



EX-POST EVALUATION OF USAID/ZAMBIA'S PRODUCTION, FINANCE, AND IMPROVED TECHNOLOGY PLUS (PROFIT+)

December 2019

This report was produced at the request of the United States Agency for International Development (USAID). It was prepared independently by Integra LLC under the Learning, Evaluation, and Analysis project (LEAP III).

FINAL EVALUATION REPORT

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DISCLAIMER

This report was produced at the request of the United States Agency for International Development (USAID) and was prepared independently by Integra LLC, under the Learning, Evaluation, and Analysis project (LEAP III).

TABLE OF CONTENTS

ACRONYM LIST	4
EXECUTIVE SUMMARY	6
I. INTRODUCTION	9
II. EVALUATION METHODOLOGY	14
III. EVALUATION FINDINGS	18
IV. CONCLUSIONS	43
V. REFERENCES	49
ANNEX 1: LITERATURE REVIEW	51
ANNEX 2. CAD SURVEY QUESTIONNAIRE	58
ANNEX 3. FOCUS CROP TRADE PERFORMANCE	64
ANNEX 4. DATA TABLES FROM THE CAD SURVEY	70

ACRONYM LIST

APS	Annual Program Statement
CAD	Community Agro-Dealer/Dealership
CFS	Crop Forecast Survey
CFU	Conservation Farming Unit
COMTRADE	Commodity Trade Statistics Database
COR	Contracting Officer Representative
CRS	Catholic Relief Services
DACO	District Agriculture Coordinator
DCOP	Deputy Chief of Party
DHF	Demonstration-Host Farmer
FGD	Focus Group Discussion
FISP	Farmer Input Support Program
FtF	Feed the Future
GRZ	Government of the Republic of Zambia
HA	Hectare
ICT	Information Communication Technology
IIP	Innovation, Investment, and Partnership
KII	Key Informant Interviews
LEAP III	Learning, Evaluation, and Analysis III Project
M&E	Monitoring and Evaluation
MoA	Ministry of Agriculture
NGOs	Non-Governmental Organizations
PACRA	Patents and Companies Registration Agency
PC	Producer Company
PROFIT+	Production, Finance, and Improved Technology Plus
R&D	Research and Development
SILCs	Saving and Internal Lending Communities
SMFM	Sell More for More
SNAP	Second National Agricultural Policy

SOW	Scope of Work
USAID	United States Agency for International Development
WRS	Warehouse Receipt System
ZAMACE	Zambia Commodity Exchange
ZARI	Zambia Agriculture Research Institute
ZEMA	Zambia Environmental Management Agency
ZOI	Zone of Influence
ZRA	Zambia Revenue Authority
6NDP	Sixth National Development Plan
7NDP	Seventh National Development Plan

EXECUTIVE SUMMARY

BACKGROUND AND METHODOLOGY

The United States Agency for International Development (USAID)/Zambia requested the Learning, Evaluation, and Analysis III project (LEAP III)¹ to conduct an ex-post evaluation of the Production, Finance, and Improved Technology Plus (PROFIT+) project, which was implemented from 2012 to 2017. The objective of PROFIT+ was to improve productivity, expand trade, and increase investments by developing functional market systems in rural areas. During the first half of PROFIT+, the project focused primarily on the Demonstration-Host Farmer (DHF) model, where lead farmers promoted awareness about improved agricultural practices. Mid-way through the project, PROFIT+ adjusted the project's focus to training and supporting DHFs to establish Community Agro-Dealerships (CADs). In addition to shifts in project activities, PROFIT+ also changed management and staffing considerably throughout its lifecycle.

The objectives of the evaluation are to identify: 1) key successes and challenges of PROFIT+ and critical processes/activities that enabled or contributed to these; 2) the merits and shortcomings of PROFIT+, as it directly relates to the CAD model and the Innovation, Investment, and Partnership (IIP) Fund; and 3) why activities have or have not continued beyond the life of project. USAID/Zambia provided five evaluation questions, which specifically focuses on sustainability and lessons learned of the project. The evaluation team utilized a mixed methods approach, combining a mix of qualitative key informant interviews (KIs), focus group discussions (FGDs), desk research and a quantitative survey to assess the successes, challenges, and sustainability of the CADs and the IIP Fund established under PROFIT+. It should be noted that, at the direction of USAID/Zambia, this evaluation is not conducted as a traditional performance evaluation to assess whether the overall targets of the project were met, but rather an assessment of the effectiveness and sustainability of the project.

KEY FINDINGS

Based on the evaluation results and consultations with USAID/Zambia, the team organized the key findings under the two main themes: 1) Sustainability and 2) Lessons Learned.

SUSTAINABILITY

Key Successes

- **Agriculture and business trainings were immensely popular and are still being used today.** Almost all CADs, whether they were operating a CAD business or not, praised trainings as the most valuable aspect from PROFIT+. Many still use improved agricultural techniques and continue to share advice with neighbors and members of their community.
- **Active CADs are doing better now than they were when PROFIT+ ended.** CADs currently operating an agro-dealership, have more clients and sell more input than they did when PROFIT+ ended.

¹ Implemented by Integra Government Services International LLC ('Integra') – www.integrallc.com.

- **Active CADs maintain and continue to value linkages with input suppliers fostered under PROFIT+.** CADs are primarily selling seeds and take care to maintain their relationships with suppliers.
- **Women CADs are more empowered in their business, household, and community than before they started the CAD business.** The success and failure rate between male and female CADs are comparable. However, women CADs have gained greater agency, voice, and leadership in their home and in their community since they started operating their agro-dealership.
- **Saving and internal lending communities (SILCs) formed under PROFIT+ are still in operation.** SILCs, dominated by women, continue to serve as an important customer base for CADs.

Key Challenges

- **Only 42 percent of men and women that were trained to become a CAD are currently operating today.** One quarter of trained CADs opened an agro-dealership but later closed it. Most did not have the financial means to establish a shop and were ill equipped to launch and run the business.
- **Producer companies (PCs) are struggling or have failed completely.** PCs were formed too late in the project and CADs forming the PCs were too inexperienced to launch a new business venture.
- **Investment under the IIP Fund have, in individual cases, spurred change, but as a whole, resulted in uneven impact.** The IIP funds were used across a vast spectrum of activities, but few of them truly bought down the risk of investing in the launch or growth of agro-businesses.

LESSONS LEARNED

Key Successes

- **Participants are still using knowledge from PROFIT+ trainings.** Trainings provided proved to be extremely successful under PROFIT+. 97 percent of CADs found the business training to be valuable, and 88 percent found the training on how to operate the business as the most valuable support they received from PROFIT+. CADs are still using the agricultural techniques and conservation farming approaches taught under PROFIT+ to improve the yield on their farms.
- **Focus on gender inclusion provided PROFIT+ with increased women participation and had positive outcomes on women.** PROFIT+ made an active effort to include women as participants in all project activities, ensuring that all activities were implemented in an environment conducive to women. Throughout the evaluation, women reported feeling more empowered after working with PROFIT+, with greater agency, voice, and leadership amongst households.

Key Challenges

- **Changes under PROFIT+ had lasting consequences on overall project performance and impact.** PROFIT+ not only had management and staffing changes but shifts in project

activities throughout the years. As a result, activities introduced or scaled up towards the end of the project received limited support and impact after PROFIT+ closed.

- **Project close-out also came as a surprise to many project participants.** Many project participants were completely unaware and unprepared that PROFIT+ was coming to an end. A better communicated exit strategy could have prepared project participants for greater resilience beyond the life of the project.
- **Unclear processes in selecting CADs contributed to a high rate of non-operating agro-dealerships.** Many DHFs were selected to participate in the CAD training. However, the majority had limited financial resources and business experience, which posed a considerable challenge for establishing a CAD.
- **A lack of focus and purpose for the IIP Fund made it difficult to assess its impact.** The IIP Fund provided grants with unclear purpose, selection criteria and timeline. Beyond individual cases, it is hard to see how the activities funded under the IIP Fund provide opportunities for agro-business growth, stimulate private sector investment, and expand Zambia's agriculture sector.

I. INTRODUCTION

The United States Agency for International Development (USAID)/Zambia engaged Integra Government Services International through the Learning, Evaluation, and Analysis III project (LEAP III) to conduct an ex-post evaluation of the Production, Finance, and Improved Technology Plus (PROFIT+) project (2012-2017), a five-year contract managed by ACDI/VOCA.

The objectives of the evaluation of PROFIT+ are threefold:

- **Objective 1:** Identify key successes and challenges of PROFIT+ and the critical processes/activities that enabled or contributed to them;
- **Objective 2:** Identify the merits and shortcomings of PROFIT+ Community Agro-Dealers (CAD) model; and
- **Objective 3:** Identify why activities have continued or not continued beyond the life of the project.

PROFIT+, a \$24 million contract between USAID/Zambia and ACDI/VOCA, was Zambia's Feed the Future (FtF) flagship project. The goal of PROFIT+ was to increase food security and decrease hunger through agriculture-led growth and inclusive market access by smallholder farmers. This was to be achieved through improved productivity, expanded agricultural trade, and increased agricultural investment. The project aimed to achieve a 30 percent increase in agricultural productivity and a \$125 million increase in value of agricultural sales, resulting in an increase of incomes for 200,000 smallholder farmers, processors, and other value chain actors in four of the nine districts of the Eastern Province by 2017.

To this end, PROFIT+ identified and supported lead farmers to launch and operate small enterprises, known as CADs. The CAD activity was designed as a market approach to fill the often missing “last mile” between farmers, input suppliers, and output buyers. By establishing linkages for CADs with input suppliers and output buyers, PROFIT+ sought to address smallholders' limited access to input and output markets, and to foment entrepreneurial activities and employment opportunities in rural areas. In addition, PROFIT+ established the Innovation, Investment, and Partnership (IIP) Fund, a grant facility to foster innovation, leverage resources, and to address market linkage constraints by buying down the risk of capital investments. To this end, the IIP Fund invested in input companies to develop their rural presence and linkages with the CADs in out-grower schemes also linked to CADs; and in agricultural processing facilities to improve, diversify and increase processing capacity. Across these activities, PROFIT+ sought to increase women's participation and empowerment by engaging women as CADs and investing in women's entrepreneurship.

PROFIT+ operated in the Eastern Province (Petauke, Katete, Chipata, and Lundazi) and peri-urban Lusaka (Chibombo, Chongwe, Rufunsa, Chilanga, and Kafue). Furthermore, PROFIT+ targeted six value chains: maize, groundnut, soybean, sunflower, onion, and tomato, with honey added in year four. Throughout the project, PROFIT+ collaborated with a number of other USAID funded projects, including the MAWA project, Southern Africa Trade Hub and the Commercial Agribusiness for Sustainable Horticulture (CASH) project.

1.1 OVERVIEW OF ZAMBIA AND ITS AGRICULTURE SECTOR

Zambia's economy over the past two decades has grown at an average rate of 5 percent annually.² Despite overall positive economic growth, the agricultural sector has not kept pace with other sectors of the economy, despite its favorable endowments in terms of water resources, arable land, and climatic conditions. Agriculture's share in the Zambian economy has declined from a range of 15-20 percent over the past fifteen years, down to a level of only 5 percent in 2018.³ Since agriculture accounts for over 60 percent of employment nation-wide and plays an even greater role in providing employment and food security for the rural population, it is generally recognized that the sector will require additional support from both public and private sources, in order to regain its role as an engine of growth, particularly in rural Zambia.

In its Sixth National Development Plan (6NDP)⁴, the Government of the Republic of Zambia (GRZ) confirmed its intention to promote crop diversification; increase area under irrigation; enhance productivity; and broaden utilization of improved seeds and other technologies, including mechanization. This intention was re-stated in the Seventh National Development Plan (7NDP)⁵, where broad goals of increased farmer incomes and production were accompanied by specific objectives concerning the expansion of agro-industries, diversification beyond traditional field crops, and a focus on improving production of high value exports.

Consistent with these development objectives, USAID/Zambia established PROFIT+ in four districts in the Eastern Province and six districts in peri-urban Lusaka. To situate the PROFIT+ project, this section will provide an overview of production and trade trends for the selected PROFIT+ value chains.

