assistance. However, some activities like Sector Wide Training experienced some delay in the initial roll out phase due to introduction of new approach in the training. Major milestones have been reached in the development of a new approach to Sector Wide Training and trainings scheduled to commence in the next reporting period in the 4 countries. As a result, the program will be on track towards achieving the set target. The program is also lagging behind on the BoP and SHF linkages and thus innovative approaches that include collaboration with stakeholders implementing complementary activities are currently being strengthened to enhance program outcomes.

2. INTRODUCTION

The Alliance for Inclusive and Nutritious Food Processing

The Alliance for Inclusive and Nutritious Food Processing (AINFP) is a partnership between United States Agency for International Development (USAID), TechnoServe and Partners in Food Solutions (PFS) that seeks to create a more competitive food processing sector that generates inclusive economic growth. The goal of the partnership is to increase the production of safer, more nutritious foods that prioritizes procurement from local smallholder farmers and increases the availability of these food products to base-of-the-pyramid (BOP) consumers. Our theory of change posits that this can be achieved by connecting small to medium enterprise (SME) food processors with appropriate technical assistance, local suppliers, distribution channels and financing. Under AINFP, TechnoServe in partnership with PFS transfers technology and know-how to food processors in Kenya, Tanzania, Ethiopia and Zambia. The access to finance component is implemented in partnership with Initiative for Smallholder Finance (ISF).

The core activities aimed at building the capacity of food processors to become more competitive include Customized Technical Assistance (CTA) and Sector Wide Training (SWT). Overall, the program aims to:

- Provide CTA to 159 processors in Kenya, Tanzania, Ethiopia, and Zambia, to improve the competitiveness of individual processors;
- Provide short-term training to at least 500 food processors and key industry players through SWT across the food processing industry, with the aim of building their capacity to address common challenges;
- Capacitate 12 institutions and local partners to deliver training on select industry subject matter;
- Strengthen value chain linkages between processors and farmers, and value chain linkages between processors and BOP consumers; and
- Strengthen and expand the financing options for processors seeking to grow and scale, through support by ISF.

3. PROGRAM PERFORMANCE

3.1 PROGRESS AGAINST PROGRAM TARGETS

During year two, AINFP undertook the following activities: Provided Customized Technical Assistance (CTA) to the recruited processors; Sector Wide Training (SWT) preparatory activities on industry best practices targeting more systemic constraints and challenges; Supported selected processors to better understand the BoP market opportunity; Strengthened value chain linkages between smallholder farmers (SHF) and off-takers; and supported processors to access financing. The key AINFP accomplishments in line with Feed the Future (FtF) indicators are summarized in Table I below.

| Table 1: Program Progress Against Program Targets | | | | | | |
|--|--|----------------------------|--|--|---------------------------|--|
| PROGRAM ELEMENTS | FtF INDICATORS | LOP TARGETS | ANNUAL TARGET (1ST OCT 2018-30TH SEPT 2019) | ACTUAL ACHIEVEMENT/ RESULTS DURING THE REPORTING PERIOD | CUMULATIVE RESULTS | COMMENTS ON RESULTS |
| Outputs: 1. Capacity built and appropriate technology transferred to processors 2. New sustainable value chain linkages between processors and farmers introduced 3. New sustainable value chain linkages between processors and BoP distributors introduced 4. Access to finance and business development support facilitated 5. Access to finance and business development support facilitated | EG.3.2-4: Number of food security, private enterprises, producer organizations, women groups, trade associations and CBOs receiving USG assistance. | 659 (198 Female-owned/led) | 40 (12 female-owned/led) | 24 (10.5 female-owned/led) | 51(29 female-owned/led) | The results reported here refers to the number of food processors supported through CTA alone. The variance between the target and the achievement is due to delay in Sector Wide Training planned to commence in the next quarter. |
| | GNDR-2: Percentage of female participants in USG-assisted programs designed to increase access to productive economic resources | 30% | 30% | 44% | 57% | The percentage reported here refers to the processors that received technical assistance; Out of 51 processors who received CTA, female-owned/led processors were 29. |
| | EG.3.2-1: Number of individuals who have received USG supported short term agricultural sector productivity or food security training | 800 (264 female) | 240 (80 female) | 0 | 0 | The number of individual participants to be reported once SWTs commence as follows: Kenya in November 2019; Zambia in Nov/Dec 2019; Ethiopia in Jan 2020; and Tanzania in May 2020. |
| | HL. 9-4: Number of individuals receiving nutrition-related professional training through USG-supported programs | TBD | 0 | 0 | 0 | This is a new indicator introduced for Tanzania during this reporting period. The target and actual achievements to be ascertained in the next reporting period. |
| | E.G.3.1-14 : Value of new USG commitments and private sector investment leveraged by the USG to support food security and nutrition | USD 10,000,000 | USD 250,000 | USD 311,807.5 | USD 312,657.50 | New investments reported by processors as a result of AINFP support include: Kenya: Dala Bakeries invested USD 20,198 for procurement of distribution van and motorcycles; Prosoya – invested approximately USD 3130 in implementation of program recommendations that included renovation of the factory, pallets, installation of grain cleaning machine and magnets, automation of mixing area, procurement of PPEs and a simple fork lift. |
| | | | | | | |

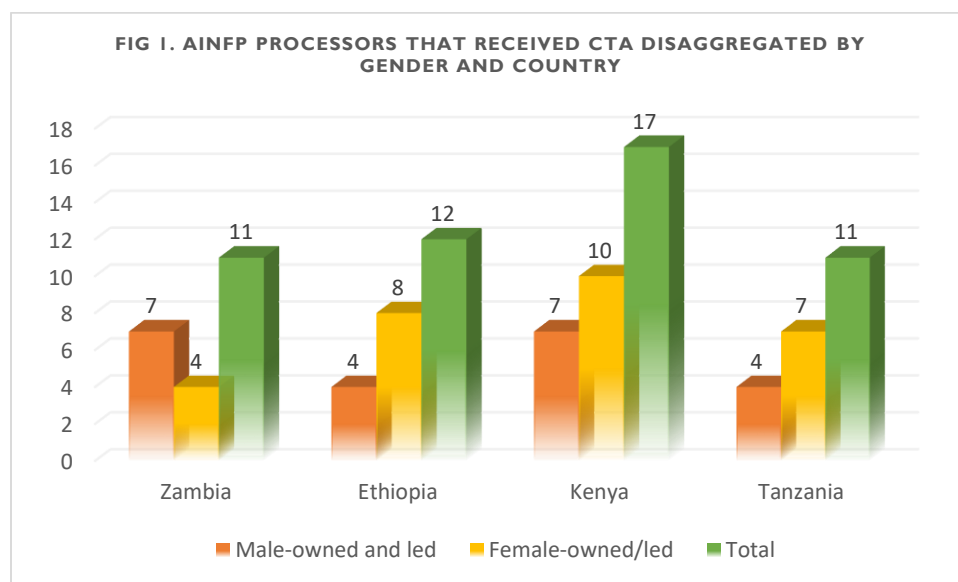
| | | | | | | |
|--|--|----------------------------|-------------------------|--------------------------|--------------------------|---|
| | | | | | | <p>Ethiopia: Rut & Hirut procured a generator and raw material sourcing estimated at USD 38,654.40; Boni food processing company invested USD 850 for procurement of a variable speed motor for the micro dossier; Addis Dallas invested 3000 USD to buy laboratory equipment and reagent to test fortified wheat flour; Barri food complex invested 1,666.67 USD to construct new laboratory and laboratory equipment procurement;</p> <p>Tanzania: Sozi Integrity USD 65,217.39 on fabricating a new maize milling machine, and construction of a new warehouse worth USD 6522; Supa Seki renovated the milling plant and installed wire mesh on the window for pest control all totalling USD 2,609;</p> <p>Zambia: Essential Commodities invested in screw extruder worth USD 84,800 and COMACO invested USD 86,000 in extra equipment in the peanut butter plant in order to increase production.</p> |
| | EG.3.2-26: Value of annual sales of farms and firms receiving USG assistance (attributable to project) | USD 22,500,000 | USD 4,500,000 | USD 1,020,513 | USD 1,020,513 | Value of annual sales reported are those reported by processors as attributable to AINFP intervention (refer to annex III) |
| | EG.3.2-24: Number of individuals in the agriculture system who have applied improved management practices or technologies with USG assistance | 495 (148 female owned/led) | 25 (8 female-owned/led) | 19 (12 female led/owned) | 29 (20 female led/owned) | The figure reported refers to processors who have started applying improved management practices in their business operations as a result of TechnoServe Customized Technical Assistance recommendations (refer to annex III for details). |
| | EG.3.2-27: Value of agriculture-related financing accessed as a result of USG assistance | USD 4,500,000 | USD 1,595,000 | USD 37,804.80 | USD 340,804.80 | 2 processors (1 in Tanzania and 1 in Kenya) accessed financing in the previous period worth TZS 400 million-173,000 USD - and KES 13 million-approximately USD 130,000. 1 processor in Ethiopia accessed financing from ENAT bank worth USD 37,804.80 in this period. Thus cumulative financing accessed estimated at USD 340,804.80 |

3.2 PROGRESS ON IMPLEMENTATION OF KEY PROGRAM COMPONENTS

3.2.1: Customized Technical Assistance to Food Processors

The program on-boarded a total of 24 (10.5 female-owned/led) new food processors for customized technical assistance: 9 (4 female-owned/led) in Ethiopia, 8 (2 female-owned/led) in Kenya, 4 (2.5 female-owned/led) in Tanzania and 3 (2 female-owned/led) in Zambia. Out of the newly recruited processors, 9 are transitional, 8 foundational and 7 accelerators, with a majority (42%) either processing dairy products or fortified maize flour, 37% processing breakfast cereals including oat and teff meal, fortified wheat flour, Corn Soy Blend/Ready to Use Therapeutic Foods (RUTF)/ Ready to Use Supplementary Foods (RUSF), and the remaining 21% processing baked products, blended porridge flour and fruit products.

Following recruitment of new processors, TechnoServe has to date provided CTA) to 51 (29 female-owned/led) food processors in Ethiopia, Kenya, Tanzania and Zambia as depicted in Fig. 1 below. Of these, 43% are Transitional, 33% Foundational and 24% Accelerator clients. From the profile of our processors portfolio, the female-owned /led processors dominated foundational and transitional level segmentation while male-owned and led processors are more concentrated at the accelerator level.



The CTA was provided through implementation of Quick Wins¹ (QW), Project Charters² (PC) and Ask An Expert³ (AAE) as detailed in Annex III. The key CTA provided to the assisted processors includes: food safety and quality control/standards; product shelf life extension; new technology development (e.g. maize bran drying machine); new product development/quality improvement; marketing strategy development; process optimization; branding and package design; inventory management; financial and human resource management; equipment sourcing and; supply chain operations.

¹ Quick Win is an identified gap on which project field staff work directly with a processor and concentrate in first 90 days of client relationship to deliver early value; PFS volunteer expertise is not needed.

² Project charter is an identified gap which requires a technical expert to guide in provision of a solution and may take several months to complete, usually implemented through PFS volunteer experts.

³ AAE are used to answer one off technical questions; question(s) that can be answered over a few calls and/or emails - PFS volunteer expert required.

As a result of the CTA, 29 (20 female-owned led) processors have started applying improved management practices in their business operations as highlighted below:

- 7 (6 female-owned/led) processors in Kenya have started applying improved management practices as a result of program recommendations. The practices applied are mainly on personnel hygiene, raw material segregation, use of signage, food handling and safety. These processors are: Dala who have implemented food safety signage to help in food safety and hygiene practice identification; Prosoya started applying improved management practices through implementation of 13 out of 25 Good Manufacturing Processes (GMP) recommendations provided; Wimssy Dairy started implementing the marketing strategy; Lactolife adopted process flow recommendation; Three farmer/miller groups registered their businesses as limited liability company; and Aspandos Dairy has established a Food Safety Team who have started conducting company-wide GMP training.
- 6 female-owned/led food processors in Tanzania have started applying improved management practices. These processors are: Sozi Integrity applied good warehousing management practices by proper arranging and separation of raw materials, finished goods, wastes/by products and spare parts/unused parts; improved plant hygiene; Mas-Q Associates applied inventory management tool and improved product coding system; M-South applied Occupation Health and Safety signs as well as good hygiene practices in their processing facility as evidenced by improved personnel and plant sanitation, basic stock management and human resource management; Shambani Milk formalized GMP documentation, implemented production process flow; Supa Seki Investment employed 6 new skilled employees, use of Personal Protective Equipment (PPE), hygiene best practice and proper warehouse management.
- 7 (1 female-led) processors in Zambia have started applying improved management practices or technologies as follows: COMACO adopted the advice on product line improvement to maximize peanut butter production, this has since saved the processor USD 55,551; Dairy King adopted recommendation on cheese improvement resulting in reduced milk waste by increasing the amount of cheese produced from 500lt to 700lt, and improved milk quality assessment skills by developing capacity of staff to be able to test the milk faster from 7 hours to 4 hours; Missoil & Seba Foods implemented food safety and personnel hygiene practices; Fisenge is renovating the factory; Yumi milling is in the process of building a new plant based on the plant layout design developed by TechnoServe; and Finta Dairy has started the process of improving their drainage system.
- 9 (5 female-owned/led) food processors in Ethiopia have started applying improved management practices or technologies as evidenced by: implementation of the marketing strategy by Melkam Endale Dairy Milk Processing which has started selling yoghurt to the BoP market in small quantities; Nutridense Food Manufacturing PLC is currently sourcing oat milling machinery following a recommendation by TechnoServe; fortified bread product development is in progress at Lume Adama; DH Geda Flour Factory developed new product (wheat germ) and started selling to bakeries in Addis Ababa; new product development (fortified biscuit) project ongoing with Addis Dallas Industrial PLC; Rut and Hirut dairy started implementing the business plan which led to increased production capacity of milk products (pasteurized milk and yogurt) from 500l/day to 2,200l/day; Boni installed a micro dosing unit for wheat fortification and currently is in the process of registering the fortified wheat flour; Barri Food Complex S.C established a laboratory for testing of maize grain and maize flour; and FAFFA food complex is working on the branding of the new product targeting pregnant and lactating mothers.

See below samples of best practices being implemented by AINFP processors that did not exist before the program intervention in Fig 2 and 3 as well as case studies from each country in Annex I.



Fig 2: Warehousing Management before and after AINFP intervention respectively



Fig 3.: Development and use of Good Manufacturing Practices signage at one of the assisted processor's plant

Moreover, TNS undertook 4 introductory customized in-house trainings on food safety and personnel hygiene at the premises of AINFP-assisted processors in Zambia as follows: 2 at Seba, 1 at Dairy King, and 1 at Fisenge Dairy, at which 41 (6 female staff) were trained. In Tanzania 6 processors (Khebhandza, Mama Seki Group, Master Super Sembe, Sozi Integrity, Shambani and Supa Seki Investment) benefitted from in-house training, reaching a total of 87 (10 female) employees. The in-house training was informed by the gaps identified during quality audits and requests from some factory floor supervisors which revealed that AINFP needed to create awareness on food safety and food handling among the processors' staff. The training therefore provided an overview on food safety and how the processors' personnel could play an active role in controlling hazards in the factory. The training further outlined how personnel should conduct themselves within the factory, the do's and don'ts as well as personnel hygiene. The anticipated training outcome is to enhance processor staff' understanding of basic food safety such as regular hand washing during the shifts, maintaining clean Personal Protective Equipment (PPE), etc. and behavioral change of factory employees over time. Fig 4 below depicts one of the AINFP processors who has introduced PPE after customized in-house training.



Fig 4: One of the processors whose employees have started implementing PPE practices as a result of AINFP intervention

Internships

A total of 5 interns were placed with processors in Tanzania, Kenya and Zambia to support the processors in implementation of the various projects. Placement of interns in processors' facilities has helped the assisted processors to see the value in engaging skilled personnel as highlighted below.

Tanzania: The two interns earlier placed with Sozi Integrity to support the maize bran drier project completed their six months' internship. As a result of their placement with the processor the project, that involved design of a maize bran drier prototype, has been successfully completed in preparation for scale up. The interns gained valuable professional experience and one of them has since secured employment, which is the ultimate goal.

In addition, one intern has been placed to support two processors, namely Super Seki Investment and Mama Seki Group, with technical support from the project team in the development and implementation of a Hazard Analysis Critical Control Point (HACCP) Plan, Inventory Management, and Standard Operating Procedures. The processors have started to see the value in the internships provided by the program as evidenced by the feedback below from one of the processors.

Super Seki Investment feedback on Internship:

“I am so delighted to have an intern placed in my factory. She has been of great assistance to us since she has helped us develop an inventory management tool from the template TechnoServe shared, which we have already adopted. We can now track our daily transactions from receiving raw material to final product sold.” Rita Sekilovere, owner of Super Seki Investment.

Zambia: An intern was placed at Dairy King Ltd for a period of six months and supported the processor in the development of Standard Operation Procedures (SOPs) as well as inventory management. Besides the intern gaining knowledge and hands-on experience in operating a dairy plant, the internship proved valuable to the processor as he was able to achieve the following;

- 20 Standard Operating Procedures (SOPs) and 22 record documents developed to improve operating systems.
- 6 One Point Lessons (the key steps on cheese production namely Acidification, Coagulation, Curds and Whey, Salting, Shaping, and Ripening) developed which partly contributed to improving quality of Mozzarella cheese.
- Reduction in milk testing time from 7 hours to 4 hours.

Kenya: One intern was placed with Prosoya to support implementation of some of the GMP recommendations. The intern was engaged with Prosoya for a period of one and a half months and could not cover the proposed three months because of medical reasons. Despite the short duration, the intern supported the food safety team formed by Prosoya management on implementation of the GMP recommendations, namely: conducting shop floor training that included hygiene practices, providing guidance and awareness of key staff on HACCP. Based on observation, there has been notable improvement on personnel hygiene during food handling in the plant as a result of program support.

3.2.2: Sector Wide Training

Based on the experience of delivering SWTs in the former SAFE (Solutions for African Food Enterprises) program, the program adopted a new approach to roll out SWTs under AINFP. While traditional 3-day face to face training had been successful in helping food processors rapidly improve, the approach focused on long training days was not sustainable nor a cost-effective way for supporting partner companies long-term. This has informed the need for development of a digital, blended-learning solution that can transfer real-time, in-person training and advice through an application hosting bite-sized learning opportunities which would always be readily accessible. In view of this, the capacity building team focused on content development which will also be made available on a mobile application for user testing in Kenya.

Food Quality and Safety Management has been identified as the first training planned for roll out in the next reporting period, starting with Kenya in November 2019, to address a critical cross cutting challenge in the food processing sector. TechnoServe in partnership with a team of PFS volunteers drawn from Food Safety, Learning and Development specialties worked with instructional design consultants to develop core content. A total of 21 lessons have been developed and structured to include text, videos and photos to enhance adult learning. A story line that will help deliver the content in a relatable format as the learners identify with the characters in the story has also been developed.

By the end of the reporting period, the capacity building team embarked on the development of: (i) relevant videos and photos to enhance the training content within the context of the countries of program operation; (ii) core curriculum structure incorporating adult learning methodologies; and (iii) Training of Trainers (ToT) approach that incorporates adult learning facilitation methodology, to ensure that all facilitators have standard facilitation guidelines.

3.2.3: Strengthened Value Chain linkages between Processors and Farmers

The program continued establishing collaboration with different stakeholders implementing complementary interventions that work with smallholder farmers and aggregators to leverage existing efforts. Some of the partnerships have started yielding results as highlighted below:

- **Tanzania:** As a result of the collaboration with NAFKA II (Cereals Market System Development Program), one of the assisted processors (Super Seki Investment Ltd) who had challenges sourcing quality raw materials and in the required quantity has been linked to 4 producer organizations in Iringa, namely Imalinyi, AMCOS, Kidugala and Ulumaii, and sourced a total 647Mt of maize worth USD 170,572 (as per on site price of TSH 580 per kg). On the other hand, Mama Seki attended a Business to Business (B2B) meeting organized by NAFKA II in Mafinga, which brought together producer organizations and food processors. Mama Seki has since established new relationships with 4 producer organizations from whom the processor intends to start sourcing quality raw materials. The processor organizations under NAFKA have access to improved seed from Corteva, hence the processors are guaranteed quality raw materials.
- **Zambia** supported two processors: Fisenge Dairy Cooperative in need of quality raw material sourced from SHFs, was assisted to formalize purchasing agreements with 500 farmers, and Shais Foods Ltd was assisted with drafting a contract template which they adopted to formalize purchase agreements with 100 farmers in millet production. In addition, other stakeholders implementing complementary interventions with SHFs and aggregators have been identified for possible collaboration such as Musika, a donor funded program which stimulates and supports private investment in the agricultural market with a particular focus on smallholder farmers. Musika aims to implement a program called “Making Agriculture Markets Work for Nutrition” funded by Irish Aid and WFP. Discussions on possible synergy are underway.
- **Kenya:** The program partnered with World Food Programme (WFP) with the aim of equipping two millers and three farmers’ groups with improved technical and business skills. The millers under WFP source raw materials from the local farmer organizations in Turkana. As a key activity under the AINFP-WFP collaboration, we carried out a training in business registration, financial management and business modelling to Katilu, Etic, Moruese, Loyal and Jenga Maisha reaching 68 female and 42 male individuals from the groups. Three groups (Katilu, Loyal and Etic Women Millers) have since registered their groups as limited liability companies. As a result, Katilu and Etic signed formal contracts to supply WFP with a total of 134MT of sorghum. Subsequently, these companies are expected to source raw materials from the local farmers, process it into nutritious fortified flours and sell it locally to the community.
- **Ethiopia:** AINFP identified a farmer linkage gap with one of the assisted processors, Barri Food Complex, in need of quality raw material sourcing, and supported the processor through:
 - Identification of a potential farmer group in collaboration with ACIDI/VOCA (Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance), lead agency of a USAID-funded farmer-to-farmer program, shared with the processor for linkage.
 - Development of grain quality testing standards, shared with the processor for inclusion in the SHFs’ agreement to aid in sourcing quality grain.

As a result of the customized support on SHF linkages, the processor has been able to undertake sample testing and identified one of the farmer organizations with quality grain with whom the processor intends to establish a sourcing agreement upon securing working capital from a bank.

The program has also been successful in establishing new supply chain linkages between DH Geda Flour Factory and two potential farmer organization suppliers, namely Mejawerka Farmers' Cooperative Union and Hitosa in Oromia Region in Ethiopia.