1.2 OVERVIEW OF PRODUCTION AND TRADE TRENDS FOR PROFIT+ COMMODITIES

This section will provide a brief overview of production and trade trends for the project's focus commodities before and during the PROFIT+ years. Table 1 shows production trends in the four staple commodities targeted by PROFIT+. Crop forecast survey (CFS) data was not available for the three horticultural crops.⁶ On a national level, there were increases in overall production tonnage across all four of the staple commodity groups, with significant increases registered for both soybeans and sunflowers (see Annex 4). However, for the district levels within the Eastern Province, growth was more uneven. Chipata exceeded the national rate of increase in soybean tonnage and matched the national trend for groundnut and maize tonnage, while coming in well below the average on sunflower tonnage. Katete exceeded national average volume growth on all four commodities, while Lundazi matched national growth for sunflowers and exceeded the national average on the other three crops. Petauke outperformed on soybeans but came in below the national average on maize and sunflower, and showed declining

² USAID. *Evaluation Statement of Work for Ex-Post Performance Evaluation of Production, Finance, and Improved Technology Plus (PROFIT+) Program (2012-2017)*, p.1

³ Ibid, p.1.

⁴ Government of the Republic of Zambia, National Planning Department, Ministry of Finance, *Revised Sixth National Development Plan, 2013-2016*, (2014), p.8

⁵ Government of the Republic of Zambia, Ministry of National Development Planning, *Seventh National Development Plan, 2017-2021*, (2017), p.65

⁶ Central Statistical Office, *Agriculture and Environment Statistics Division*, <https://www.zamstats.gov.zm/index.php/divisions/agriculture-environment-statistics>

production of groundnuts. Based on the limited CFS data available for peri-urban Lusaka, Chongwe and Kafue outperformed national averages on maize and groundnut. Chongwe's production of soybean and sunflower declined over the timeframe, while Kafue matched national average for soybean but declined on sunflowers. Production for each crop per year can be found in Annex 4.

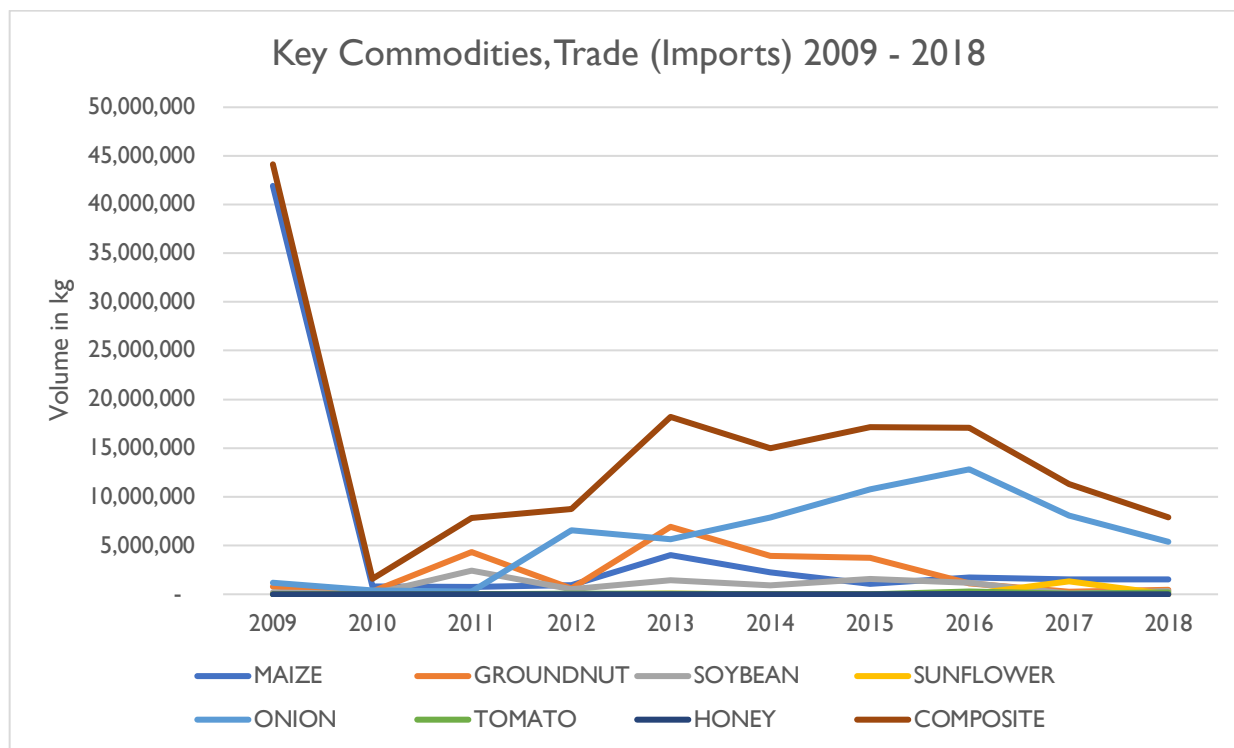
Table 1: Staples Production in PROFIT+ Focused Districts, 2009-13 vs. 2014-18

		Maize (% change)	Groundnut (% change)	Soybean (% change)	Sunflower (% change)
National	Zambia	+13%	+14%	+68%	+67%
Eastern Province	Chipata	+12%	+15%	+729%	+17%
	Katete	+20%	+48%	+1457%	+96%
	Lundazi	+71%	+31%	+275%	+65%
	Petauke	+2%	-6%	+1275%	+15%
Lusaka	Chongwe	+21%	+87%	-5%	-80%
	Kafue	+32%	+151%	+69%	-28%

Source: Crop Forecast Surveys, 2009-2018

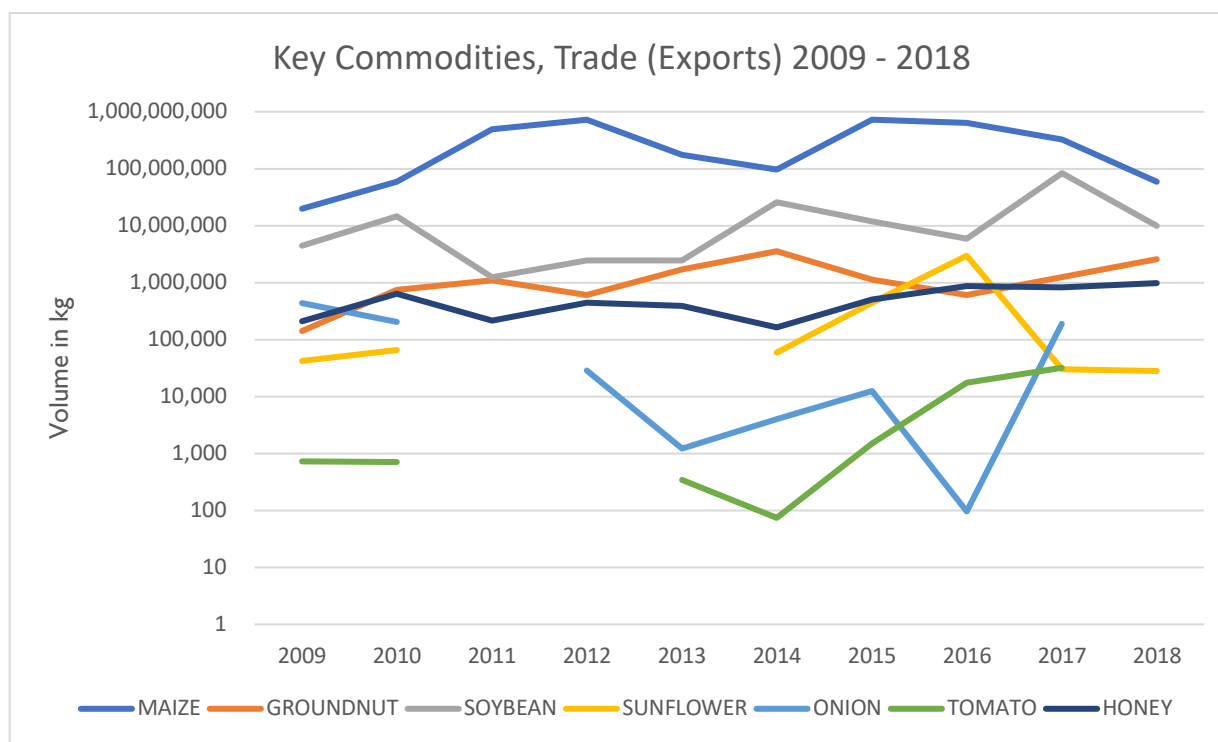
Figures 1 and 2 below present a summary of average import and export performance for the seven focus commodities, as captured by the UN's Commodity Trade Statistics Database (COMTRADE), for the period from 2009-2018. All of the data represented here are derived from official sources. For maize, there was a significant 84 percent reduction in average import volumes, coupled with a 25 percent increase in average export volumes. This same pattern is repeated in the case of groundnuts and soybeans, with noticeable decreases in average imports, and significant increases in average exports. While sunflowers show a large increase in imports, the rate of export growth far exceeds that of the corresponding imports. Export volumes of onions declined over these years, while imports quadrupled. Tomato exports increased significantly, but imports were ten times greater in volume. Of these latter value-added horticultural products, only honey showed strong growth in exports, coupled with a decline in imports.

Figure 1: Focus Crop Trade Performance, 2009 – 2018 (Imports)



Source: United Nations COMTRADE

Figure 2: Focus Crop Trade Performance, 2009 – 2018 (Exports)



Source: United Nations COMTRADE

Based on anecdotal evidence gathered during the course of the team's fieldwork, there is reason to believe that considerable informal trade occurs along Zambia's borders. While such informal trade might serve to alter these depictions considerably, it is very difficult to estimate the quantities of each crop, which are exported or imported informally in any given year.

The GRZ has over the past decade, with the support of donors and non-governmental organizations (NGOs), moved in the direction of making improvements in the agricultural economy. However, its response to many of the challenges outlined in 6NDP and 7NDP, such as unbalanced agriculture policies favoring maize production and disadvantaging the production of other crops; poor utilization of research and development (R&D), mechanization and information communication technologies (ICTs) to increase yields; and poor storage, insufficient irrigation and related infrastructure challenges, remains inadequate.

II. EVALUATION METHODOLOGY

This evaluation seeks to identify: 1) key successes and challenges of PROFIT+; 2) the merits and shortcomings, specifically related to the CAD model and the IIP Fund; and 3) why activities under these interventions have or have not continued beyond life of project. Through consultations with USAID/Zambia, this evaluation will explore the sustainability and lessons learned of key interventions under PROFIT+, based on five evaluation questions provided in the Scope of Work (SOW) (see Table 2).^{7,8} Thus, this evaluation will not follow a traditional performance evaluation approach to assess whether the overall targets of the project were met but rather an assessment of the long-term effects of each project intervention since the project has closed.

Table 2: Evaluation Questions

Evaluation Questions
Lessons Learned
What changes have occurred in people's lives due to PROFIT+ interventions?
What were the key drivers of successes/challenges for PROFIT+?
Sustainability
To what extent did the grant facility stimulate private sector investments and expansion in the agriculture sector?
Have benefits of PROFIT+ been sustained?
How did project activities, techniques, and processes deployed by PROFIT+ address the issues of women's empowerment in the project area?

2.1 EVALUATION METHODS

The evaluation team consisted of three core members: Team Lead, Project Manager and Agriculture Expert, as well as one local Monitoring and Evaluation (M&E) and Agriculture Specialist. LEAP III also engaged a local data collection firm, RuralNet Associates, to collect survey data on CADs to assess the sustainability and success of PROFIT+.

To address the five evaluation questions, the team utilized a mixed methods approach, combining a mix of qualitative key informant interviews (KIs), focus group discussions (FGDs), and a quantitative survey to assess the success, challenges, and sustainability of CADs trained under the PROFIT+ project.

This approach is reflective of USAID's similar combinations approach where two different methods are used to collect and analyze information, which is then synthesized to answer individual evaluation

PROFIT + Evaluation Team:

Elin Cohen - Team Lead

Pin Thanesnant – Project Manager and Agriculture Expert

Mwimbu Ngoma – Local Evaluation and Agriculture Specialist

Quantitative Survey Firm:

RuralNet Associates

⁷ Key interventions under PROFIT+ are as follows: CAD model, SILCs, PCs, and the IIP Fund.

⁸ Through consultations with USAID/Zambia, the evaluation team was informed that this should not be conducted like a traditional performance evaluation. Thus, the team proposed to structure the report by answering the evaluation questions based on the two key themes: Lessons Learned and Sustainability, revolved around CADs and the IIP Fund.

questions.⁹ The evaluation team conducted desk research prior to fieldwork to identify and analyze secondary information that can be triangulated with data collected in-country.

2.2 OVERVIEW OF FIELDWORK

The evaluation team conducted fieldwork from October 21, 2019 to November 1, 2019, with the majority of the time spent in the Eastern Province. The team spent two days in Lusaka and peri-urban Lusaka (Chongwe), three days in Lundazi, five days in Chipata, and one day in Petauke. During the two-week field visit, the evaluation team carried out 39 KIIs and FGDs with the following stakeholders: PROFIT+ staff; CADs; Saving and Internal Lending Communities (SILCs); input providers and output buyers; producer companies (PCs); and government and research institutions. Out of 39 meetings, 13 meetings were with recipients of the IIP Fund.