In addition, TechnoServe engaged a Fellow to undertake a gap analysis study to aid in the development of an aggregator training model for more efficient and inclusive supply chain management with the ultimate goal of improving understanding of the backward linkages from processors to smallholder farmers. The Fellow collated lessons from TechnoServe's work and other stakeholders in support of aggregators, seeking to understand how best aggregators of different shapes and sizes can be supported to add value to the supply chain, with a focus on two value chains – Soy and Mango – as representative of cereal and fruit and vegetable value chains. The study revealed that, broadly four types of aggregation model-types⁴ were prevalent within the two value chains:

- Farmer Forward: farmer aggregates, transports and sells to processor
- Aggregator back: aggregator purchases crops, may provide inputs, aggregates and transports to processor
- Processor back: processor purchases, aggregates, transports and processes
- Vertically integrated player: coordinates the whole value chain from farm to retailing

Interviews were conducted with various aggregators operating within each of the four model-types to map out the entire landscape of aggregators based on size of business, stage/sophistication, and markets served (local, processor, export). This exercise aimed at understanding the growth trajectory of aggregators up the value chain from village-level operations to export-market stage in order to identify the opportunity segment of aggregators for piloting an intervention with selected processors.

The critical gaps identified along the upstream and downstream linkages that if addressed could bring more transparency and efficiency in the aggregation business include:

- (i) Working Capital: Most aggregators lack sufficient working capital to procure large volumes of raw material which limits business growth and ability to supply to large buyers;
- (ii) Warehouse Management: Mid-size aggregators lack technical know-how on warehouse management; they do not follow SOPs which affects quality and safety and leads to spoilage;
- (iii) Quality Assurance & Food Safety: Many aggregators lack knowledge on quality assurance practices; almost none are aware of food safety measures;
- (iv) Marketing and Distribution: While most mid-size aggregators demonstrate operational skills, most of them lack business planning and execution skills, business development and financial management skills needed to drive growth.

Based on the gap analysis undertaken, the study revealed that aggregators require improvement to technical, management, and soft skills to streamline existing business practices, expand their client network, and achieve scale. As a result, an aggregator training model building on the Business Incubator and Accelerator (BIA) training framework has been developed (see Annex II).

⁴ Based and adapted from discussions on approach/methodology from upcoming Bain publication "Growing Prosperity 2"

3.2.4: Increased Business Development Support and Access to Finance

AINFP, through ISF, continued supporting individual processors in Kenya, Tanzania, Zambia and Ethiopia to identify their financing needs. The program held meetings with various financial providers with the aim of understanding the lenders' financing model, focus areas, their products and services that would be suitable for the assisted food processors in the program, to identify risk mechanisms available and assess the possibilities of creating synergies and collaboration. Besides identification of processors in need of financing, the program provided access to finance customized assistance to 12 processors, out of which three have accessed financing and five are on the pipeline to be financed, as summarized in Table 2 below. The customized assistance provided encompassed provision of advice on financing options and investment preparedness through support in the application process and follow up with the identified financiers.

Table 2: Financing needs identified and processors supported to access finance

| County | Processor | Value chain | Financing Purpose | Estimated financing need/Accessed in USD | Financing status |
|----------|----------------------------|--|--------------------------------------|--|---|
| Tanzania | Sozi Integrity | Cereals (Fortified maize flour) | Working capital & capex | USD 264,847 | Loan amount of TZS 610 Million (equivalent to USD 264,847) approved by CRDB awaiting disbursement |
| | Rumishael | Cereals (Blended porridge flour) | Working capital | USD 130,000 | Loan approved awaiting disbursement |
| | Supa Seki | Cereals (Fortified maize flour) | Working capital and capex | USD 430,000 | Loan assessment in progress |
| | Mama Seki | Cereals (Fortified maize flour) | Working capital and asset financing. | USD 173,000 | Accessed debt financing valued at TZS 400 Million (Equivalent of USD 173,000) from TADB |
| Kenya | Suka Dairy | Dairy products | Asset finance | USD 190,000 | Loan approved pending disbursement |
| | Prosoya | Cereals (Blended porridge flour) | Capital expenditure | USD 2,000,000 | Loan approved pending disbursement. |
| | Kitui Enterprise Promotion | Fruit Juices | Working Capital | USD 130,000 | Accessed matching grant of KES 13 Million - equivalent to USD 130,000 - from Kenya Crop and Dairy Market Systems. |
| | Dala Industry Ltd | Orange Sweet (OFSP) products Fleshed Potato baked | Asset financing | USD 100,000 | Client preparing financials and investment proposals. |

| | | | | | |
|----------|-----------------------|---|--|---------------|--|
| | Wimmsy | Dairy products | Working capital, asset finance Asset financing | USD 300,000 | Client preparing the investment proposal |
| Zambia | Fisenge Dairy | Dairy products | Working capital and asset finance | USD 60,000 | Loan approved pending disbursement |
| | Essential Commodities | Corn Soy Blend (CSB)/Texturized Soy Protein (TSP) | Capital Expenditure | USD 2,000,000 | Client preparing financial model and investment proposals |
| Ethiopia | Rut and Hirut | Dairy products | Capital Expenditure and Working Capital | USD 387,791 | Accessed 1.1 million Ethiopian birr (Equivalent of USD 37,804.80) from ENAT Bank for procurement of a generator and working capital (raw material sourcing). Seeking additional loan from ENAT bank for working capital worth 11,541,454 Ethiopian birr (387,791 USD as of October 04, 2019 OANDA .com) since ENAT bank earlier funded a small part of the processor financing need. |

3.2.5: Strengthened Distribution Channels, especially to BoP Markets

AINFP supported selected clients to better understand the BoP market opportunity and to define an effective market and distribution strategy to target lower income consumers with nutritious products, including retail and through institutional buyers. Some of the activities undertaken by AINFP in support of this included:

- Capacity building of processors to increase access to safe and nutritious food to BoP markets
- Technical assistance in marketing strategy development
- Facilitation of discussion between the assisted processors and identified BoP market distributors

Capacity building of processors to increase access to safe and nutritious food to BoP markets

Following the need to build the capacity of individual AINFP processors to increase production and availability of safe, nutritious and affordable food for low income BoP consumers, TechnoServe partnered with BoP Innovation Centre (BoP Inc) to conduct a BoP Market Challenge. The Challenge was a competitive solicitation of AINFP food processors who are keen to target the BoP as their core market segment. The challenge is a three-phased approach with three levels of competition aimed at supporting selected businesses to build a practical and robust growth plan for distribution and sale of nutritious food to the BoP, where the finalists receive customized implementation support to actualize their BoP strategy.

The three Bop Challenge phases include:

Phase 1: Market Boot Camp

Prior to the Market Boot Campⁱⁱ, a request for proposals was sent out in June, 2019 to AINFP processors across the four implementation countries inviting them to participate in the Food Processors' BoP Challenge. A total of 9 processors drawn from Ethiopia, Tanzania and Kenya responded to the proposal, out of which 6 (2 from each country) were selected through competitive selection criteria to compete in the challenge.

The selected processors participated in a 4-day workshop between 20th and 23rd September 2019 in Nairobi, Kenya designed to develop their capacity to better understand BoP market dynamics and the opportunities that will support them expand marketing and distribution to low income consumers. Specifically, the workshop enabled the selected food processors to have a better understanding of: BoP market dynamics and complexities; positioning of their products to the BoP consumer; and action plan design and implementation of their marketing and distribution strategy.



Fig 5: Cross section of the participants during the BoP challenge workshop

Phase 2: Business Case Development

The processors attending the Boot Camp received support to develop a competitive business strategy and action plan for targeting BoP markets. At the end of the Boot Camp, each processor presented their business model and justification to target the BoP market in their country through a competitive selection process to an external evaluation panel. The competition aimed at identifying the processor with the most innovative BoP business strategy for hands on technical assistance to launch their strategy with the support of BoP Inc. experts. Rumishael and Daughters, a Tanzanian processor, emerged the winner of the competition out of the 6 processors that presented their business cases to the panel.

Phase 3: Implementation Support

This phase aims at providing hands on customized technical assistance to the winner of the BoP Challenge business pitch competition to launch their marketing and distribution strategy. The winner will receive hands on customized support from BoP Inc. experts for a period of five months while the other five contestants will continue receiving customized assistance from the TechnoServe Market Linkages Specialist to actualize their action plans. Specifically, the winner from the pitching contest will receive technical assistance from BoP Inc. to create a strong marketing and distribution strategy in the following

ways : (i) Together with the processor, BoP Inc. will gather consumer insights to determine the value proposition of the product, the positioning of the product compared to competitors, and the market language to be used; (ii) Marketing and distribution strategy workshop to deliberate on the outcomes of the consumer insights, interpret them in the context of branding and marketing communication and distribution models and together design a marketing and distribution plan and; (iii) Market validation and product launch.

Technical Assistance on BoP Marketing Strategy Development

AINFP provided customized assistance to selected processors with an aim of strengthening distribution channels to the BoP market through support in development of marketing strategy, including packaging and branding design, market activation and route management targeting BoP consumers, as highlighted below:

Tanzania leveraged on another TechnoServe program, namely Smart Dukaⁱⁱⁱ, with the aim of establishing linkages between assisted processors and BoP markets. As a result, one of the assisted processors (ASAS Dairy) established new relationships with 35 micro-retail shop owners in Dar es Salaam who have since started ordering products by themselves from ASAS main agents located in Dar es Salaam. Volume of sales as a result of the new BoP market linkage to be established in the next reporting period.

Besides the linkage. Tanzania supported 3 processors to develop marketing strategies with the aim of reaching the BoP market, namely:

Shambani Milk

The program provided technical assistance to Shambani Milk on the shelf life extension for fresh pasteurized milk as one of their initiatives to reach niche BoP markets. Currently, Shambani is in the process of developing a new product (flavored fresh pasteurized milk to be packed in 200mls bottles) targeting school-going children. AINFP initiated discussion with the Tanzania Dairy Board to leverage support in promoting milk products to school feeding programs in Morogoro Region. The processor intends to target 5 schools with a total of 3,950 pupils before scale up. During this period, the processors undertook an awareness campaign with the school children as highlighted in the video link below.



Shambani milk promoting Bop market to school children.MP4

Super Seki Investment

Following the local government authority directive to have all government schools in Iringa to use fortified flour, with the ultimate goal of reducing malnutrition among school-going children, AINFP identified this as a potential market niche for the assisted processors in the region who were already complying with the fortification requirements. In view of this, TechnoServe reached out to Super Seki Investment and provided a recommendation for the processor to explore the new potential market which was lacking in her current sales strategy. The processor has since established 4 new markets and has signed non-binding contracts to supply 50MT of fortified maize flour to 3 government primary schools and 1 college in Iringa Region every three months.

Khebandza Marketing Co. Ltd

The processor's main pain point had been marketing of its finished product given stiff competition from other maize milling processors in Dar es Salaam. As a result, AINFP supported the processor

by providing recommendations on the need to engage a marketing personnel and explore the untapped local market in Mbeya instead of over-reliance on walk-in clients and Dar es Salaam market. The processor has since engaged a marketing personnel and as a result established 3 new BoP markets (1 distributor in Mbeya, 2 in Mbalali) and distributed 5MT.

Zambia's strategy on BoP market targeting is two-fold; firstly, to target clients that have already established systems to distribute to the BoP. Companies including COMACO and Seba are already selling to the BoP market, however would like to increase uptake of Corn Soya Blend (CSB). AINFP is thus currently providing customized assistance to COMACO on packaging design and market linkages to the food aid markets; the program supported COMACO in marketing CSB to John Snow Inc. (JSI), the government's lead partner in strengthening supply chain systems for HIV-related health commodities, which resulted in COMACO selling 97MT of CSB to JSI. Secondly, AINFP intends to use existing distribution channels being piloted by organizations such as International Development Enterprises (iDEs) called "Peer to Peer Connections", where they develop the capacity of farmers they call "Farm Business Advisors" (FBAs) or lead farmers to collect information on BoP market need. This then informs suppliers what agro or food products to distribute at that level. The FBAs also run small shops at the community level where they can act as last mile distributors. As a result, three processors, namely COMACO, Java and Essential Commodities, have been introduced to 33 iDE FBAs to distribute their products in rural Mumbwa and Chibombo. This is the initial stages of the linkage and only USD 100 of sales were realized by the processors to date.