In addition to the evaluation team's fieldwork, LEAP III also engaged a local data collection firm, RuralNet Associates Ltd., to carry out a survey of CADs. Based on consultations with USAID/Zambia, RuralNet carried out the surveys in the Eastern Province from October 14, 2019 to October 27, 2019.

2.2.1 QUANTITATIVE SURVEY OF CAD IN EASTERN PROVINCE

In order to understand the current state of PROFIT+'s flagship activity, the CAD model, the evaluation team developed an extensive quantitative survey instrument. The survey explored the current state of the CAD business, the type of support the CAD obtained from PROFIT+, and successes and challenges in the business. The full survey can be found in Annex 4. The evaluation team worked with RuralNet, as well as agricultural and food security, in order to administer the survey.

The evaluation team utilized the existing CAD databases supplied by USAID to establish the sampling frame for the four PROFIT+ districts in Eastern Province. The databases contained a total of 299 CADs: 79 in Chipata, 69 in Lundazi, 70 in Katete and 81 in Petauke. In the sample frame, 37 percent of CADs are women and 63 percent men. Based upon the time and resources for data collection, RuralNet administered a total of 180 quantitative surveys, which accounts for 60 percent of the total sampling frame.¹⁰ Out of the 180 interviewed CADs, 58 percent (104) participants were male and 42 percent (76) were female. Table 3 shows the number of interviews by sex and district.

Table 3: Surveyed CADs – Women and Men by District

	Lundazi	Chipata	Katete	Petauke	Total
Male	60% (23)	46% (21)	70% (33)	55% (27)	58% (104)
Female	40% (15)	54% (25)	30% (14)	45% (22)	42% (76)
Total	100% (38)	100% (46)	100% (47)	100% (49)	100% (180)

2.2.2 QUALITATIVE DATA COLLECTION

FGDs: The evaluation team carried out FGDs with PROFIT+ beneficiaries in peri-urban Lusaka and the Eastern Province, specifically in Lundazi and Chipata. The evaluation team facilitated three different FGDs

⁹ See *USAID Technical Note: Conducting Mixed-Method Evaluations*, Version 1, June 2013.

¹⁰ RuralNet originally pre-tested the survey questionnaire in peri-urban Lusaka, reaching five CADs to ensure that CADs understood the questions. Due to time constraints and per USAID/Zambia's recommendation, CADs surveyed in peri-urban Lusaka during pre-testing were not included in the survey results.

for members of SILCs, which were primarily made up of women, members of PCs, and other groups that have benefited from the IIP grant. Representatives of seven PCs participated in FGDs, including ZIMBATHON, NYEBAD, SENYISA, JONAFRAPA, VISANJE, PEMMAFENG, and SIKAP.

KIIs: KIIs were carried out with PROFIT+ staff; CADs; input providers and output buyers; IIP Fund grantees; SILCs; PCs; and staff members of the Ministry of Agriculture and the Zambia Agriculture Research Institute (ZARI). Details of each group are provided below:

- **CADs** were interviewed to deepen our understanding of the successes and challenges they have faced in their business ventures since PROFIT+ ended. KIIs with CADs helped the evaluation team to especially target female CADs to capture their experiences. The evaluation team conducted 26 KIIs with CADs (12 women and 14 men) focused in Lundazi, Chipata, and Petauke.
- **Input providers and output buyers** connected with CADs were interviewed in the Eastern Province and Lusaka. The evaluation team conducted 11 KIIs in this category, meeting with Sylva Foods, JungleBeat, ZAMSEED, MRI Syngenta, Good Nature Agro, NEZI Investments, COMACO, SARO, and NANIWE.
- **IIP Fund grantees** were interviewed to assess the extent that the grant stimulated growth for their businesses. The evaluation team visited 13 IIP Fund grantees at their sites of work to observe the investments that were made under the grant.
- **Ministry of Agriculture (MoA)** staff members were interviewed, including the District Agriculture Coordinator (DACO) in Chipata and a representative of the ZARI, the largest research entity under the MoA.¹¹
- **PROFIT+ staff** members were interviewed about the project to share their perspectives on successes and challenges throughout the years. The team interviewed five PROFIT+ staff including the most recent Chief of Party, as well as the most recent Deputy Chief of Party (DCOP).

2.2.3 SECONDARY DATA

The evaluation team reviewed secondary data related to agricultural production for the selected value chains and for the selected districts. The purpose of the analysis was to provide a short introduction to agricultural production in the selected districts to better understand the evaluation findings. The team also conducted a review of PROFIT+ project documents. The team worked with USAID/Zambia to retrieve project documents including the initial task order, annual performance reports, CFS data, activity work plans, CAD databases, and more. The team has summarized some of the findings in a short literature review found in Annex 3 at the end of this report.

2.3 LIMITATIONS

PROFIT+ has been closed for two and a half years. This presented a few challenges. Firstly, some people that worked for the project have left and moved away. The team even learned that two of the senior field staff have passed away. This could have affected the sampling frame to an unknown degree. USAID/Zambia staff that used to supervise the project have also moved, which made it more challenging to access information due to gaps in recordkeeping. Some project documents, particularly related to the IIP fund,

¹¹ ZARI also received IIP grants for groundnut basic seed provision, training of seed inspectors, and basic seed multiplication.

could not be tracked down. The evaluation team obtained all the annual performance reports, but only the work plans for two years. The team has also requested project documents specific to the IIP Fund, however, no documents other than the manual were recovered. The team has therefore an incomplete picture of the IIP Fund and was unable to vet the IIP Fund history, purpose, and criteria against any project documents, and only relied on word of mouth of recipients involved.

Similarly, as more than two years have passed since the end of the project, some stakeholders did not remember how PROFIT+ supported their projects or the extent to which the support was effective. In many instances, stakeholders under PROFIT+ have also worked with many other projects funded by USAID and other donors. For instance, many CADs stated that they have worked with a variety of projects before or after PROFIT+ including CARE International, Catholic Relief Services (CRS) or Musika. The effects of these projects will surely overlap with results from PROFIT+, making it more difficult to attribute outcomes and sustainability to this project.

Lastly, while in country, the evaluation team encountered a number of CADs that never started a business. Prior to the evaluation team's arrival in Zambia, the team operated under the assumption that all CADs included in the CAD databases supplied by USAID/Zambia had started an agro-dealership during the time PROFIT+ operated. As the evaluation team came to understand in the field and made evident through the results from the CAD survey, a majority of CADs included in the databases never started operating an agro-dealership. The evaluation team designed the survey questions based upon the information that was available in project documents and shared by PROFIT+ staff in KIIs. As there was no mention that many CADs had never even started a business, the evaluation team could not take this fact into consideration when designing the quantitative survey. Thus, the team had to retroactively seek explanations for why some CADs never started the business at all.

III. EVALUATION FINDINGS

Since this evaluation is focused on understanding the sustainability and lessons learned of PROFIT+, the evaluation team has structured findings under four main interventions: 1) the CAD Model, 2) SILCs, 3) PCs, and 4) IIP Fund, in order to address the five evaluation questions.¹² First, the evaluation team provides an overview of how PROFIT+ was implemented in practice. This section discusses the progression of activities throughout the years, as well as shifts in management and staffing. Then, the evaluation team presents findings under the CAD model. In this section, the evaluation team explores the successes and challenges of being an active CAD, as well as CADs that never started a business, or started but failed to remain in business. In Section 3.3, and 3.4, the report focuses on the merits and issues of SILCs and PCs. Lastly, in Section 3.5, the team explores the IIP Fund, understanding its function and to what extent it stimulated private sector investments and expansion in the agriculture sector.

3.1 IMPLEMENTATION OF PROFIT+

Based on project documents and fieldwork, the evaluation team confirmed that the implementation of the PROFIT+ project changed considerably throughout the years. At its outset, PROFIT+'s aim was to target 200,000 smallholder farmers in four districts of Eastern Province (Chipata, Katete, Lundazi, and Petauke) and three Peri-urban Lusaka districts (Chibombo, Kafue and Chongwe). In the Eastern Province, PROFIT+ was focused on all six value chains (i.e. groundnuts, sunflower, soybeans, maize, tomato and onion), while in Peri-urban Lusaka, the focus was primarily on tomato and onion.

When PROFIT+ started implementation, its main activity focused solely on the Demonstration-Host Farmer (DHF) model where lead farmers were selected to train other farmers and promote awareness about improved technologies, practices and products. One DHF worked with five lead farmers, each of which would aim to reach out to 20 smallholder farmers, with the overall goal that one DHF would ultimately reach over 105 smallholder farmers. These DHFs were then linked with seed companies such as Pannar, Seed Co., Pioneer, MRI Syngenta, and Dekalb. In the first year, 70 DHFs were selected and trained in management and agribusiness skills whereby 280 demonstration plots were established, with four types of crops per site including groundnuts, soybeans, maize, and sunflower. The DHF model was rapidly scaled up; by September 2014, PROFIT+ had established 2,780 demonstration plots.¹³

In March 2013, PROFIT+ also introduced the IIP Fund with the intention of dedicating \$7.1 million over the life of the project.¹⁴ The IIP Fund aimed to act as a catalyst to private sector investment, to reduce risk and cost for both investors and farmers. After the first year, the IIP Fund provided smallholder farmers with various grants focused on in-kind contributions like providing sprayers, water pumps, gumboots, and other basic equipment. PROFIT+ also published online advertisements and utilized public media to get private sector entities to submit concept notes for innovative concepts or activities to be funded under

¹² The evaluation team noted that several of the evaluation questions overlapped and thus, if each question were dissected and answered separately, many of the findings would be repetitive. The evaluation team suggested to USAID/Zambia to outline the report in this matter, to which it was approved for the report.

¹³ USAID. *Production, Finance, and Improved Technology Plus (PROFIT+) Annual Performance Report No. 2 October 1, 2013 – September 30, 2014*, 2014.

¹⁴ USAID. *Year 1 PROFIT+ Work Plan*, July 25, 2012.

the IIP Fund. By Year 3, the total funding of the project was reduced from \$24 million to \$18 million.¹⁵ Due to this funding change in Year 3, the IIP Fund was also “*not utilized to its full capacity*”.¹⁶ During the first couple of years of PROFIT+, the IIP Fund was, to a large extent, used as an operational budget for financing field activities, rather than as a fund to attract investment in agricultural businesses.

Following management issues during the first half of the project, PROFIT+ revamped its management structure in Year 3. It became clear to PROFIT+'s new management that they needed to concentrate their efforts on establishing an infrastructure to link farmers with the input and output markets, rather than engaging in agricultural extension type work. To this end, PROFIT+ shifted away from the DHF activities to focus on the CAD model whereby top performers and motivated DHFs were chosen to become CADs.

The CAD model was expected to facilitate local access to, and increase availability of, improved seed varieties and other inputs and services (such as spraying, mechanization, etc.) for the community members by building partnerships between CADs and input companies, as well as commodity buyers. CADs served as input suppliers to local farmers, but continued to demonstrate improved technologies on the demonstration plots, such as labor-saving conservation farming methods that maintain soil fertility, promotion of soil testing, methods of proper spraying, fertilizer application, etc. In Years 1 and 2, PROFIT+ developed an inventory of 123 existing agro-dealers in the project zone of influence (ZOI) and assessed their operating environment constraints. PROFIT+ additionally developed a web-based agro-dealer inventory and assessment tool to facilitate stronger linkages with input suppliers through increased transparency of agro-dealer capacity, inventory availability, record-keeping, and product lines. PROFIT+ used this assessment tool to identify 24 of the 123 agro-dealers, which had the greatest capacity and interest to partner with PROFIT+ in Year 3 on innovative business models. It should be noted that many CADs were already agro-dealers prior to PROFIT+ and distinction was not made by ACDI/VOCA in the database.

In addition to the shift in project interventions throughout the years, internal management within PROFIT+ also changed significantly. When PROFIT+ was awarded, the project was led by its first Chief of Party, however, within the first year the Chief of Party position was transferred to a local Zambian. Under his management, key stakeholders mentioned a number of issues surrounding communications and use of funds. CADs shared experiences of being told to provide funds to PROFIT+ staff in order to secure seeds but never saw the staff again after doing so. In other instances, PROFIT+ staff had promised a processor a deal in linkages to farmers, which the processor spent significant resources to prepare for, but PROFIT+ never followed through. Due to the considerable issues in internal management, management changed once again in Year 3 of PROFIT+, whereby a new Chief of Party took over the project in December of 2015. The project also hired a new finance manager, office managers, and administrative assistants. Furthermore, the Horticulture Lead, Finance Lead, and Private Sector Lead were all no longer with the project. By Year 4, the M&E Officer, assumed the role of DCOP, as the previous DCOP left the project to become a member of the Zambian Parliament in August 2016.¹⁷ The new COP took over the project

¹⁵ USAID. *Year 3 PROFIT+ Work Plan*, October 2013. The project documents do not provide any explanation for the reduction in funding, but it is possible that the internal management issues contributed to the reduced budget.

¹⁶ USAID. *Production, Finance, and Improved Technology Plus (PROFIT+) Annual Performance Report No. 3 October 1, 2014 – September 30, 2015*, 2015.

¹⁷ USAID. *Production, Finance, and Improved Technology Plus (PROFIT+) Annual Performance Report No. 4 October 1, 2015 – September 30, 2016*, 2016.

at a time when significant resources had already been spent and project activities had been allowed to continue without yielding the desired result. Under his leadership, PROFIT+ made significant improvements and refocused its activities on private sector-led growth. The new COP connected promising agro-businesses with other businesses, networks, and resources and reoriented the expansive training of DHF to the more focused, and private sector-led CAD approach. Had the new COP been given the opportunity to shape and design the interventions from the beginning of PROFIT+, the outcome would most likely have been more robust and substantive.

Issues of internal management under PROFIT+ were consistently mentioned to the evaluation team as a constraint. Staffing changes throughout the years were said to be an issue, as many CADs and stakeholders were not informed. As a result, CADs did not know who to speak with, communication was inconsistent, and transitions from old staff to new staff were incomplete. Additionally, trust and past institutional knowledge were lost when CADs and other stakeholders were being introduced to new staff. Similarly, towards the end of the project, many CADs and other key stakeholders mentioned a lack of advance notice regarding the phase out of PROFIT+. By March 2017, many PROFIT+ staff members had left the project and only three remained by April 2017. While some CADs were told to attend the close out and learning conference in April 2017, many were unaware of PROFIT+'s closing. Many stakeholders mentioned not knowing that PROFIT+ was coming to an end and/or having been told to apply for a grant to simply have funds rejected and/or a lack of response all together.

3.2 THE CAD MODEL

3.2.1 OVERVIEW

During the second half of the project, PROFIT+ identified, trained, and supported farmers to launch and operate small agro-input enterprises or CADs. According to the final Annual Performance Report, there were 338 CADs¹⁸ in the final year of the project and; *“More mature CADs continue to expand their operations and relationships with the Government, input companies, buyers, and financial institutions, giving the newer CADs a practical example to follow in terms of growing their rural enterprises.”*¹⁹ This section explores the current state of CADs and the sustainability of the CAD businesses.

In addition to the evaluation team, RuralNet Associates simultaneously carried out a quantitative survey of 180 CADs in Lundazi, Chipata, Katete and Petauke for this evaluation. As detailed in the Evaluation Methodology section, CADs were randomly sampled from PROFIT+'s CAD databases. The survey found that only 42 percent (76) of project participants that had been trained and supported to become a CAD under PROFIT+ was currently operating a CAD. The remaining 58 percent (104) had either never started a CAD business or started a CAD but had since closed it. 42 percent (32) of active CADs (those still operating a CAD

Out of 180 CADs, only 42 percent of those trained and supported to become a CAD under PROFIT+ are currently operating a CAD business; 34 percent never started a CAD business and the remaining 24 percent started but ceased operating their CAD business.

¹⁸ As discussed in the methodology section of this report, the PROFIT+ CAD database included 343 CADs, hence there is a small discrepancy between the stated numbers of CADs in the CAD database and the final annual performance report. The evaluation team doesn't know the reason for this discrepancy.

¹⁹ USAID. *Production, Finance, and Improved Technology Plus (PROFIT+) Annual Performance Report No. 5 October 1, 2016 – May 9, 2017*, 2017, page 11.

business) are women, and 58 percent (44) are men.²⁰ In this section, the evaluation team will assess PROFIT+'s process of selecting CADs, and explore why such a high percentage of trained CADs are inactive (not currently operating a CAD business). Active CADs will then be discussed in more detail with further findings from the CAD survey explored below. CADs were also trained to be part of SILCs and PCs, which will be discussed further in this report.

Table 4: Active and Inactive CADs To-Date (as of October 2019)

District	Active CADs	Inactive CADs	Total
Lundazi	53% (20)	47% (18)	100% (38)
Chipata	41% (19)	59% (27)	100% (46)
Katete	26% (12)	74% (35)	100% (47)
Petauke	51% (25)	49% (24)	100% (49)
Total	42% (76)	58% (104)	100% (180)

3.2.2 CAD SELECTION PROCESS

There were no clear selection criteria for CADs, leading to inconsistent results. During the first half of PROFIT+, the project focused on training and supporting farmers to establish demonstration plots. By September 2014, PROFIT+ had established 2,780 demonstration plots.²¹ By 2015, PROFIT+ not only changed leadership, but shifted its project focus away from the DHF model and introduced the CAD model. As the CAD approach was introduced mid-way through the performance period, there was a sense of urgency to launch the CAD activities. As PROFIT+ had already invested significant resources in the training of several thousands of demonstration host farmers, PROFIT+ focused on demo-host farmers for the initial recruitment of CADs. By September 2015, PROFIT+ reported that the project had “graduated a group of 200 best-performing farmers from their initial roles as demo-host farmers (DHF) to CADs”.²² Almost all of the CADs that are currently operating an agro-dealership (96 percent) had a demo plot during PROFIT+.²³ CADs that joined PROFIT+ during the first two years of the project (2012-2014) received sustained training for a longer period of time, and as a result are more likely to still have an active CAD (see Table B in Annex 5).

While the majority of CADs had been DHFs, there were also farmers that had not, but joined PROFIT+ towards the end of the project period. For instance, the evaluation team met with two CADs that joined PROFIT+ in 2016 after their church group and women’s village group respectively recommended them for CAD training; one of them was entrepreneurial and operated a flourishing business, while the other one had very few prospects of ever starting a CAD business. PROFIT+ also integrated already existing

²⁰ See table A in Annex 5. Note that these percentages also correspond to the percentage of women (42 percent) and men (58 percent) in the sample.

²¹ USAID. PROFIT+, *Annual Performance Report No 2*, 2014.

²² USAID. PROFIT+, *Annual Performance Report No, 3*, 2015.

²³ Almost all (96 percent) of the CADs currently operating an agro-dealership reported that they still use the demonstration plot. 74 percent said they used it once per year; 20 percent two to six times per year; and the remaining 5 percent twelve or more times per year.

CAD in the area from other USAID projects into the project. 37 percent of CADs surveyed for this assessment currently operating an agro-dealership had started the business without the support of PROFIT+.

The combination of a sense of urgency to launch the CAD activity, and the fact that PROFIT+ already had poured significant resources into training DHFs, caused PROFIT+ to select “*the best*” DHFs to become CADs. However, there were no set criteria or guidelines for what the “*good or the best*” constituted. Even basic requirements, such as owning a storefront, in order to become a CAD were overlooked. CADs could not obtain the necessary licenses and permits to sell inputs unless they had a shop to sell their products. Unlike some other types of businesses, agricultural inputs should not be sold from home due to hazardous materials, such as chemical treatment on seeds, fertilizers, or pesticides. As a result, to open an agro-dealership, CADs needed capital to build or rent a shop. Thus, access to a store or the ability to fund the construction or rent of a shop should have been one of the selection requirements. In addition, entrepreneurial drive and the ability and integrity to repay input suppliers are other qualities that PROFIT+ should have considered before picking CADs. During this evaluation, the team talked to several people that were selected and trained as CADs but did not in fact start any business or move forward whatsoever.

3.2.3 INACTIVE CADS

The majority of participants trained to become a CAD under PROFIT+ (58 percent) are not operating an agro-dealership. The majority of inactive CADs never started a business (59 percent), while the remaining failed in their business venture (41 percent). 42 percent of the inactive CADs are women, and 58 percent are men, which corresponds to the overall percentage of women and men in the sample (Table A in Annex 5). 61 CADs, that is 59 percent of inactive CADs and 34 percent of all surveyed CADs, never started a CAD business. As shown in Table 5 below, the vast majority of those that never started a CAD business (89 percent) do not have a shop and therefore would have had to rent or build one prior to starting their business, which represents a significant additional cost.

In very few instances, PROFIT+ provided CADs with seed funding to construct a shop, but in most instances, CADs had to self-finance the establishment of a shop. Lack of access to capital is the main reason why inactive CADs have not been able to build or rent a shop. Some of them were never in a position to generate resources to be able to build or even rent a shop. Many inactive CADs noted that had they received some seed capital to build the shop, they believe they would have been able to operate a CAD. A few inactive CADs that never started their business (11 percent) built a shop, but due to the financial undertaking to build the shop and register (or partly register) the business, they had no capital left to start operating the business. One inactive CAD from Chipata shared “*I received training and obtained the papers from PACRA and Zambia Revenue Authority (ZRA)²⁴, but I did not get a grant or seed money from PROFIT+ to start the business. The building meant for the shop is now a dwelling house*”.

²⁴ The Patents and Companies Registration Agency (PACRA) issues business licenses and Zambia Revenue Authority (ZRA) issues tax IDs.

Table 5: Inactive CADs and Ownership of a Shop

	Started CAD business but closed it down	Never started CAD business	Total
Own a shop	75% (32)	11% (7)	37% (39)
Don't own a shop	25% (11)	89% (54)	63% (65)
Total	100% (43)	100% (61)	100% (104)

Forty-three CADs, that is 42 percent of inactive CADs and 24 percent of all surveyed CADs, started an agro-dealership but closed it down. Lack of capital to operate the business was the most commonly cited reason for why they stopped operating the business. Some noted that the business was not profitable or that there was a lot of competition in the area. Many operated on small margins and they had no financial buffer for unforeseen events, such as health issues or death in the family. To address such emergencies, they diverted money away from the business to the family and, as a consequence, had to close down the business. One female CAD in Chipata who closed her shop shared *“I opened a shop, PROFIT+ trained me well and the business was running well until I got sick and spent much time at home away from the shop, we also had a funeral and that took money. Right now, I have another bereavement.”* Another CAD shared that she had to sell the roof of her shop to pay for her baby's funeral. However, even foreseen expenses such as school fees affected the business' budgets and CADs had to close down their shops as they ran out of funds.

A few CADs noted that they had issues obtaining the certificate to sell inputs from the Zambia Environmental Management Agency (ZEMA). One inactive CAD in Chipata shared, *“we paid for ZEMA certificates, which did not come, and this is why we stopped.”* Another inactive female CAD in Petauke said, *“I opened a shop. PROFIT+ really helped me, but when they left, I felt vulnerable. I built the shop and applied for PACRA and ZEMA, but my certificates did not come out. I really wish another organization could come through and help us.”*

Despite being inactive, many CADs noted that they appreciate the trainings received from PROFIT+; they applied the agricultural training at their farms and some shared how they still provided neighbors with agricultural advice they learned from PROFIT+. Similarly, many appreciated the business management and savings and loans trainings, and most hoped to be able to launch or restart their agro-dealership. Some were still supporting the SILCs they had started. For many, especially those that had never started the business, the likelihood that they would be able to launch the business anytime soon seemed unrealistic, but for a few, the closure of their business was only a temporary setback. For instance, one female CAD in Chipata had three input suppliers and aggregated for one output buyer before the roof on her store blew off in a storm. She had to close the store, save up money for the renovation. Right now, she is underway to restore the shop and reported that she had money to restart the agro-dealership. While inactive CADs overwhelmingly appreciated the training, many voiced that they were surprised when PROFIT+ phased out in 2017. Sentiments like *“The problem is that they left before we could stand well. I was surprised that PROFIT+ came to an end”*; *“PROFIT+ pulling out, that's where we got surprised”*; and *“I wish the project didn't end so sudden”*, were shared by many.

The high number of CADs that were never able to even launch the business during the course of PROFIT+'s performance period speaks to the deficiencies in activity design and the lack of establishing serious selection criteria for CADs. It is no surprise that people with very limited financial means, as well

as no or limited business experience or entrepreneurial drive have a hard time establish themselves as a CAD.

Some inactive CADs could have benefited from a longer engagement with PROFIT+ and/or a grant to build a store, but the principle weakness of the activity was that the selection criteria for who PROFIT+ trained to become a CAD were not well defined or thought through. While some succeeded, it is challenging to succeed in operating a business with limited or no financial resources to launch the business, and no or limited previous experience in business.