Ethiopia linked one of the processors' (Melkam Endale Dairy Milk Processing) with a consumer cooperative union in Addis Ababa to sell its pasteurized milk and yoghurt products. Consumer cooperatives are one of the preferred channels of distribution and thus play a key role in reaching the BoP consumers in Addis Ababa. Specifically, AINFP facilitated initial discussion between the Rahy primary cooperative under Mherab Consumer Cooperative Union and the processor. The two actors have since reached an agreement that has enabled Melkam Endale to sell 420l of milk and 7kg of butter and cheese to the BoP market in Addis Ababa through the Mherab Consumer Cooperative Union. Initial discussions have also been held between Barri Food Complex and Mherab with the ultimate goal of creating a distribution channel for Barri to sell its fortified maize and wheat flour products.

Further, AINFP continues to explore creation of a market linkage for fortified products in Ethiopia and as a result identified the school feeding initiative led by the Ministry of Education as a potential niche market. The program gathered information about the school feeding program in Addis Ababa, tracing the source of wheat flour for bakeries that are currently supplying bread products to schools in the program, supported the millers by providing technical advice on registration of their fortified products, and connecting these millers to the bakeries. All these activities support the National Food Fortification Plan under which AINFP intends to support the assisted processor launch fortified bread products in schools.

Kenya linked two processors (Wimssy Dairy Fresh and Lactolife Dairy Limited) to TechnoServe's Smart Duka program that brings together retail shops operating in informal settlements of Nairobi, to enable the processors reach the BoP market through already established channels. As a result of the linkage, Wimssy Dairy Fresh has been able to distribute 4,571 liters of yoghurt valued at KES 640,000 (equivalent to USD 6400) to new BoP markets in Kangemi and Kawangware, informal settlements of Nairobi. Lactolife on the other hand distributed 68 litres of yoghurt valued at KES 11,520 (Equivalent to USD 115) to the new market in Kayole, Kitengela and Huruma respectively. AINFP also supported one of the processors (Dala) in development and formalization of contracts with 4 new distributors around Homa Bay County. This has resulted in increased sales from a previous value of USD 27,087 to USD 82,565.

3.3 GENDER INTEGRATION

The program, through the gender champions established in the previous period, focused on assessment of the gender integration opportunities across all the on-boarded clients with the aim of developing a business case for gender integration for each country. The key accomplishments so far include;

- Initial discussions have been happening with AINFP processors and overview assessment of the gaps and opportunities.
- Gender specific targets have been incorporated into all country plans for customized assistance and access to finance interventions.
- AINFP Ethiopia innovatively supported one foundational female-owned firm that has been processing oat meal from her home, hence does not yet meet the program threshold for program customized clients. The team supported her through the 'Ask An Expert' facility to receive advice on processing equipment. The processor has since received a price quotation and she is working towards establishing a processing facility so that she can start operating more professionally.
- Zambia supported Shais Foods, a female-owned enterprise, to sign contracts with 100 farmers, supply them with inputs and source their produce for her processing needs.
- Kenya provided recommendations to Shalem on the need to build lockers for her female staff out of a realization that they needed a safe place to keep their personal effects, which the processor adopted.

As a result of the deliberate and innovative strategies deployed, out of 51 processors who received CTA to date, 29 are female-owned/led, translating to 57% female-owned/led processors.

3.4 PROGRAM MONITORING, EVALUATION AND LEARNING

TechnoServe takes cognizance of the fact that in working with a large number of food processors, with intended impacts up the value chain to the farmers they source from, and down the value chain to their BoP consumers, AINFP is a broad-reaching and complex market systems project where relations of cause and effect are not fully understood. With such complexity, and this being an innovative model, TechnoServe is keen to understand and ascertain program outcomes (whether positive or negative, intended or unintended), and to comprehensively document them for wider learning. In view of this, TechnoServe engaged the services of an Outcome Harvesting (OH) expert to provide technical assistance to the program team in the design and implementation of the Outcome Harvest for AINFP.

The key objectives of the OH evaluation methodology are to: (i) Contribute to the program's learning agenda; (ii) Build internal staff capacity to implement the methodology through training and coaching with the ultimate goal of supporting uptake and institutional knowledge of the OH approach in future similar markets systems facilitation programs.

The OH approach to evaluation and learning will aid in capturing the outcomes/ impacts of the program and understand the drivers of behavior change. These outcomes will be monitored alongside the quantitatively pre-determined results already built into the program's Results Framework. We expect to document best practices in engaging smallholder farmers, serving the BoP demand for nutritious food products, and in gender inclusivity. The work of AINFP will also inform Feed the Future on how barriers to food industry and food systems development in low and middle income countries can be overcome in order to sustainably deliver safe and nutritious diets.

The OH technical assistance started with a 3-day training that took place on September 18 – 20, 2019 in Nairobi, Kenya. The training was attended by 20 participants, including the AINFP program management

teams from Tanzania, Kenya and Ethiopia. The data collection and analysis is planned for the next reporting period.

4. CHALLENGES AND ACTIONS TAKEN

The key program related challenges encountered during the period under review which hindered smooth project implementation are summarized in Table 3 below:

Table 3: Program Challenges and Action taken

| MAIN CHALLENGES ENCOUNTERED | ACTIONS TAKEN TO RESOLVE OR MITIGATE THE CHALLENGE |
|--|---|
| <p>Low pull for CTA from processors, particularly the foundational and some transitional processors, who may not have resources to implement project charter or QW recommendations, hence delaying implementation of recommendation on identified technical and business gaps among such processors.</p> | <p>Improved client selection procedures to ensure assessment of the leadership and commitment as well as technical assessment. This includes support from ISF to better understand the financial health of prospective clients</p> <p>Follow up visits and more active client relationship management to demonstrate value and encourage clients to implement proposed recommendations.</p> <p>Initiative for Smallholder Finance (ISF) support in providing financing options to processors seeking access to finance through capital, grants, and equity.</p> |
| <p>Some of the smaller processors lack technical skills in food technology. This poses a challenge when the program offers customized technical support which requires implementation by a technical expert, with prerequisite background in food technology.</p> | <p>AINFP has been supporting such processors through Intern placement and project staff physical presence during the remote support between PFS volunteer experts and AINFP processors, to support processors facing a technical challenge.</p> <p>Providing recommendations on recruitment of qualified technical personnel.</p> |
| <p>Investment preparedness among the food processors and long loan processing lead time from identified financing partners continues to be a major deterrent to accessing finance.</p> | <p>Exploring different options to address this challenge either through consultants, ISF team, or interns.</p> <p>Identifying financing partners with expertise on agri-loan assessment, or financiers to create partnerships with development partners who provide technical assistance on internal capacity building for agri-lenders. Supporting capital providers in better understanding the role of AINFP's intervention to the food processors by sharing reports/briefs on specific AINFP areas of intervention and demonstrating how this impacts the enterprise's growth.</p> |

5. LESSONS LEARNED

The key lessons documented during the period under review include:

- Leadership is a key consideration when selecting clients since an active and engaged leader is more likely and willing to dedicate time and resource allocation during customized technical support. Besides, the decision makers are better placed to articulate the firms' immediate needs/gaps. This ensures optimization of our own lean project team and increases the chance of successful adoption of recommendations.
- Deliberate and defined partnership with key stakeholders implementing complementary interventions can yield positive win-win results. For example, in Zambia with Fisenge Dairy we are working hand in hand with the United States Africa Development Foundation (USADF)/Rural Development Innovation (RDI) which is providing funding for a plant supervisor, accountant, equipment, and costs related to production. Zambia Dairy Transformation Program (ZDTP) provide field extension officers to the dairy farmers to ensure quality raw milk is produced. This has resulted in clear synergy and Fisenge taking up AINFP recommendations that require capital investment at an impressive speed.
- Placement of interns in processors' facilities has helped the assisted processors to see the value in recruiting skilled and professional personnel. Interns have especially been found very useful in supporting implementation of project recommendations in instances where a processor lacks professional staff, as evidenced by proper use of the Inventory Management tool and applied operation manuals at Super Seki and Mama Seki Group in Iringa and Njombe Regions, Tanzania.
- Complexity in the ownership and management structures of some processing firms (e.g. owned by several stakeholders) tends to slow down the decision-making process. This indicates the need to ensure the involvement of the key decision makers from the outset and at critical stages of the program. This will also enable the program to better and more timely gauge the processor's interest in the program for successful implementation.

6. ACTIVITIES PLANNED FOR THE NEXT REPORTING PERIOD

The key activities planned for the next reporting period are highlighted below. A comprehensive annual plan has been submitted to USAID.

| Program Components | Key Activities planned |
|---|--|
| Activity 1: Customized Technical Assistance to Food Processors | <p>Provide Customized Technical Assistance to 39 processors retained from the previous period and 14 new processors to be on boarded in 2020.</p> <p>Placement of 5 interns to support identified AINFP processors.</p> <p>Graduate at least 15 processors after conclusion of the customized assistance.</p> |
| Activity 2: Sector Wide Training | <p>Pilot and roll out of mobile learning application in Kenya for user testing</p> <p>Identification and selection of Participants for SWTs on Food Safety in Kenya, Tanzania, Zambia and Tanzania</p> <p>Capacitate 9 consultants in October 2019 to deliver Sector Wide Training in Kenya, Ethiopia and Zambia.</p> <p>Deliver SWT in Kenya in November 2019 targeting 240 participants, Zambia in November/December 2019 targeting 180 participants , Ethiopia in January 2019 targeting 240 participants, and Tanzania in May 2019 targeting 120 participants.</p> |
| Activity 3: Strengthened Value Chain Linkages between processors and farmers | <p>Identification of processors in need of support on SHF sourcing and provide customized assistance.</p> <p>Strengthen partnerships in support of SHF linkages that include: NAFKA II (Cereals Market System Development Program) in Tanzania; and ACDI/VOCA (Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance), a USAID funded Farmer-to-Farmer program in Ethiopia.</p> |
| Activity 4: Increased Business Development Support and Access to Finance | <p>Identify financing needs among AINFP processors based on the processors in need of financing and with gaps.</p> <p>Link AINFP processors with clear financing needs to identified financiers and support AINFP processors with financing gaps be investment ready either directly (through ISF resources) or indirectly through identified consultants.</p> <p>Establish at least 3 new partnerships and manage 5 existing relationships/partnerships with capital providers or financiers.</p> |
| Activity 5: Strengthened distribution channels, especially BoP markets | <p>Support 6 AINFP processors (participants in the BoP Challenge) drawn from Kenya, Tanzania and Ethiopia actualize their action plans targeting BoP markets</p> <p>Support at least 3 processors in Zambia develop messaging for local community radio to reach more BoP potential customers</p> |

8. CONCLUSION

Overall, despite the challenges faced during the period under review, the program has progressed well in the last one year of implementation particularly in the provision of customized technical assistance. However, some activities like Sector Wide Training experienced some delay in the initial roll out phase due to introduction of new approach in the training. Major milestones have been reached in the development of a new approach to Sector Wide Training and trainings scheduled to commence in the next reporting period in the 4 countries. As a result, the program will be on track towards achieving the set target. The program is also lagging behind on the BoP and SHF linkages and thus innovative approaches that include strengthened collaboration with stakeholders implementing complementary activities are currently being explored to enhance program outcomes.

9. ANNEXES

Annex I: Sampled Feedback and Case Studies from assisted processors

Feedback from one of the assisted processors (Melkam Endale)

“I thank Tsion, Daniel, Stephanie, Maria and Magdalene for your great volunteer contribution to the development of my business and thereby for the benefit Ethiopian low income people (BOP). This market strategy has been prepared with careful consultation of me and my employees to capture the current market context of Zagol Milk and plan a professionalized market strategy for Zagol Milk. Therefore, this market strategy document will be a road map for Zagol Milk for the years to come to solve market related issues

Zagol Milk has already started implementing some of your recommendations. On consumer segmentation, Zagol Milk has already started supplying products to consumer cooperatives in Addis Ababa city. Zagol Milk is working also on street vendors whereby youth groups (member of 4 people) are formed and Zagol Milk will provide branded push carts having a cool box and umbrella for such groups to sell Zagol Milk products on streets to reach low income groups at low product prices. Moreover, Zagol Milk is developing a website as per your recommendation. Additional product development to diversify Zagol Milk products is also ongoing with help from Technoserve. Off season price decrease has been implemented in June fasting period and found responsive.

Thus I am satisfied with your work and I thank you again for the support being provided to me”.

Melkam, owner of Melkam Endale Milk Processing (Zagol is the brand)

Case study I: COMACO Peanut Butter Line Optimization Project

Client Name: Community Market for Conservation (COMACO)

Project Name: Peanut butter line optimization

Peanut Butter Production: A project brief

COMACO, located in the eastern province of Zambia, was established in 2003 with a product line of nutritious foods, ranging from soy to rice to peanut butter. The food processor has major markets and buyers at retail chain stores, wholesalers and institutions.

In the recent past, COMACO has not been able to meet the customer demand for peanut butter due to its low production. To address this, the COMACO team conducted an analysis of the peanut butter production process indicating that the time take for cooling of peanut butter to a recommended temperature of 40 to 50 degree Celsius was a leading reason for low production. The COMACO team suggested that an additional votator was needed in the production line to reduce the cooling process time.

Thus, to introduce a cost effective solution to improve the output of the peanut butter line at COMACO from an average of 3.2 tons/8hour shift to 8 tons/8hour shift, a project was initiated by AINFP. Along with proposing a cost effective solution, AINFPs resolve was on maintaining the quality of peanut butter to ensure minimal oil separation.

The transformation: A before and after narrative

In contrast to COMACO's analysis, AINFP concluded from the quality and business assessments, that processing and packaging of peanut butter could be improved by investing on a good quality stirrer as an intervention, since the current ones were generating excessive heat, further raising the temperature of peanut butter.

This shift from a small to a big stirrer in the blending tank resulted in decrease in temperature from 110°C to 72°C during mixing. Additionally, the feeding rate from colloid into blending tank, which was approximately 10 litres/minute pre-intervention, increased to approximately 30 liters/minute, post-intervention. Pre-intervention, the lead-time to cool peanut butter to recommended temperature of 40 to 50°C for packing was over 2 hours and it reduced by an hour post-intervention. All this, amongst other factors, contributed to a doubling in peanut butter production, which rose from 400kg/hr to 1000kg/hr.

This way, our client was also able to avoid purchase of the votator equipment and focused on investing on quality stirrers. The cost effective solution of buying two double layered mixing tanks and stirrers, worth USD 8,900, and a jacketed kettle worth USD 2,100, also made economic sense. Because of our recommendation, COMACO was able to save 55,551 USD since the price of a votator would have been around USD 66,551.

The smooth quality of the peanut butter product after several adaptations and practice changes explains the accomplishments of the stirrer intervention. However, there can still be several improvements made on the product quality in terms of stability of peanut butter. To address this, it is proposed that COMACO starts using the jacketed kettle for emulsifier addition to the peanut butter, in addition to adopting a longer stirring time of 20 to 30 minutes. The new equipment has additionally contributed to an improvement in general safety of the production process.

| BEFORE | AFTER |
|---|--|
| <p data-bbox="203 254 537 281">Old blending tanks with stirrer</p>  | <p data-bbox="824 254 1170 281">New blending tanks with stirrer</p>  |
| <p data-bbox="203 758 542 785">Old stirrer in old blending tank</p>  | <p data-bbox="824 758 1230 785">New stirrer in the new blending tank</p>  |
| <p data-bbox="203 1400 1230 1428">Title: Project Intervention on investment in quality stirrers for Peanut Butter line optimization</p> <p data-bbox="203 1430 623 1457">Source: AINFP Project Team, Zambia</p> | |

Case Study 2: Missoil Good Manufacturing Practices

Client Name: Missoil Limited

Project Name: Good Manufacturing Practices Implementation

Food Processor Brief: Cooking Oil by Missoil Limited

Missoil Limited, an agro processing company, established in 2015, has a vision to empower rural communities by providing a marketplace for their produce. At Missoil, raw materials are locally sourced in the Zambian Eastern Province from 1500 smallholder farmers, mostly women. The target market of the cooking oil made from sunflower seeds is Mambwe District with an estimated population of 100,000 people. The client currently produces 500 liters of refined cooking oil per day, which is packed in a range of sizes from 20-liter buckets to 750 ml bottles.

Good Manufacturing Practices key to growth: AINFP Recommendations

The AINFP team has been mentoring the General Manager and Production Supervisor in development of standard operating procedures(SOP) and monitoring record forms for all factory practices. The approach taken was to provide the company with basic templates to guide them. Once developed, the AINFP team reviews the procedures alongside the client so that procedural direction is provided. This approach assists the client to learn how to develop the standard operating procedures and monitoring record forms.

Whilst implementation of food safety systems such as HACCP and FSSC, are key, GMP lays the foundation for a firm. Thus, implementation and use of record forms are currently ongoing along with implementation of procedures and recommendations which form the basis of Good Manufacturing Practices.

Along with this, AINFP also provides mentorship support to employees as their conduct is observed during working shifts to give them insights on food safety gaps. Platforms such as food safety chats on selected topics help to educate all employees on the need to adhere to the factory code of conduct, maintaining cleanliness of the premises, implement SOPs and ensure accurate record keeping.

The five-fold transformation:

The section below shows a pictorial account of the changes the food processor has implemented based on our recommendations.



1. **Hand wash area at the factory entrance and within the factory enhanced:** Through the technical support given to Missoil Limited during the SAFE program and AINFP, they have been able to implement

basic GMPs such as placing a hand wash station at their factory entrance and enhancing signage within their factory.

2. **Visitor coats and helmets policies in place:** When Missoil was engaged on the SAFE program, the company did not have a visitor's policy and allowed visitors to enter their facility without adequate protective clothing. The client was advised to procure visitors protective clothing such as coat, helmets and hairnets and this was achieved during the AINFP program, since it required some financing.



3. **Pest proofing by sealing doors with rubber:** In order to prevent pest entry AINFP advised Missoil to seal off all openings. This is key to guarantee food safety as pests can be a source of physical and microbiological hazards.
4. **Safety of employees ensured by investing in a first aid box:** To ensure safety of employees during times of injury, Missoil was advised to restock their first aid box. Upon engagement, the box did not have any first aid material.



5. **Retention samples as a quality assurance technique:** In order to monitor quality of product, Missoil was encouraged to retain a sample from every batch. In the event that the company receives a food safety and quality related customer complaint, they can refer to the retained sample for comparative tests.

Overall, MissOil expressed her appreciation of the technical assistance by TechnoServe and reported that Missoil Limited has benefited from TechnoServe support as their operations are more organized and confident that they now meet national regulatory standards as required by Zambia Bureau of Standards. She also added that, there has been a reduction in the number of customer complaints due to controlled processing, monitoring and record keeping activities.



Case Study 3: Mas Q Peanut Butter Product Improvement

Case Study of a Foundational Client: Mas Q

CTA Provided: Peanut Butter Product Improvement

Background and Context

Mas-Q Associates Ltd is a consulting and construction company established in 2003. The company, as it was doing its daily construction activities, met many people who were in need of nutritious food products. In an attempt to address this need, the company ventured into food processing from 2014 through the Hakika Healthy Foods trademark and started with Soy milk processing. Through market survey, Mas Q Associates realized that there was demand for smooth peanut butter in the Tanzania market and in 2017 the company established another business line at Mbezi kwa Yusufu in Dar es Salaam for production of peanut butter under the brand name, Hakika Peanut Butter. On average the company produced 2.1MT/day of peanut butter.

Following the Business and Quality Assessment undertaken by TechnoServe in July 2018, it emerged that the processor had challenges with quality raw material sourcing. Besides, the processor lacked Standard Operating Procedures (SOP) from raw material receipt, processing and finished product. This resulted in receipt of poor quality peanuts, and with lack of defined system of sorting and cleaning the products, the poor quality raw material passed through the de-stoner and roaster. The roasted peanut was then de-hulled and milled into paste and only salt added to improve the taste. This resulted in customers' complaints that the product had a throat itching effect caused by inadequate sorting of rancid peanuts.

In addition, the peanut butter had oil phase separation when stored on the shelves in the market for at least two months, i.e. oil would float on top of the solids in the jar. This resulted in numerous consumer complaints; there were also complaints from the shop owners regarding oil seeping onto the shelves and contaminating other adjacent products. This resulted in low sales.

AINFP Interventions

(i) The program supported the processor to develop SOPs on receipt of raw materials, cleaning, grading and sorting to remove unwanted/foreign materials with the aim of improving the milling process.

(ii) The program provided technical assistance on peanut butter quality improvement by providing guidance on sourcing of appropriate additives, and determination of the optimum percentage that would stop the oil separation; this was achieved through the emulsifier trial runs at the rates of 1%, 2% and 3%.

Transformation

Following the 3 trial runs undertaken, the peanut butter was found to perform best at 1.5% and 2% rates of additives/stabilizer. At these rates there was no oil separation even after storage for 5 months. Improved quality of the peanut butter and improved shelf life is evidenced below.