CAD HIGHLIGHT: MS. SYLVESTER IN CHIPATA DISTRICT

Ms. Sylvester joined PROFIT+ in April 2016 when she was 20 years old. She lives with her sister and does not have access to land to farm or any other way to generate income. She was chosen through her community women's club despite having no farming experience or business skills. Through PROFIT+, she obtained training on business management, lending and savings, marketing and agribusiness. At the time when she joined, PROFIT+ had phased out support for demo plots and she did not receive a grant to launch her business. Thus, when she was chosen to become a CAD, she did not have the funds to build a shop and therefore never launched her CAD business. While she was connected to a seed company, the relationship did not move forward without a proper storefront. In less than a year, her involvement with PROFIT+ came to an end when the project phased out. While she said the trainings from PROFIT+ taught her skills, she did not get enough training and support to launch any business. The project phased out soon thereafter and still today, she has not been able to build a shop. Ms. Sylvester's case illustrates how poorly CADs were selected: she had 1) no income or way of making money to build a store front, 2) no seed capital to launch the business, and 3) no or little previous business experience. Her less than one-year involvement in PROFIT+ was too brief and the interventions did not sustain as part of her lifestyle.

3.2.4 ACTIVE CADS

At the time of this evaluation, only 42 percent of trained CADs continued to operate a CAD business two and a half years after the completion of PROFIT+. In both Lundazi (53 percent) and Petauke (51 percent), a little more than half of trained CADs are operating a dealership, while the numbers are lower in Chipata (41 percent) and just one quarter of those trained in Katete (26 percent) are currently operating a dealership (see Annex 5, Table A). The following section discusses current business activities, challenges and progress that operating CADs reported.

Prior to their engagement with PROFIT+, the majority of CADs were farming (79 percent) as their primary source of livelihood. According to CADs, it is rather common for women in rural areas to engage in small-scale trade; and 22 percent of female CADs had a small trading business before they became a CAD (the corresponding number for male CADs is 11 percent). Hence, other than some experience in small-scale trade, most CADs had very limited experience in business dealings.

Most CADs started the agro-dealership with support from PROFIT+. About two thirds of CADs started their agro-dealership with the support of PROFIT+; while the remaining one third already had a CAD business when they started working with PROFIT+. More female CADs (69 percent) than male CADs (59 percent) started their agro-dealership following support from PROFIT+. While this number

appears to be impressive, the reality is that there were more male CADs that already had agro-dealerships prior to PROFIT+. The majority of women (78 percent) started their CAD business in 2015 or later, compared to 57 percent of male CADs (see Table B in Annex 5). In general, CADs that started their business later, had less time to obtain support for their business from PROFIT+. In FGDs and KIs with CADs, the majority of CADs shared that the period of support was too short.

CADs appreciated the agricultural and business training PROFIT+ offered. Almost all CADs (99 percent) received agricultural and business training from PROFIT+. The trainings offered under the project were immensely popular; 97 percent of CADs found the business training to be valuable, and 88 percent found the training on how to operate the business as the most valuable support they received from PROFIT+.²⁵ On average, project participants met with PROFIT+ once a month, but some CADs met with PROFIT+ as often as once a week. FGDs, KIs with CADs and comments in the CAD survey reinforce the sentiment that agricultural and business trainings were immensely helpful. One CAD noted, *“PROFIT+ enlightened me a lot, I have management skills and that has helped my business.”*

CADs noted they are still using the agricultural techniques and conservation farming approaches taught under PROFIT+ to improve the yield on their farms. For instance, one female CAD outside of Chipata noted that before she became a demo host farmer for PROFIT+ in 2013, she cultivated only maize and groundnuts on her 5-hectare (HA) farm. Following PROFIT+'s conservation farming training, she is cultivating three times as much maize and groundnuts on less land (3 HA) as she did previously and has diversified her crop to include sunflowers and soya beans (on the 2 HA she previously farmed maize and groundnuts on). CADs are also using the knowledge they learned about farming and inputs under PROFIT+ to educate and inform their clients. While CADs do not charge for the advice to the community, some feel that they are increasing the sale and provides added value to their customers. Since PROFIT+ ended, CADs have obtained information about agricultural practices and input primarily from the Ministry of Agriculture's extension agents, farm field days and agricultural shows, radio and TV, and their input suppliers. However, many (40 percent) still rely on the information that they received from PROFIT+ as their primary source of information about farming and inputs.

Although the business management training was very popular, many still felt that it ended too soon. One CAD shared *“With PROFIT+, we got great training to help us know how to run our businesses, even though most CADs stopped [their business]. I feel PROFIT+ left before we could stand on our own.”* While it may be common in development projects for participants to desire more training and support, under PROFIT+ some CADs started their agro-dealership late in the project and therefore had limited time to participate in all the trainings. Many CADs felt that they were in the middle of the training when PROFIT+ ended and that *“the lessons didn't mature enough to take hold”*, as one CAD put it.

Since PROFIT+ ended, two third of CADs have participated in more agriculture trainings and obtained other support from USAID or other donor programs (e.g. Care, SNV, GIZ, Conservation Farming Unit (CFU) and Musika). Musika, a Zambian non-profit, currently organizes monthly training sessions on entrepreneurship, gender, and day-to-day basics, which a group of female CADs the evaluation team talked to, found to be good refresher courses from what they learned under PROFIT+. Similarly, prior to PROFIT+, many CADs mentioned that they were already trained by CFU lead farmers in agricultural practices. After PROFIT+ ended, SNV also appeared to have a program that resembles PROFIT+ in many

²⁵ 7 percent found linkages with input suppliers most helpful; while 1 percent found the demo plot most helpful and 4 percent the IIP grant most helpful.

ways. One CAD shared that his business was struggling when PROFIT+ ended in 2017, but that he joined SNV, “After the business went down, SNV came to revive it in 2017 just after PROFIT+ left and it is now fully operational. SNV provided seeds for the demo plot, taught about business, and linked me to input and output buyers. It’s a family business and we have now completed the construction of a second CAD shop”.

3.2.5 SELLING INPUTS

CADs sell primarily seeds, and to a lesser extent other agricultural inputs. Most CADs sell inputs to smallholder farmers in their local community. Almost all CADs sell seeds (97 percent), while it is less common for CADs to sell fertilizer (40 percent), agricultural equipment (44 percent), veterinary products (55 percent) and agricultural chemicals (75 percent). While visiting agro-dealerships, the evaluation team found that CADs sold seeds in prepackaged bags, but it was less common to sell other inputs, and to the extent that they did, the CADs opened up prepackaged bags to sell fertilizers and agricultural chemicals in smaller quantities, typically to use for vegetable gardens.

CADs shared in interviews with the evaluation team that they sold seeds on consignment for the seed companies. Thus, seed companies delivered the seed to their store, collected payment after the CADs sold the seed and collected unsold seed at the end of season free of charge. While some CADs feel that their profit margins for selling seeds (10-12 percent) are rather small, the financial risks for the CADs are limited, and the CADs do not need capital up front or to pay for inventory. Furthermore, the average profit margins for fertilizer (30 percent), agricultural chemicals (49 percent), agricultural equipment (36 percent) and veterinary products (48 percent) is significantly greater than for seeds.²⁶ However, CADs typically have to purchase inputs such as fertilizers, agricultural chemicals and equipment in cash, which makes it harder for them to afford to carry other inputs in the store. Women are less likely to carry inputs other than seeds when compared with men (see Table C in Annex 5). While there is no known reason for why female CADs carry more limited variety of inputs, possible reasons may include more limited access to capital, connections with fewer input suppliers, or that they have less time to dedicate to their business.

3.2.6 LINKAGES WITH INPUT SUPPLIERS

CADs value and sustain linkages with input suppliers fostered under PROFIT+. Linkages between CADs and input suppliers was a key feature of the CAD model. The linkages with input suppliers allowed CADs to access inputs to sell in their store, hence it was a vital component of the business model. The majority of CADs (88 percent) obtained support from PROFIT+ to connect with an input supplier, assistance the CADs perceived to be valuable. One female CAD shared that “PROFIT+ linked me to input suppliers and this has helped me a lot, this has given me much exposure and it has helped me know how to approach farmers, deal with competitors and run the business.” Active CADs have overwhelmingly maintained and sustained these relationships with their suppliers (86 percent).²⁷ One quarter of CADs maintained the input supplier PROFIT+ connected them to and had started working with at least one more supplier. Hence, some CADs were entrepreneurial and secured relations with other suppliers or accessed linkages through other development projects. Yet, some CADs were looking to access linkages to other agro-dealers but did not know how. Under PROFIT+, CADs obtained linkages to primarily seed suppliers (95

²⁶ Indicates mean profit margins during the peak period of sales as reported by active CADs in the CAD survey.

²⁷ 86 percent of the CADs used the same supplier(s) as PROFIT+ connected them to; 62 percent of CADs use just the same suppliers, while 24 percent use the same supplier and additional suppliers. At the time of the survey, the mean number of suppliers was 4.1 for male CADs and 3.3 for female CADs.

percent). Outside of this, male CADs were, to a greater extent, linked to agricultural chemicals (68 percent), fertilizer (36 percent), and agricultural equipment (27 percent) input providers when compared with female CADs (see Table D in Annex 5).

The evaluation team met with several input suppliers who worked with PROFIT+. The input suppliers noted that they initially worked with a larger number of CADs but have reduced the number of CADs they supply. Input providers noted that they stopped supplying CADs because they found a lack of entrepreneurial skills, trustworthiness, and creditworthiness. One input provider shared that his company used to work with 12 CADs but was now only working with four that were the most honest in business and had good repayment records. As input suppliers screened CADs, some CADs lost their suppliers, and for some that was the end of their business. One female CAD who rented a storefront to start a business under PROFIT+ shared: *“after PROFIT+ left, I had some challenges; the suppliers stopped trusting us and put up strict conditions that were hard for us to meet. I had plans to build a good and permanent business but that was hard, instead I had to stop my business.”* Another CAD in Katete who started an agro-dealership but also had to close it shared *“my shop ran well, but then my input suppliers made the conditions harder and stopped supplying me because some agro-dealers didn’t pay their suppliers.”*

CAD HIGHLIGHT: MS. MALIA IN LUNDAZI DISTRICT

Ms. Malia was introduced to PROFIT+ through her village women’s group in April 2016. She was not an original demo host farmer who became a CAD, but due to her diligent work producing high yields of maize, her women’s group recommended her to join the project.

To launch her CAD business, Ms. Malia used income from her maize farming, as well as took out a loan from her church group, to build a storefront. In 2016, PROFIT+ linked Ms. Malia to an input provider, NEZI Investments, for chicken feed. Today, she still is one of only four CADs from PROFIT+ that NEZI works with. According to the owner of NEZI, Ms. Malia is extremely trustworthy and determined. In addition to selling NEZI’s chicken feed, she is also using the feed to raise chickens to sell, holding 400 chickens in any given year. During last year’s farming season (November to January), she made 13,000 Kwacha (\$983) selling maize, inputs, and chickens.

Despite her successes, she has run into a number of hardships. Through PROFIT+ she was linked with three input providers, including Seed Co., with whom she had a great relationship. However, Ms. Malia’s sister gained access to her account, used it, and refused to repay Malia or Seed Co. (still owing Seed Co. 18,000 Kwacha (\$1,363) today). As a result, Ms. Malia’s account with Seed Co. was suspended. Since then, Ms. Malia has begged her sister to pay back the money to Seed Co. but to no avail. Her sister has even threatened Ms. Malia’s life, telling her never to ask for payment again. Within the same year, Ms. Malia’s storefront was robbed, whereby many of her seeds were stolen. Despite all of this, Ms. Malia is persisting, and her business is still going well. Ms. Malia is determined to build stronger relationships with NEZI and other companies like Pannar and Pioneer to secure inputs. Ms. Malia’s husband, a schoolteacher, is also supportive of her business venture. In the next few years, she expects to expand her business, grow the shop, and bring in drip irrigation to her farm. Ms. Malia’s story is one of determination, strength, and sustainability from the PROFIT+ project.

3.2.7 LINKAGES WITH OUTPUT BUYERS

Sustained linkages with output buyers have had mixed results. PROFIT+ recognized that rural communities lack access to input and output markets. Therefore, PROFIT+ sought to equip CADs to not just sell inputs, but also serve as aggregators of agricultural output. To this end, PROFIT+ connected CADs to larger output buyers to serve as aggregators. PROFIT+ connected almost half of the active CADs with output buyers, and one third of active CADs are still aggregating for the output buyer PROFIT+ linked them with.²⁸ Two-thirds of CADs that do still aggregate today, report that they aggregate more than when PROFIT+ ended. Aggregators shared also that access to finance and transportation are the biggest challenges they face when aggregating. CADs that did aggregate reported that the farmers they aggregate from have adopted better farming techniques and purchase more input to improve yield, have less post-harvest loss, cultivate more land and make more money (See Table G in Annex 5).