Peanut butter before improvement



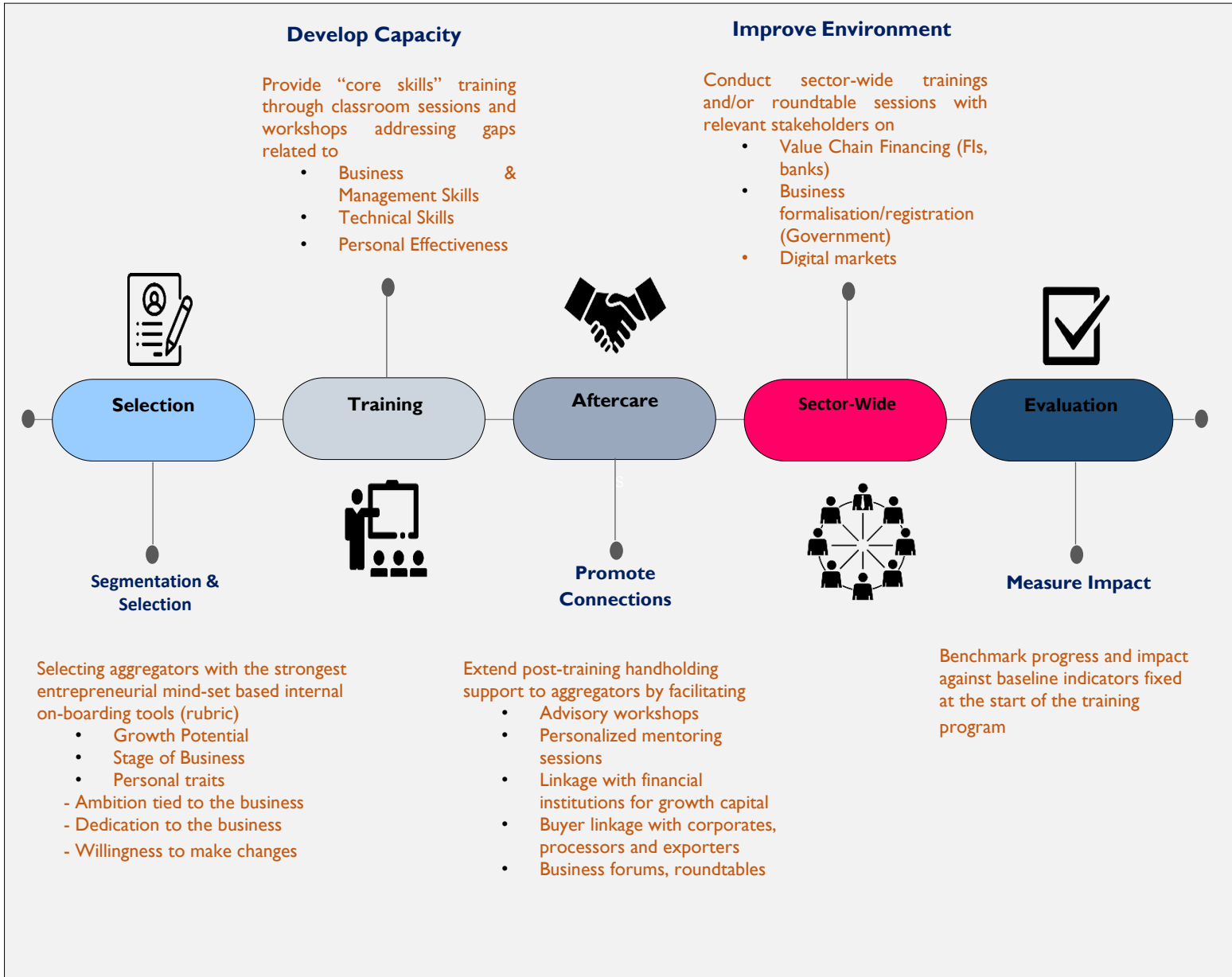
Peanut butter after quality improvement

As a result of technical assistance on product quality improvement by the program, Mas Q has been able to increase its volume of production from an average 2.1MT/day to 3.2 MT/day due to increased demand for its products and expansion of the BoP market in Dar es Salaam to Morogoro, Iringa and Mbeya. The increased volumes have also resulted in increased value of sales in the last five months from USD 12,743.66 to USD 78,260.87, translating into 103% increase in sales per month.

Conclusion

The processor expressed his appreciation of the technical assistance provided by the program and reported that there were almost no consumer complaints regarding throat itching and oil phase separation in the last 5 months.

Annex II: Aggregator Training Model



Annex III: AINFP Processors supported through Customized Technical Assistance and projects status

| Ethiopia Assisted AINFP Processors | | | | | | | |
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| No. | Client Name | Country | Client Segmentation (Foundational, Transitional, Accelerator) | Gender | Main Nutritious Products | Customized Assistance Provided (Name of project and mark whether Quick Win(QW), Project Charters(PC), Ask An Expert(AAE)) | Project Implementation Status |
| 1 | Lume -Adama Farmer's Cooperative Union | Ethiopia | Transitional | Male-owned and led | Wheat flour, bread from wheat flour | Fortified bread product development -Project Charter(PC). | Product trial runs on progress. The production employees have been trained on wheat fortification techniques and are capable of laboratory testing the fortified wheat flour. Lume Adama started process of establishing laboratory facilities and processes for food fortification as a step towards product registration. |
| | | | | | | Pricing and price feasibility analysis for new product- PC | Pricing feasibility analysis and fortified bread product development progressing well. |
| 2 | Melkam Endale Dairy Processing | Ethiopia | Transitional | Female led | (Dairy products Pasteurized milk, Yogurt, butter, local cheese) | Flavored milk product Development. | Whey drink and flavored milk product development project progressing well Procurement of ingredients for trial runs in progress. Awaiting confirmation from equipment suppliers before proceeding with trial. |
| | | | | | | New product development from whey – PC. | |
| | | | | | | Marketing strategy development - PC | Developing the final action plan to address BoP market based on BoP Inc. recommendations. |
| | | | | | | BoP Market linkages – Quick Win(QW) | The processor has established new BoP market as a result of AINFP support-currently supplying products to Rahey |

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| | | | | | | | primary cooperative as a result of market linkage support. and so far supplied 420 litres of pasteurized milk and yogurt and 7kg of cheese and butter. |
| 3 | Rut and Hirut Milk Cows Breeding Dairy Production & Processing PLC | Ethiopia | Transitional | Female-owned | Dairy products (Pasteurized milk, Yogurt, butter, cheese) | Marketing strategy for Bop Market Development-Project Charter | Project completed and debriefed Rut and Hirut has since increased her production capacity of milk products (pasteurized milk and yogurt) from 500litre/day to 2200litter/day. |
| | | | | | | Job description preparation for the recruitment of a technical person-QW | HR restructuring support provided by identifying key functional areas that need qualified experts. Processor supported in preparation of technical personnel job description. |
| | | | | | | Product packaging design and labeling (Product branding)- PC | Branding project ongoing. |
| | | | | | | Design a yogurt fermentation room -PC | Design recommendation provided by PFS volunteers. |
| | | | | | | Off-Grid Milk Cooling - PC | Off-grid milk cooling design project progressing well. The project aims to design milk cooling technology that can operate off-grid and can be used by farmers in Ethiopia. |
| 4 | Nutri Dense food manufacturing plc | Ethiopia | Foundational | Female-owned | Oat based multi-grain cereal products | Sourcing Oat milling and processing machinery- Ask An Expert(AAE) | Recommendation on Oat milling equipment provided. |
| 5 | Boni Food Complex S.C | Ethiopia | Transitional | Female led and 50% female | owned Wheat flour | Micro-dosing unit installation – AAE | Micro dosing unit installed. Training on fortification being provided to staff. |
| | | | | | | Lab establishment for fortified flour testing-PC | Processor connected with equipment suppliers to procure lab equipment. |

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| 6 | Theday Agro Industry PLC | Ethiopia | Transitional | 100% female-owned and male led | Fruit Jam products | Newly on boarded processor Projects identification and chartering ongoing Good Manufacturing Practices-QW | The processor is in the process of implementing the food safety practices and would want to undertake laboratory test for the raw materials and finished products. They also intend to package the product in 100 to 300 grams. This will result to increase their production and have a plan to sell to Ethiopian Airline. The processor has been audited and started implementation of food safety practices and improvement on documentation and recording. |
| 7 | DH Geda wheat flour factory | Ethiopia | Transitional | Female led | Wheat flour | Wheat germ product development-PC | The project is on progress and trails has been done. DH Geda Flour Factory started to produce and sell wheat germ as a new product to bakeries in Ethiopia. DH Geda company laboratory started to test the bread volume with the procedures and methods delivered to them. GMP training for food handlers and operators (Quick win). Currently the quality assessment has been done to assure the need of the training, and plan to make training in August 2019. |
| 8 | Barri Food Complex | Ethiopia | Foundational | Male-owned and led | Maize flour and wheat flour | Laboratory establishment to test maize grain and maize flour product - PC | Barri Food Complex established laboratory for testing maize grain and maize flour and invested about 1700 USD to establish the new laboratory. Translation of manuals from Chinese to English is progressing well, 2/3 manuals have been translated. The processor has sent maize flour sample to USA for testing. |

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| 9 | Addis Dallas Industries plc | Ethiopia | Accelerator | Female-owned and led | Wheat flour and Wheat flour products (Biscuit) | New fortified biscuit product development –PC Packaging design of fortified biscuit product development-PC Laboratory testing of the fortified biscuit product -PC | Fortified biscuit product development project has shown good progress. Received the premix sample from DSM and tested it at Addis Dallas facilities with the recommended recipe from the volunteers. The production staffs now knowledgeable of fortifying the wheat flour. The company know the registration process for the fortified wheat flour. The company laboratory staffs are now capable of testing the fortified wheat flour. |
| 10 | Ethio-green production and industry PLC | Ethiopia | Transitional | 100% female Owned - led | Injera (flat bread) from Teff cereal | Implementation of food safety system BoP market linkage - QW | Ethio green started adopting food safety recommendations such as hygiene practices. Developing the final action plan to address BOP market based on BOP Inc. recommendations. |
| 11 | Kaliti Food complex | Ethiopia | Transitional | Male led | Wheat flour, biscuit and short cut pasta products | Quality Improvement of biscuit product-PC | The processor is interested in processing fortified wheat flour and nutritious biscuit product. |
| 12 | FAFFA food complex | Ethiopia | Accelerator | Male led | Pregnant and lactating mothers' product (porridge flour), infant food, and cornflakes | Branding design for Mamma mix (mothers' product) –AAE Validating of the new recipe for the mothers' product –PC | The processor received advise from volunteers on the branding design for the Mamma mix product. The processor made some change on the recipe by substituting premix with the cereals brand available locally. Potential support areas include: testing and analysis of new product composition, product launch and market linkage to BoP market. |

| Zambia assisted AINFP Processors | | | | | | | |
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| No | Client Name | Country | Client Segmentation (Foundational, Transitional, Accelerator) | Gender | Main Nutritious Products | Customized Assistance Provided (Name of project and mark whether Quick Wins, Project Charters, AAE) | Project Implementation Status |
| I | COMACO | Zambia | Accelerator | Male owned and led | Peanut butter, Corn soy blend (CSB)/Texturized Soy Protein (TSP) | <p>Peanut butter production line maximization/Equipment installation -PC</p> <p>Sustaining the HACCP system through surveillance inspections – QW</p> <p>Food Safety and Quality Management System –QW</p> <p>Water treatment options –QW</p> <p>Market linkages Support -QW</p> | <p>The processor Increased production output from 400kg/hr to up to 1000kg/hr (Output Doubled to serve more customers). Client is struggling to correctly setup the remaining part of the equipment (Jacketed kettle) and still working on the product quality consistency.</p> <p>Surveillance audit conducted and COMACO is working on closing the quality and safety gaps identified. COMACO plans to complete this exercise by December 2019.</p> <p>Developed a FSQ template and COMACO reports that the template is in use. TechnoServe would like to see COMACO use the tool to monitor Yummy soy (CSB) production lines.</p> <p>Water treatment options provided.</p> <p>COMACO secured an order for 97MT to supply SCB to John Snow International food aid program through linkages facilitated by TechnoServe through a series of meetings and show casing COMACO's products.</p> |

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| 2 | Seba Foods | Zambia | Accelerator | Male owned and led | Corn soy blend (CSB)/Texturized Soy Protein (TSP) | GMP implementation and certification at old plant-QW FSSC2200 certification at the new plant-QW In-house Food Safety Training-QW | Development of SOPs on the use of wooden pallets, disposal of plastics as a Zambia Environmental Management Agency requirement Quotations shared with Seba foods to advice on the preferred certifying body. Training has been done for 23 permanent employees. There has been notable improvement in behavior of the trained employees as observed by improvement in personnel hygiene i.e. clean PPE and increased care when handling finished products. All project charters currently on hold, client is relocating the plant till November 2019 |
| 3 | Essential Commodities | Zambia | Accelerator | Male owned and led | Corn Soy Blend (CSB)/Texturized Soy Protein (TSP) | Vegan Product development- PC Cold Chain distribution for Vegan products –PC Sustaining the GMP system/surveillance inspections-QW Instant Nshima product development - PC | Vegan product developed, yet to be launched in the market. Project closed, recommendations on transportation and equipment required for the cold chain distribution provided. Fresh audit was conducted, and 34 gaps identified Processor conducted trial production and where successful with the Instant Nshima meal. They plan to commercialize the product in 2020. |
| 4 | Missoil | Zambia | Transitional | Female-led | Sunflower Oil and Cake | Alternative uses of sunflower cake -AAE | Recipe for crackers which will make use of the sunflower cake meal being developed. |