One of the larger PROFIT+ output linkage initiatives was to connect CADs to aggregate grains for Cargill.²⁹ However, for reasons unrelated to PROFIT+, Cargill is no longer operating in Zambia as an output buyer, so those connections formed under PROFIT+ came to an end immediately. PROFIT+ also connected CADs to local processors and IIP Fund recipients such as NEZI, Share Africa Zambia, COMACO and Naniwe.³⁰ In interviews with the evaluation team, several of these companies shared that after PROFIT+ ended, it had been hard to sustain relationships with a larger number of CADs, but that to the extent they worked with a few CADs as aggregators, they were highly selective in who they continued to work with.

3.2.8 BUSINESS AFTER PROFIT+

Active CAD businesses are doing better than when PROFIT+ ended. For the majority of active CADs, their business is doing better than when PROFIT+ ended. Most CADs have more clients and sell more input than they did when PROFIT+ ended; and two-thirds of the CADs have expanded their agro-dealership.

Three quarters of active CADs report that they currently have more clients than they did at the end of PROFIT+ (see Table H in Annex 5). Almost half of the CADs (46 percent) have one or more employees, which is 10 percent more than when PROFIT+ ended. However, only male CADs are employing more staff while the number of female CADs with an employee has not changed (see Table L in Annex 5). While the type of inputs active CADs sell has remained pretty much the same since PROFIT+ ended (compare Table C and Table E in Annex 5), active CADs are selling a greater quantity of inputs compared with what they did when PROFIT+ ended. Seeds remain the main type of input CADs sell. The majority of active

²⁸ See Table F in Annex 5. Note that in total 54 percent of active CADs are aggregating output. This number includes CADs that were connected to an output buyer by PROFIT+ and CADs that have secured connections with an output buyer through other channels than PROFIT+.

²⁹ “On the grain trading side, Cargill has emerged as a key partner that invested approximately \$530,000 in 2016/17 and is expected to invest another million USD during the marketing season through a network of rural aggregators that were built based on the CAD model. 374 Cargill CADs were created in a significant, market-driven scale-up initiative that contributed to job creation, investments, trade, and productivity targets.” PROFIT+, Annual Performance Report No.5, October 1, 2016-May 9, 2017, page 5.

³⁰ USAID. PROFIT+, Annual Performance Report No.5, 2017, page 5.

CADs report that they sell more seeds (68 percent); more agricultural chemicals (66 percent), and more veterinary products (73 percent) than they did at the end of PROFIT+. ³¹

Two-thirds of the CADs have expanded their agro-dealership in the last two years since PROFIT+ ended. However, more male CADs have expanded their business (75 percent), while business for half of the female CADs has remained the same (see Table J in Annex 5). The CADs expanded their businesses by increasing the kinds of products and services they offer (56 percent), expanded their building at the current location (42 percent) and/or opened up additional agro-dealership(s) at new locations (42 percent). One CAD the evaluation team met with had just opened up his third shop, and one CAD had opened up six shops. The evaluation team met with several CADs that had diversified their business and started new businesses. In fact, almost half of the male CADs (48 percent) and one quarter of the female CADs have in the last two years expanded their business activities into other lines of businesses, notably grocery shops and trading. One female CAD shared *“I was blank about so many things before PROFIT+ enlightened me how to run a business and how to grow crop the right way. I’ve expanded my business and own now also a bicycle spare part shop.”* The CADs exhibit a rather positive outlook on their agro-business activities, as almost all of them (95 percent) said that they plan to expand their business within the next two years. Relatively few active CADs have a smaller business than they did two years ago (8 percent), but as discussed above, the failure rate of CAD businesses that launched and had to close is rather high (36 percent of CADs that launched are currently not operating). ³²

Almost all CADs shared that their clients’ productivity increased since they started purchasing inputs. As most CADs primarily sell maize seeds, CADs reported that maize was the crop that they had witnessed the largest productivity increase in. While this evaluation did not assess crop productivity increases, anecdotally, several CADs shared how they themselves had increased their productivity since they joined PROFIT+.

3.2.9 CONSTRAINTS IN FINANCE AND START-UP CAPITAL

Access to finance remains a major challenge under PROFIT+. Active and inactive CADs identified access to finance as a major challenge they face to operate and grow their business. PROFIT+ tried in various ways to address the access to finance gap for CADs, but given the high interest rates and the financial institutions limited experience and presence in rural areas, PROFIT+ did not manage to connect CADs to financial institutions. ³³ Given the challenging financial environment, PROFIT+ deployed several other ways to enable CADs and other project beneficiaries to access finance, including technical support,

³¹ See Table H in Annex 5 for further details. While there are some differences between increases and decreases in sales between male and female CADs, it’s important to recall that the numbers of respondents for each sub-category is rather small.

³² 76 active CADs + 43 CADs that started operating but ceased operations = 119. 43/119=36 percent.

³³ USAID. PROFIT+, *Annual Performance Report No.5*, 2017, page 26 states: “In general, PROFIT+ has much more success in leveraging investments and providing in-kind credit options than in facilitating formal credit linkages. This is due to the lack of financial literacy among firms, farmers and other stakeholders. For example, most beneficiaries found the prospect of a 40 percent APR charged by banks to be unreasonable. One of the reasons for this is the higher financial expenses incurred by Zambian financial institutions. The Bank of Zambia prime lending rate is 15.5 percent, which is driven largely by a 20 percent inflation, a government debt to GDP ratio of 31 percent, and current account deficit of -3 percent of GDP. These macroeconomic factors make it expensive for institutions in Zambia to access funding and this expense flows down to the interest rates offered to PROFIT+ beneficiaries.” PROFIT+ connected some project beneficiaries (farmers, not necessarily CADs) with linkages to micro finance institutions to purchase input and irrigation equipment, see PROFIT+, *Annual Performance Report No.5*, October 1, 2016-May 9, 2017, page 17.

to establish a warehouse receipt system (WRS)³⁴, the creation of savings and internal lending communities, further discussed below, and the IIP Fund mechanism, also discussed below. Linkages to finance was the least commonly cited form of support CADs obtained from PROFIT+ (33 percent), and of those that obtained such support, less than half (44 percent) found it to be valuable.

Based on the CAD survey, the majority of CADs (72 percent) said that access to finance is the biggest challenge they face in their business. Lack of assets that financial institutions accept as collateral (64 percent) and too high interest rates (16 percent) were the most commonly cited reasons for why they can't access finance. In the last two years since PROFIT+ ended, only 7 percent of active CADs had obtained finance from a micro-finance institution.³⁵ This is because microfinance institution interest rates are reported to be very high in Zambia, as high as 50 – 70 percent interest.

³⁴ At the time, PROFIT+ came to an end, Zambia Commodity Exchange (ZAMACE) was not yet operational and “government interference in maize markets through export bans has continued to present challenges as maize is the only crop in the country that can provide sufficient volumes for the exchange to flourish” PROFIT+, Annual Performance Report No.5, October 1, 2016-May 9, 2017, page 22.

³⁵ In addition, 13 percent obtained finance from their supplier, 33 percent obtained finance from a SILC, and just 3 percent from family or friends; non obtained finance from a commercial bank. 46 percent of the CADs did not obtain any kind of financing for their CAD business in the last two years.

Farmer Input Support Programme (FISP), a GRZ Initiative to Help Small-Scale Farmers

In 2002, the GRZ launched the FISP, where the Ministry of Agriculture distributed subsidized input to small-scale farmers. However, according to [Feed the Future](#), after 15 years of implementation, crop yields remained low and rural poverty remained high, although the program accounted for about 40 percent of the annual national agricultural budget. The program was also plagued by racketeering and crowded out private sector agro-dealers. Following consultations with [Indaba Agricultural Policy Research Institute](#) and other stakeholders, the Government retooled the program and launched e-FISP, or the e-voucher system. Under the e-voucher system, participating households were issued voucher cards to swipe at authorized agro-dealerships. First piloted in the 2015-2016 farming season, and implemented nation-wide in 2017-2018, the e-voucher system reduced the Government's cost for procurement, transportation and storage, increased private sector participation, and improved beneficiary targeting. However, in 2017-2018, the Government delayed funding the e-FISP program, which resulted in farmers' accessing the subsidized input late in the farming season. The following season, 2018-2019, the Government announce that participating agro-dealers should issue farmers with valid voucher cards input on credit, and that the Government would repay the agro-dealers against FISP invoices. However, as of mid- November 2019, the GRZ has not repaid the agro-dealers. According to the Agri Business Association of Zambia, the Government owes agro-dealers affiliated with the association K400 million Kwacha (\$29,300,000).

According to PROFIT+'s Year 5 Annual Performance Report, 33 CADs obtained approvals to participate in the e-vouchers program to disseminate government fertilizer subsidies. A number of CADs shared with the evaluation team that the Government owed them substantial amounts of money for the e-vouchers. One active CAD shared that the Government owes him K13,000, which is "paralyzing" his business. Another CAD shared that her relationship with her input supplier is strained as she owes them K20,000 for input she distributed under the e-voucher program. Yet another CAD shared that the Government owes him around K60,000 from the e-FISP program, and "the e-vouchers destroyed my aggregation business since I had to use my money from my aggregation business to buy input for my e-voucher clients". Even worse, three CADs reported that they went out of business as a result of the Government not repaying them for the e-FISP. One now inactive CAD in Chipata shared that the Government owes him K13,000 for input under the e-voucher program and that he now has no input and had to close his store. Thus, a government input subsidy program that seemed quite promising and involved the private sector in distribution, when left unfunded, had severe repercussions for participating small businesses. Despite FISP having no connection with PROFIT+, CADs who participated in FISP ended up much worse off as a result.

3.2.10 HOUSEHOLD SPENDING AND DAY-TO-DAY ACTIVITIES

Active CADs spend more money on their families, and women are more empowered in the household and their communities. 70 percent of active CADs are able to spend more money on their families since they started the agro-dealership (see Table M in Annex 5). The vast majority of CADs spend more money on school fees (93 percent), and many (61 percent) spend more money on food for the family. Furthermore, more women (41 percent) use the additional income for home improvement

than men do (25 percent). CADs spend also more money on health care, farm equipment, farm animals and consumer durables (see Table N in Annex 5).

As CADs make money and have some disposable income to spend on their family, we asked CADs how they make financial decisions in their home. The majority of CADs (67 percent) decide how to spend the profit from the CAD business together with their spouse. Interestingly, half of the female CADs (53 percent) decide on her own how to spend the money, while few male CADs (14 percent) make decisions on how to spend the money without consulting his spouse.³⁶ Thus, about half of the female CADs consider the profit they make in their agro-dealership to be their own, which they can decide how to spend.

The majority of female CADs (78 percent) said that they own the shop themselves, while the rest (22 percent) own the shop with their spouse or other family member.³⁷ While the majority of women own the shop themselves, in FGD and in interviews, female CADs shared that their husbands supported their business venture and would often help them with the store. By operating the agro-dealership and making money, women are more empowered to engage with their husbands in household decisions-making and are less dependent on their husband's income. A group of female CADs noted that they had fewer conflicts with their husbands since they started the CAD.

Female CADs shared how the training and the ability to run their own business made them feel empowered. One female CAD shared *"I was with PROFIT+ for two years and after they left, I have continued what they taught us, even though they were in the middle of teaching us business management when they left, so I didn't get much. But I see great results, I am more courageous to approach people for help like suppliers and agricultural agents. My only challenge is access to finance."* Another female CAD shared how the training empowered her to *"source and bargain for a good price."*

Active CADs are more involved in community organizations than they were before they became a CAD. 42 percent of active CADs are more involved in community organizations as a member, while half of the active CADs are more involved in community organizations as leaders (see Table O in Annex 5). A group of female CADs outside of Chipata shared with the evaluation team that *"being a CAD has helped us become more confident and take on more leadership in the community. We were involved [in community groups] before we became CADs, but we are now more well-known in the community."*

Women are traditionally responsible for household work and caring for the family. However, when operating their own CAD business, they have less time for household responsibilities, and need to be able to dedicate time to their business activities. For some female CADs, their household responsibilities have not changed since they started operating the CAD, and for some it has even increased (see Table R in Annex 5). However, 44 percent of female CADs spend less time on household responsibilities compared with 18 percent of men. For female CADs that engage in less household responsibilities since they started operating their agro-dealership, their spouse and other family members have taken over some of her previous responsibilities (see Table S in Annex 5). As women make money and feel empowered to make decisions on how to spend the money, some are also hiring help in the household to free up time to dedicate to the business. One female CAD shared *"After PROFIT+ left, I've been able to apply the knowledge*

³⁶ See tables O and P in Annex 5. As shown in tables P and Q whether the decision concerned a small or larger investment made almost no difference in how CADs make financial decisions.