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| | | | | | | <p>Improving efficiency of deodorizer-QW</p> <p>Nutritional analysis of oil and rebranding – QW</p> <p>GMP certification-QW</p> | <p>Information on infra-red device that can be used to monitor temperature during deodorization shared</p> <p>Processor yet to set a date when the product will be sent to the lab</p> <p>Final Version SOPs 2,3,8,9,11,13 and 18 being reviewed by Client</p> |
| 5 | 260Brands | Zambia | Transitional | Male-owned and led | maize flour | <p>Soy milk formulation-PC</p> <p>Soy milk equipment sourcing & recommendation – PC</p> | <p>Soy milk formulation completed and objective met.</p> <p>Equipment sourcing completed, recommendations of where to source equipment shared with the client. The above projects are awaiting debrief and closure as the client will take more than six months to procure the equipment. Client will be graduated by January 2020.</p> |
| 6 | Dairy king | Zambia | Transitional | Male - owned and led | Dairy products | <p>Laboratory Equipment & lab tests recommendation. Personnel training -PC</p> <p>Mozzarella Cheese product improvement, Gouda & Cheddar new product development -PC</p> <p>Nutritional analysis of finished product -QW</p> <p>In-house food safety training for staff – QW</p> | <p>Lab equipment and tests recommendations provided to the processor. This also resulted in improvement of quality of cheese</p> <p>Client is running more production trials following technical advice from volunteers. This has led to increase in cheese production from 500Lt to 700Lt.</p> <p>TechnoServe identified and recommended a laboratory where the nutritional analysis can be done. Client working on product quality before sending sample to Food & Drugs Control Lab for analysis.</p> <p>Completed basic food safety training for 10 members of staff (1 female</p> |

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| | | | | | | <p>GMP implementation and certification -QW</p> | <p>participant). Additionally, TNS planning training on cleaning and sanitation as well as pest control as part of the food safety training.</p> <p>Quality Audit Conducted; Gaps identified (9), Gaps closed (6) The remaining 3 require some funding. The client will work on that once they secure funds</p> <p>An intern was placed at Dairy King for six months. Intern assisted develop 20 SOPs and 6) One Point Lesson (OPL) showing key steps on how to conduct the test), This contributed to reduction in testing time (stretching for Mozzarella cheese) from 7hrs to 5hrs. Client has started seeing value in having an intern.</p> |
| 7 | Fisenge Dairy Cooperative | Zambia | Foundational | Female-owned | Pasteurized milk | <p>Basic Food safety implementation - QW</p> <p>Assist with identifying external lab services that Fisenge use for advanced testing of the milk -QW</p> <p>Label design and branding -PC</p> | <p>Fisenge is closing some of the safety gaps identified namely filling of cracks on the floor, repairing the ceiling, installation of a hand wash station, screening of windows etc by renovating the plant.</p> <p>TechnoServe identified and recommended external laboratory facilitates that the client can use for advanced milk testing such as bacteria or antibiotics content in the milk. Fisenge to conduct basic tests in-house, TNS facilitated the calibration of lacto scan and is ready for use</p> <p>Label ready for use awaiting Fisenge to put in place basic food safety systems before launching the brand</p> |

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| | | | | | | SHF linkages support (drafting farmer contracts) -QW | Progressing slowly, pending Fisenge and Farmers agreement on cost sharing in in case of milk rejection by Parmalat |
| 8 | Shais Foods | Zambia | Foundational | Female-owned | Cereal blends | New product development (cereal blend orange maize, millet, sorghum, and cowpeas) -PC GMP implementation-QW | Client has been non- responsive due to other competing priorities, planning to drop the client in December 2019. |
| 9 | Yumi milling | Zambia | Foundational | Male - owned and led | Maize flour | Equipment sourcing for CSB/TSP – QW Basic GMP implementation i.e. signage, install drainages, document cleaning activities, equipment operating instructions -QW Plant lay out for TSP production - PC | Equipment sourcing recommendation provided to the client GMP implementation put on-hold since the plant has not been in operation due to limited supply of raw materials caused by drought Plant layout design was shared with the client, construction of the pant based on the plan is in progress and the recommendations will be fully adopted once the equipment is installed by December 2019. |
| 10. | Java Foods Ltd | Zambia | Transitional | Female-owned and led | Corn Blend Soy | Formulation of Noodles Development of HACCP plan and implantation Fortified Noodles Production Support on the new line- PC | Project charter has kicked off main objective is to formulate noodles with local ingredients that taste same or better than the previous formulation Team working on sending samples of ingredients to the volunteers. The client is in the process of selecting a HACCP team and planning initial training. Project Charter approved and on hold pending completion of the other two project charters |
| 11. | Finta Dairy Ltd | Zambia | Accelerator | Male-owned and led | HTU milk and whey drink | GMP implementation | Client is renovating the facility according to food safety |

| | | | | | | | recommendations given by TechnoServe such as; placing screens on windows and doors, repairing damaged floor, repairing toilets/changing rooms, new drainage system etc. Developed record form in use. |
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| Kenya Assisted AINFP Processors | | | | | | | |
| No | Client Name | Country | Client Segmentatio n(Foundatio nal, Transitional, Accelerator) | Gender | Main Nutritious Products | Customized Assistance Provided (Name of project and mark whether Quick Wins, Project Charters, AAE) | Project status |
| 1 | Prosoya Ltd | Kenya | Accelerator | Female led | Blended flour. A mixture of maize, sorghum and soya beans flour | Product branding and design- Project Charter Recommendation on Product improvement to remove foreign particles in the final product named Jazia-QW | Various product branding design recommendations presented to the processor for selection. Successfully completed. The processor has installed sieves and mesh at strategic milling points which is aimed at reducing foreign matter in the blended flour. The processor has also installed magnets on the processing line with the aim of reducing ferrous metals. |

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| | | | | | | GMP implementation (Basic food Safety and Personnel Hygiene)-QW | The processor received basic in-house training on GMP, out of which 11(5 female) participants attended, and issued with a cleaning program template. As a result of GMP recommendation the processor is: Utilizing the cleaning checklist in all the production areas and use of hair nets and gloves in food handling; put in place proper signage and labelling in the factory; Utilizing truck cleaning inspection checklist to avoid cross contamination of final product; replaced the bulbs within the production floor with the non- shatter |
| 2 | Dala Ltd | Kenya | Foundational | Female-owned | Baked Products such as bread and buns using Orange-fleshed Sweet potato flour blended with wheat flour | GMP Implementation (GMP implementation (Basic food Safety and Personnel Hygiene)- QW | The processor has been trained on basic GMP and started implementing some of the practices on personnel hygiene that include: use of gloves and personal protective equipment; use of cleaning checklist within the plant. |
| 3 | Organi Ltd | Kenya | Foundational | Female-owned | Root and tubers, OFSP | Orange Fleshed Sweet Potato (OFSP) puree shelf life improvement- Project Charter | Recommendations such as process changes in the drying stage and the use of preservatives provided. Project put on hold due to lack of pull |
| | | | | | | Basic GMP implementation-QW | Basic GMP practices shared with the processor for implementation. |
| 4 | Wimmsy Dairies Ltd | Kenya | Accelerator | Female-owned | Dairy Products. Fresh milk and yogurt | Improvement of the Inventory Management System ERP-Project Charter | The processor availed the inventory management system to the volunteers to enable troubleshooting and navigation |

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| | | | | | | Development of the organizational strategic plan-Project Charter | The Organizational strategic plan developed awaiting implementation by the processor |
| | | | | | | Advice on biogas development and connection to the boiler for efficient energy use-AAE | The desire to use biogas to power the boiler was found to be unsustainable and economically unviable hence project did not continue |
| 5. | Kitui Enterprises Ltd | Kenya | Foundational | Female-owned | Flour and Mango | Product improvement and reformulation –Project Charter | Project completed. Awaiting certification from Kenya Bureau of Standard (KEBs) and Nutritional analysis report from kenya Industrial Research institute before the product can be packaged and launched in the market . |
| | | | | | | Packaging design and branding-Project Charter | Packaging design and brand completed, awaiting approval of the improved product from KEBs. |
| 6 | Chuchunei Ltd | Kenya | Transitional | Male owned and led | Maize Flour | Fortification of maize flour and calibration of the dossier-QW | The processor has been trained on how to run the dossier and calibrate the dossier successfully. The samples have been tested on micronutrient levels to validate the effectiveness of the dossier and found complying. |
| | | | | | | Basic GMP Practices - QW | Shared with the processor the cleaning program and checklist for implementation. |
| 7 | Lactolife | Kenya | Foundational | Female led | Dairy Products (fresh milk and yoghurt) | Basic GMP Practices - QW | The processor has been trained on basic GMP that saw 5(1 female) staff participate, and given various templates to use as the cleaning program and checklist. The processor has been advice on proper signage, labeling and |

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| | | | | | | BoP market linkages support -QW | segregation of raw materials and final product to avoid cross-contamination. |
| | | | | | | | Processor linked to TechnoServe SMART Duka Project. The processor has since established 2 new BoP market linkages and started distributing Yoghurt to these markets. |
| 8 | NAL Ltd | Kenya | Foundational | Female led | Dairy and fruits and juices | HACCP Plant Process flow-QW | A HACCP plant process flow developed and shared with the processor for implementation. |
| 9 | Josiche Ltd | Kenya | Foundational | Male owned and led | Fortified Maize Flour | Milling equipment Sourcing recommendation - QW | Recommendation on equipment sourcing provided and milling equipment procured awaiting installation in the planned new plant. |
| | | | | | | Process flow development-AAE | Completed recommendation on the process steps and shared with the processor for implementation. |
| 10 | Simply Foods | Kenya | Foundational | Male led and owned | Porridge Flour (finger millet) | Fortification of the instant finger millet porridge-Project Charter | The sample of the finger millet flour sent to South Africa for analysis to determine the nutritional profile of the flour to ascertain the best mix of the micronutrient to add as per the provision of the codex |
| | | | | | | Product improvement in terms of mix ability to reduce the lumpiness formation during preparation-Project Charter | Recommendation given to the processor to procure mesh with smaller holes to fix at the extrude. The project aimed at reducing the lump formation. |
| | | | | | | Recommendation on the plant floor cracking and peeling off of epoxy floor-AAE | Recommendation shared with the processor for implementation |

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| | | | | | | Twin screw extrusion technology-AAE | Training material have been shared and Management trained remotely by the PFS volunteers |
| 11 | Shalem Investment Ltd | Kenya | Foundational | Female-owned | Porridge Flour (Sorghum) | Basic GMP implementation -QW Market Activation and Route Management-QW | Completed. The client advised on use of cleaning checklist and replacement of lighting with the non-shatter glass. Market Activation and Route Management recommendation shared with the processor for implementation |
| 12 | SUKA Dairies | Kenya | Transitional | Male- owned and led | Dairy Product (Fresh milk) | Basic GMP Practices - QW | Quality Assessment conducted, The Processor has been taken through the processor trained on basic GMP that saw 5 employees trained and given various templates to use such as the cleaning program and checklist, medical declaration form for visitors and visitors log in template for access control in the plant |
| 13 | Aspendos | Kenya | Accelerator | Male-owed/ female led | Dairy (Pasteurised milk, fermented milk products). | Developing of a business strategy. QW Implementation of a s food Safety management system in compliance to the FSSC 22000 Standard-QW | Processor has developed a comprehensive 5year strategy, and is pending review by the senior management team before implementation As part of the FSSC system Aspendos appointed a Food Safety team who were trained by AINFP in-house on GMPs (11 staff (5women; 6 men)). This knowledge was further passed down to other staff through a companywide training. |
| 14 | Kebuk | Kenya | Foundational | Male-owned | Baked products | Basic GMP Practices - QW | Quality Assessment undertaken and recommendations on GMP shared with processor for implementation. |