³⁷ 71 percent of male CADs said they own the shop themselves. See Table Q in Annex 5.

I got and this has improved my business. Other agro-dealers have closed, but I committed myself and this has helped me take my children to school, I can even afford a maid to help me with house chores.”

3.3 SILCS

SILCs, an approach developed by Catholic Relief Services (CRS), empower community members to form groups, pool their savings and lend each other money. In the SILC model, community members are trained to form and manage SILCs. CRS have implemented the SILC model throughout sub-Saharan Africa and beyond and was contracted by PROFIT+ to train CADs to become SILCs facilitators in their own local communities. A recent ex-post evaluation of the SILC model from projects in Burkina Faso, Senegal, Zambia and Uganda, found the model to be highly sustainable. The evaluation found that a year and a half after the end of the project, new SILC groups continued to be form. There were 50 percent more SILCs compared to the end of the project, and only 5 percent of groups had stopped functioning.³⁸

During the first couple of years of PROFIT+, CRS trained DHF and other project participants in Katete and Petauke to become SILCs agents. Mawa, a USAID funded project implemented by CRS and others, trained SILCs agents in Chipata and Lundazi. The SILC agents were trained in how to form and support SILC groups, as well as entrepreneurship skills for input and output markets. When PROFIT+ shifted from the DHF model to the CAD model, PROFIT+ recruited SILC agents to become CADs. PROFIT+ and Mawa collaborated to ensure that SILC agents trained under Mawa could be integrated into PROFIT+'s CAD model.

Through the saving and loans trainings, CADs help community members to 1) start and establish rules for SILCs, 2) organize meetings, 3) manage bookkeeping, and 4) facilitate the annual share-out, when SILC members get back their investments with interest. The CAD survey found that the majority of CADs (79 percent) currently operating an agro-dealership are still involved with at least one SILC group, which started under PROFIT+.³⁹ While a high percentage of both male (73 percent) and female (88 percent) CADs were still involved with SILC groups formed under PROFIT+, more women CADs are engaged in SILCs. The majority of currently operating CADs (82 percent) have clients that are a member of a SILC, hence SILCs provide the CADs with a reliable customer base. In addition, one third of active CADs reported that they had obtained a loan they used for their business from a SILC in the last two years.⁴⁰

Several CADs shared that after PROFIT+ ended, they still managed to start new additional SILCs. While a couple of CADs noted that some of the SILCs they started had stopped functioning when members defaulted, CADs were overwhelmingly positive about the SILCs. CADs shared that while there had been some savings and lending groups in their communities before they introduced the SILC model, some were poorly managed, and that the SILCs provided much more structure to sustain the savings groups.

SILCs are popular as the saving and lending scheme provides relatively easy access to capital, and the interest rates are considerably lower than other options, such as microfinance institutions or money

³⁸ Zoe Sutherland, Megan Gash, Daniel Joloba, 2019. Ex-post evaluation: Expanding Financial Inclusion in Africa Final Report https://www.crs.org/sites/default/files/tools-research/crs_evaluation_report_final.pdf (Note that the data collection for the Ex-post Evaluation took place in Uganda, not in Zambia).

³⁹ Most CADs currently operating an agro-dealership started and trained SILC groups (85 percent), while 15 percent said they are a member of a SILC group started under PROFIT+.

⁴⁰ More female CADs (41 percent) than male CADs (27 percent) obtained a loan for their business from a SILC in the last two years.

lenders. SILCs also provide short term lending, where loans are typically due within a month. As a result, most members of SILCs use the loans to operate small trading businesses, where they purchase food stuff or goods in town and sell in their rural communities. SILC members shared that the loans have allowed them to generate more income, which they invest in their family's well-being, school fees, and inputs. While the increase in income may be rather modest, SILC members reported that by regularly saving, they have stabilized their household finances and are not as vulnerable and exposed to financial shocks.

According to PROFIT+'s final Annual Performance Report, CADs had formed 1,163 SILC groups with a total of 28,039 members, of which 84 percent were women, at the end of the project. While this evaluation team did not assess the number of existing SILC groups, through KIIs and FGDs with SILC members, the team confirmed that the majority of SILC members are women. For example, the team met with one SILC group with 35 members, of which 25 are women. Another group has 24 members, 21 of which are women. However, while the wife is often the member, she might also invest her husband's money in the SILC, if the husband is so inclined. Hence, the SILCs can help both men and women save money, even though women are more likely to actively engage in SILCs.

Female members of SILC groups shared that while they still have the same family, household and farming responsibilities as they did before they joined the SILC, their influence on decision-making in the home has changed as they started making more money. As they contribute money to the household, the women were able to bring ideas for how to use the money to their husbands, and they were more likely to make decisions together. While several women noted that their husband could still decide how to use family income on his own, they had gained a greater voice in the matter, and they engaged in more conversations with their husband about how to spend the money. In addition, a group of female CADs noted that in their SILC groups, female SILC members had less conflict with their husbands because they had access to their own funds, which gave women more autonomy to address immediate needs in their household.

While CADs do not receive direct monetary compensation from supporting SILCs, their involvement helps their CAD business in several important ways. During SILC meetings, CADs can share agricultural advice and promote their CAD business. CADs build relationships and trust with the SILC members, relations, which they can convert into a customer base. As SILC members make money, members can invest in inputs with additional disposable income. Almost all CADs currently operating a dealership (96 percent) shared in the CAD survey that SILC members are more likely to have money to purchase inputs than farmers in similar positions that are not members of SILCs. SILC members noted that they prefer to purchase inputs from "their CAD" as they trust the CAD is selling certified seeds and quality inputs, as opposed to some vendors that sell adulterated inputs. In addition, the close proximity to the CAD cuts down the cost of traveling to town to access inputs. As a result, female CADs serve more female clients than male CADs do⁴¹; and the SILC groups, which are predominantly made up of women, are part of female CADs' loyal customer base.

As SILC members typically need to repay their SILC loans within a month, the loans are typically not feasible for purchasing inputs. CADs shared that while they are generally reluctant to extend credit to

⁴¹ 47 percent of female CADs stated that most of their clients in the previous month were women, and 34 percent said that about half of their clients were women in the previous month. 39 percent of male CADs said that most of their clients the previous month were women, and 30 percent said that about half of their clients were women in the previous month. More male CADs said that most (32 percent) or about half (30 percent) of their clients in the previous month were men, compared with women CADs (19 percent most of their clients were men; 34 percent about half of their clients were men).

customers, they do extend credit to members of “*their SILCs*.” The SILCs do annual share-outs, typically in November or December to coincide with the planting season. SILC members that wish to access inputs before the annual share-out, may access inputs on credit from the CAD that formed the SILC. In those instances, the CAD has insight into each member’s finances and is present, even managing the annual share-out, and is therefore able to recover their loan at the time of the share-out.

Some of the CADs who are currently not operating a dealership managed to start SILCs. Until today, many CADs reported that many of the SILCs that they started are still active. Some still help to support one to three SILCs while others support as high as six or eight active SILCs. These CAD leaders continue to run SILCs as a service to their community and are hoping to start or re-launch their agro-dealership, at which point the SILC members will become their customers.

The SILC model has proved to be sustainable beyond the life of PROFIT+. Existing SILCs continue to operate and follow the initial training under PROFIT+ and CADs continue to form new SILCs. The relationship between the CADs and the SILC members is also mutually beneficial; the CADs expand their customer base, and the SILC members obtain support to manage the SILC, receive business and agricultural advice, and access to inputs on credit at the beginning of the planting season.

3.4 PCS

In December 2015, PROFIT+ started supporting CADs to come together and form PCs. To become PCs, PROFIT+ wanted CADs to collaborate and pool funds to invest in out-grower schemes, as well as engage in input distribution, output aggregation or agro-processing. CADs that were interested in forming a PC, identified other CADs in their area to partner with, and registered the PC as a limited liability company. PROFIT+ supported the formation of 16 PCs, each made up of six to 13 CADs. PROFIT+ provided additional training in business registration, corporate governance, and business planning, as well as linkages with input or output companies. The CADs had to self-finance the cost of business registration and other associated costs to establish the business, however, PROFIT+ informed PCs that they could apply for grants for capital investments or initial working capital from the IIP Fund (discussed further in section 3.5). The possibility of funding from the IIP Fund was a major incentive for CADs to form PCs. In 2016, five of the 16 PCs received a grant of about K90,000 (\$6,500) from PROFIT+’s IIP Fund as initial working capital or for capital investments.

A PROFIT+ project officer in charge of supporting the PCs shared with the evaluation team that the introduction and formation of PCs towards the end of the project was a challenge. There was not enough time to train and support the start-up of the PCs, and as the project came to an end, the PCs were left on their own too early. Many of the PCs were at such an early stage of the start-up process that they could not meet the requirements to obtain IIP Funding. The PROFIT+ officer noted that the short period of time that PROFIT+ had to support the launch of the PCs was “*a threat to their sustainability*.”

The evaluation team met with seven PCs in total, all of which had struggled and most of which were not functioning. In several of the PCs there were members that had not managed to start their own CAD business. These PCs were formed in late 2015 or in 2016. Besides being a CAD (most of them just for a year or two), they had very limited or no business experience. CADs were primarily motivated to form the PCs so that they could apply for an IIP grant. To register as a limited liability company, there is a

minimum nominal capital requirement of K15,000 (\$1,044).⁴² The CADs pooled their own contributions towards the capital requirement and the associated registration fees in order to register the PC.

Once registered, many PCs, some with support from PROFIT+ staff, developed proposals for an IIP grant. Several of the PCs applied for an IIP grant to obtain agro-processing equipment. However, by the time the PC submitted the grant application, PROFIT+ was already coming to an end. As a result, the PCs did not receive the IIP grant for the capital investments, and without funds, the collaboration fizzled, and the PC never ended up starting any activities. Below are stories from a variety of PCs that the evaluation team met with:

- A PC in Lundazi was formed in 2016 by 13 CADs (seven men and six women), to establish an animal feed processing plant. The PC obtained funds from PROFIT+ to attend the agricultural expo in Lusaka to meet with vendors of feed processing equipment. The PC submitted a grant application to PROFIT+ to purchase machinery for feed production, which according to the PC was approved. However, PROFIT+ came to an end soon after the grant application was approved and thus, funds were not disbursed. Without any external funding, the PC was unable to launch any commercial activities and is currently dormant.
- A PC in Chipata was started by 10 CADs (seven men and three women) in late 2016 to produce soya food products. With assistance from PROFIT+, the PC started to develop a proposal to acquire processing machinery in early 2017. However, PROFIT+ came to an end before the PC completed the proposal, and the PC has not met since PROFIT+ ended in 2017.
- Another PC in Chipata was started in late 2015 by six CADs (four men and two women) to launch an out-grower scheme and oil processing business. Like other PCs, the PC applied for an IIP grant for an oil expeller, but PROFIT+ came to an end before the grant application was reviewed. Without the external funding, the PC never began operation.
- A PC in Petauke was formed in 2016 by 12 CADs (10 men and two women). The PC did not receive an IIP grant from PROFIT+, but members of the PC pooled funds to purchase agricultural chemicals from a wholesaler in Lusaka. Because it was a bulk order, the wholesaler delivered the chemicals for free, which allowed the members of the PC to resell the product at a competitive price, while increasing their profit margin. Despite this seemingly advantageous collaboration, the PC did not repeat the bulk purchase or engage in any other business activities. The PC have not met in two years and the PC's Patents and Companies Registration Agency (PACRA) business registration was about to lapse. One of members shared that there was limited cohesion in the company "*we are all busy with our own shop*", and that the distance between them made it challenging to meet.

Many of these PCs used their initial start-up capital to put together the IIP grant proposals for other related business development activities. As a result, they have now dropped below the minimum requirements of K15,000 to remain a limited liability company. To date, many stated that they recently received notices from the PACRA that they will be deregistered and cease to exist if they do not stay above the minimum funding requirement.

⁴² "Patents and Companies Registration Agency." PACRA. Accessed October 25, 2019. <https://www.pacra.org.zm/#/html/Fees/2057>.