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| 15 | Turkana(WFP Supported) Millers | Kenya | Foundational | Majority female-owned/led | Fortified Maize Flour Milling | Business registration and planning - QW GMP, Milling and Fortification technologies-QW | Conducted customized training to 110 (68F, 42M) individuals on Business Modelling and Financial management. Business have been legally registered as LLC's. Conducted customized training to 100 (65F, 35M) people on GMP and milling and fortification. This was in preparation for the installation of milling equipment and commercial production. |
| 16. | Equatorial Nuts | Kenya | Accelerator | Male-owned and led | Corn Soy blend and Sorghum Soy blended Flours | Automation of premix dosing and other ingredients-PC | Project kicked off. |
| 17. | Valid Nutrition | Kenya/Malawi | Accelerator | Male-owned and led | Ready to use Therapeutic Foods RUTF and RUSF | New Laboratory Design - Project Charter | Successfully completed. The client received expert advice on the design of the laboratory and the lab design has been developed, |

Tanzania Assisted AINFP Processors

| No | Processor Name | Country | Processor Segmentation ⁵ | Gender | Commodity type (Main Nutritious Product) | Customized Technical Assistance Provided (Project Charters/Quick Wins implementation) | Results on Project Charters/Quick Wins implementation |
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| 1 | Sozi Integrity | Tanzania | Transitional | 50:50 ownership and female led | Maize flour | Product traceability including coding - Quick Win (QW) Design of maize bran drying machine – Project Charter | Trained on the use of appropriate date and products batch coding format Phase I of maize bran drier prototype design successfully completed on 13 th May 2019. AINFP is supporting identification of machine fabricators who will bid for the Project Phase II of scaling up the technology to produce a |

⁵ AINFP processor segmentation: **Foundational**: Annual revenue <100K; Staff <5; Volume produced <2MT/day; **Transitional**: Annual revenue 100-500K; Staff 5-15; Volume produced 2-10MT/day; **Accelerator**: Annual revenue >500K; Staff >15; Volume produced >10MT/day

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| | | | | | | <p>commercially viable machine which will be cost effective and affordable to Tanzanian maize millers.</p> <p>Five fabricators have been identified with AINFP assistance as potential bidders which will be included for the bid competition (CARMATEC, TEMDO, INTERMECH, M&R Engineers and STAR machineries) who are willing to commercialize the technology, so RFP is in drafting process.</p> <p>The client advised on proper warehouse management. Now there is proper separation of products - no mixing of raw materials/finished products and by products such as maize bran, trash and spare parts. Client has started to apply GMP practices.</p> <p>The processor employees sensitized on the need for good hygienic practices by improving plant sanitation. As a result, the unwanted materials such as used spare parts, rotten maize bran, dust and live chickens were removed from around processing facility and discarded and others were relocated.</p> <p>The new recruited Plant Manager was trained on GMP and OHS.</p> <p>AINFP linked the processor with another miller at Iringa and Dodoma in the month of July 2019 for peer to peer learning. This enabled the processor make</p> |
| | | | | | Warehouse management – Quick Win | |
| | | | | | Plant hygiene and sanitation – Quick Win | |
| | | | | | Coaching current recruited Plant Manager on Good Manufacturing Practices (GMP) and Occupational Health and Safety (OHS) – Quick Win | |
| | | | | | Linkage of client to maize mills (machine) fabricators - Quick Win | |

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| | | | | | | <p>informed decision on the appropriate milling equipment.</p> <p>The client was linked to local machine fabricators for machine design and fabrication and signed a contract of USD 65,217.39 for fabrication of a new maize mill of 30MTs capacity per day. TechnoServe team will continue providing technical support to ensure proper milling machine is fabricated. The machine is at final stage (installation and alignment stage).</p> <p>Advised on regular machine servicing and maintenance schedule. Client has agreed to recruit four women who will be engaged in production, cleaning and quality control.</p> | |
| 2 | Super Seki Investment | Tanzania | Transitional | Female-owned | Maize flour | <p>Machine repair and maintenance – QW</p> <p>Advised the client on importance of gender integration in employment plan for efficient and effectiveness in daily operations - QW</p> <p>Placement of an intern to support on the implementation of QWs and project charters</p> <p>GMP best practices including production flow, PPE and hygiene best practices- QW</p> <p>Development of an Inventory management system – Project Charter</p> <p>Food safety (HACCP Implementation) - Project Charter</p> | <p>Inventory management tool applied to track daily transactions.</p> <p>Hands on training and guidance on the appropriate use of Personal Protective Equipment; the client invested in purchasing as advised.</p> <p>Developed stock management tool for raw materials, finished goods, sales, maize bran and spare parts. Client has started using the tool for managing their inventory which will help to control losses and unnecessary spillage that may occur during production process.</p> <p>Intern has been placed to support implementation of the HACCP plan and quality documentation.</p> |

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| | | | | | | <p>Development of Milling operations manuals – Project Charter</p> <p>Market strengthening linkage support- QW</p> | <p>AINFP placed an intern to support the implementation of quick wins and project charters’ recommendation, resulting in current smooth operation in the plant.</p> <p>In collaboration with NAFKA II program, linked the client to 4 producer organizations at Wangingombe namely; Imalinyi AMCOS, Kidugala, Ulumaii and signed non-binding marketing contract and supplied 647MT.</p> <p>Linked with 3 schools and one college to supply 50MT of fortified maize flour every three months</p> |
| 3 | Shambani Milk Ltd | Tanzania | Transitional | Female led | Dairy product | <p>Formalization of GMP documents- QW</p> <p>Formalization of production- QW</p> <p>Milk shelf life extension – Project Charter</p> | <p>Development of SOPs. The client was following required procedures, but there were no consistency/sustainability and no proper documentation. AINFP facilitated documentation and developing Standard Operating Procedures</p> <p>Developed sketch for equipment layout</p> <p>The client is working on milk shelf life extension project to enable them reach a wider market (supply milk over long distance) without spoilage.</p> <ul style="list-style-type: none"> - AINFP supported the processor in the layout design of a microbiological laboratory for routine tests in the factory. - Identified supplier for Mastitis rapid test kits - Client sent Quality Manager to Sokoine University of Agriculture(SUA) for orientation on lab microbiological tests. |

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| | | | | | | <p>Development of a Marketing strategy- Project Charter</p> <p>Linkage of the client to BOP Markets. – Quick Win</p> <p>HR management- QW</p> <p>Identification of suitable online meeting platform- QW</p> | <p>Client collected information of competitors from the market place which will help in development of the marketing strategy</p> <p>Client received BoP challenge training organized by AINFP/BoP Inc. As a result the client developed an action plan for school feeding program which will be supported by the BoP Inc., PFS and facilitated by AINFP team on the ground TechnoServe supported review of Job descriptions. Clients employed 2 new staff (Accountant and Quality Manager).</p> <p>Shambani Milk had a problem communicating information with her clients i.e. customers and major milk suppliers. They therefore requested AINFP to assist them identify the best means of audio or visual communication. AINFP assisted the client to identify suitable online meeting platforms and select Zoom online as the best option for their online meetings.</p> |
| 4 | Mas-Q Associates Ltd | Tanzania | Foundational | Male owned and led | Peanut butter | <p>Regulatory registration- QW</p> <p>Improve on documentation- QW</p> | <p>Provided support to implement regulatory requirements on product registration –TBS mark.</p> <p>SOPs for raw materials receipt, inventory tool and operation manuals have been written and the client is putting into practicing.</p> |
| 5 | Mama Seki Group Ltd | Tanzania | Transitional | Female-owned | Maize flour | <p>Plant and machine layout design – PC</p> <p>HR issues - QW</p> | <p>Supporting the supervisors to understand design and plant layout project.</p> <p>Supporting the client with follow up on machine fabrication by M&R Engineers.</p> |

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| | | | | | | | Trained the processor on importance of employing skilled business and production personnel, and roles of the personnel. As a result the client employed 1 Sales and 1 Production Supervisor. |
| 6 | Kebhandza Marketing Co. Ltd | Tanzania | Transitional | 50:50 ownership and male led | Maize flour | GPM documentation -QW HR recruitment training -QW Market Linkage -QW | Use of appropriate product coding, Trained on proper documentation of production records and raw materials receipts Two new accountants employed and supported with JD preparation In collaboration with NAFKA II program, the client has been linked to seven producer organizations for raw material sourcing. Three new BoP distribution channels established in Mbeya and Mbarali through AINFP customized support |
| 7 | Rumishael & Daughters | Tanzania | Foundational | Female: Male owned 60:40 | Breakfast cereals | Development of Product formulation - PC Plant layout – QW Market Linkages Support-QW | AINFP assisted the client to get volunteers who will provide technical support on instant porridge formulation. The project is in the initial stage and the product will target the BoP market especially school children and the household consumer. Volunteers have been engaged for best extrusion practices project charter, waiting for kick off call. Advised on production process flow. Participated in the BoP Challenge and emerged the winner. As a result, the client will receive 5-month technical |

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| | | | | | | Access to Finance-QW | assistance worth \$35,000 facilitated by BoP Inc. to implement their action plan. Through ISF support, the client got a loan approval amounting to \$140,909 from TADB for working capital and operations. |
| 8 | A-A Nafaka | Tanzania | Transition | Female owned - | Fortified maize flour | Good Manufacturing Practices Recommendation – QW Processor Pain points identified include; - Lack of fortification best practices and sales strategy. - Linkage to supply chain (SHF and BOP markets) | Advised client on SOPs development The client sent inspection enquiry to the TBS Advised the client on the importance of fortification and accepted to use dosifier provided by SANKU to produce fortified flour. Two project charters have been developed (Quality assurance system and Marketing strategies) and staffed with volunteers awaiting project execution. |
| 9 | ASAS | Tanzania | Accelerator | Family business (Male led) | Milk processor | Processor pain point: Establishment of competitive and sustainable feed manufacturing enterprise. - There is no sustainable animal feed for the SHF and for the factory farm. - Provide quality milk and milk products that meets international standard to the market consistently. - Come up with a Cost effective and quality feed (concentrate) formulations. | Developed one project charter, i.e. Animal feed formulation, and staffed with expert volunteers. |
| 10 | Msouth Extra Power Ltd | Tanzania | Transitional | Male owned and led | Fortified maize Flour | In-house customized training on GMP and OHS - Quick Win | In-house customized training on GMP and OHS conducted at Msouth Milling facility, Manzese Dar es Salaam, where 23 (12 female) were trained. The client has already started implementing some of the |

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| | | | | | | | GMP practices as evidenced by safety signage displayed in the plant. This processor has since been graduated from the program |
| 11 | Raphael Group Ltd | Tanzania | Transitional | 50:50 ownership and male led | Fortified maize Flour | GMP and OHS implementation | Two staff from maize milling section received customized in-house training on GMP and OHS and graduated from the program. Follow up on implementation of GMP to be undertaken. |

ⁱ <http://www.bopinc.org/we-are-bop-innovation-center>

ⁱⁱ a workshop for the shortlisted companies aimed at equipping them with tools to conduct an initial business analysis in order to refine their business model and determine if they should be targeting the BoP markets

ⁱⁱⁱ Smart Duka Program is one of the TechnoServe program that aims to empower Youth Entrepreneur owning and managing small retail shops mainly found in the informal settlement areas through provision of business technical with ultimate goal of ensuring sustainability of the enterprises.