Two PCs obtained funding from PROFIT+ in the second half of 2016. However, as they received the funding so close to the end of PROFIT+, they obtained little training and support to launch their businesses. Considering that the members of the PCs had limited business experience, the PCs either failed or struggled. One PC obtained a K99,000 grant from PROFIT+'s IIP Fund to aggregate maize and purchase input for an out-grower scheme. However, the PC bought maize when prices were high, and had to sell the maize to their buyers at a loss. The members of the PC were "*discouraged*" and did not continue any business activities the following year. Representatives of the company shared that they "*were very ignorant about running a company.*" As the PC obtained the funding towards the end of PROFIT+, they received limited support and no additional business training or technical advice related to aggregation. The members of the PC felt that the lack of continued support from PROFIT+ contributed to the PC's downfall. One member stated, "*we were born when our parents were dying, we became orphans.*" The second PC obtained a greenhouse and started growing seedlings. However, the PC struggled to find buyers for the seedlings and lost money. While PROFIT+ had connected the PC to a buyer of dried fruit in Lusaka, the PC had not figured out their business model for how they were going to go from producing seedlings to delivering dried fruit. As the PC obtained the greenhouse towards the end of PROFIT+, there was very little time for any business or technical support to work out their business model. As a result, the PC felt that they "*were left hanging when PROFIT+ left.*" While this PC is in need of cash, they are still planning to utilize the greenhouse, but grow vegetables instead of seedlings.

Unlike all the other PCs the evaluation team met with, one PC based in Chipata continued and expanded its activities beyond the life of PROFIT+. The chairman of the PC obtained a greenhouse from PROFIT+ in 2013. The chairman gathered four other CADs and formed a PC in 2017, after the encouragement from PROFIT+. The PC was formed to start tomato processing company and was, according to the PC, promised funding from PROFIT+ for processing equipment. However, PROFIT+ came to an end before the PC obtained any grant. Unlike other PCs, this PC did not fold when they did not receive a grant. The chairman made the greenhouse and some of his land available to the PC. As the chairman holds formal sector employment, he has been able to provide capital for investments in the PC. The knowledge, resources and capital that the chairman was able to offer, sustained and launched the PC. The PC continues to grow seedlings in the greenhouse, has installed a solar pump and has established a piggery and a chicken hatchery. Members of the PC shared that although they didn't receive a grant from PROFIT+, they appreciated the training, support and business linkages they received under PROFIT+.

Overall, there was too little time left under PROFIT+ for the formation of most PCs to be sustainable beyond the life of the project. At best, PCs received a little over a year of support from PROFIT+, but in some instances just six months or less. Most members of the PCs had limited business experience, with some having only a year or two of experience operating a CAD business. They needed more time to work out their vision, business case and business model, as well as time to cement their relationships and business partnership. Hence, the members of the PCs needed guidance and support for a longer period of time than what was allowed under the short period that remained of PROFIT+.

Because the members of the PCs were all also starting up their own businesses, they had limited funds to invest in the PCs. As a result, without the injection of some startup capital from the IIP Fund, it proved even more difficult to launch a company. Some of the members of the PCs were probably motivated to launch the PC because of the possibility of obtaining funding through the IIP Fund. When they did not receive funding, the company fizzled.

CADs continue to collaborate with each other, although in a less structured way than PCs. Sixty-eight percent of active CADs reported that they regularly collaborate with other CADs to obtain lower prices or better services. CADs purchase input in bulk to get a lower price, collaborate to aggregate output, and consolidate cargo to reduce transportation costs. However, more men than women engage in these types of collective actions to obtain better prices. Differences in access to capital and networks between women and men may possibly contribute to this gender difference.

3.5 IIP FUND

In March 2013, PROFIT+ launched the IIP Fund. The Fund aimed to provide a risk-sharing platform for the introduction of innovative concepts and investments in the agricultural sector. PROFIT+ intended to use the grant mechanism under the IIP Fund to leverage \$50 million in increased investment in agriculture-related activities. This section explores, to what extent, the IIP Fund helped to stimulate private sector investments and expansion of the agriculture sector.

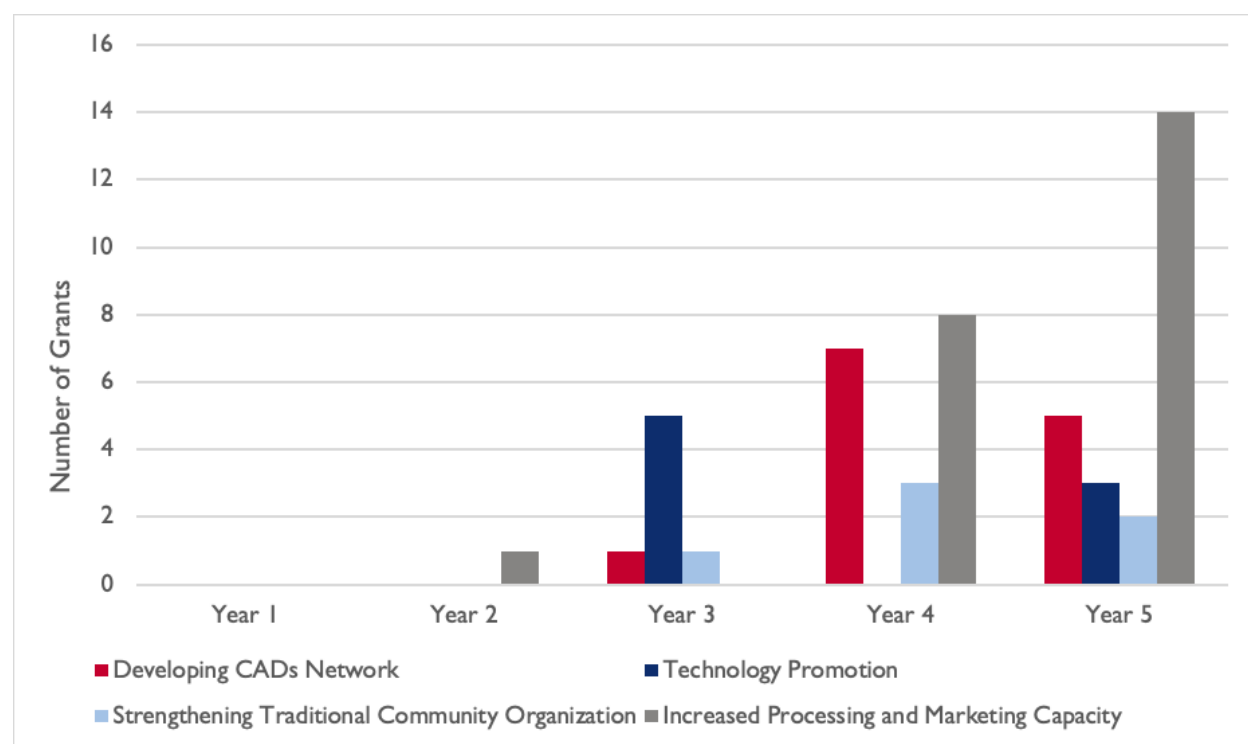
The evaluation team spent considerable time trying to understand the IIP Fund, how much was spent under the IIP Fund, and what type of activities and investments were funded. However, as the evaluation team had limited access to documents related to the IIP Fund, the overall picture of the Fund, the amount of money available and awarded, the selection process for grant recipients, and what was funded under the IIP Fund remains incomplete.⁴³

As a result, the team relied on KIIs with IIP Fund recipients themselves in the field to understand how the IIP Fund worked under PROFIT+. The evaluation team managed to conduct KIIs with 13 IIP Fund recipients, most noting that any form of grants helped their business. However, many grants in form of equipment seemed to be the least sustainable as most machines are no longer operational at the time of the evaluation in October 2019.

The IIP Fund recipient lists provided by USAID/Zambia outlines four broad categories of activities funded: 1) developing CADs network; 2) technology promotion (primarily seed production); 3) strengthening traditional community organizations; and 4) increasing processing and marketing capacity (see Figure 3). Based on the final Annual Performance Report, most activities were funded rapidly in the last two years (18 in 2016 and 24 in 2017, compared to seven in 2015 and one in 2014).

⁴³ The evaluation team had access to the following sources that mention the IIP Fund: 1) A spreadsheet entitled “IIP Fund recipients”, outlining IIP Fund recipients, amount and location. 2) The Annual Performance Reports (APR) years 1-5, which all mention the IIP Fund, but do not provide a complete overview of activities funded. The Annual Performance Reports for Year 4 and 5 state, “The table in Annex 3/6 (Annex 6 in the APR for year 4 and Annex 3 in the APR for year 5) details the grantees, the purpose of grants, location of activities, and values”. However, no annexes were included in the copies of the APR made available to the evaluation team. 3) Annual work plans for Year 1 and 3, both also mention the IIP Fund, but provide little details. 4) Finally, IIP Fund manual (approved January 4, 2013) was also made available, however, the IIP Fund manual provides information about the administrative process to approve grants, but not what should be funded or evaluation criteria for funding. It should also be noted that the person in charge of IIP Funds was one of the individuals that passed away before the evaluation was conducted.

Figure 3: IIP Grant Types by Year



During fieldwork, the evaluation team met with the following categories of IIP Fund recipients:

- CADs that received in-kind support for basic farming equipment, such as sprayers; a few that obtained support to build CAD stores; and others that received financial support to attend trade shows, and register their business;
- PCs that obtained start-up funding;
- Input companies that obtained funding to develop CAD networks;
- A community organization that obtained irrigation equipment and input for its members;
- PCs that obtained equipment for processing and trucks for aggregation and distribution;
- ZARI, which obtained funding for seed multiplication and training of seed inspectors.

Through project documents and KIIs, the evaluation team had the understanding that when PROFIT+ launched the IIP Fund, the staff developed an Annual Program Statement (APS) to solicit proposals from prospective grantees for implementing activities under the PROFIT+ project, focused on promoting growth of the six selected commodities: groundnuts, soybeans, sunflower, horticulture (tomatoes and onions) and maize. The hope was to receive proposed projects, which addressed a range of issues. These included but are not limited to improving access to finance and other services (storage, extension, improved inputs, mechanization, and new technologies) for smallholder farmers and value chain

participants, as well as the strengthening of current, and provisioning of new markets and marketing opportunities.⁴⁴

After developing the APS, an initial call for concept notes was announced so that local entities could apply to access the PROFIT+ IIP Fund. In the first year, two calls for concept notes were published with a total of 58 concept notes received. By end of 2013, six of the concept notes were approved to submit full applications for grant funding. In 2014, PROFIT+ reissued a call for concept notes, followed by two pre-concept note submission orientation workshops in Lusaka and Chipata. The pre-concept note submission workshops sought to take the applicant through the APS and explain in detail the PROFIT+ goals and objectives. The workshops were attended by more than 70 participants and a total of 51 concept notes were submitted, however, the PROFIT+ staff only managed to review 34. Thus, out of the reviewed concept notes, nine applicants were requested to submit full proposals and 25 concept notes did not meet the minimum standard and were rejected.⁴⁵

According to the first year's work plan, PROFIT+ intended to dedicate \$7.1 million to the IIP Fund. During the initial years of PROFIT+, funding from the IIP Fund was to a large extent used for training to implement PROFIT+. During the project's second year, around one million dollars from the IIP Fund was allocated for training on gender mainstreaming, business and agricultural practices for smallholder farmers, and training and support for demonstration host farmers.⁴⁶ In Year 3, the IIP Fund supported "*the roll out of capacity building efforts in Year 1 and 2, such as post-harvest handling (PHH) and aflatoxin training and initial demonstration efforts*" to a value over \$200,000. Based on the final IIP Fund Recipient lists provided by USAID/Zambia, \$1,200,000 (about K17 million) was allocated from the IIP Fund. The final IIP Fund Recipient lists does not include the training funds from Year 2 and Year 3, which indicates that at least \$2.4 million was spent from the IIP Fund. By Year 3, PROFIT+'s total funding was reduced from \$24 million to \$18 million.⁴⁷ The overall reduction in contract funding ultimately reduced the amount available for the IIP Fund, but project documents do not specify by how much.⁴⁸ Hence, based on available documentation, the amount of funds allocated under the IIP Fund still remains unclear.

⁴⁴ It should be noted that the evaluation team did not gain access to the APS documents.

⁴⁵ USAID. PROFIT+ Annual Performance Report Year 1 and 2. Note that the evaluation team does not have any information as to what these evaluation standards were, nor who the applicants requested to submit full concept notes were.

⁴⁶ USAID. PROFIT+ Annual Performance Report No. 2, 2014.

⁴⁷ USAID. Year 3 PROFIT+ Work Plan, October 2013

⁴⁸ USAID. PROFIT+ Annual Performance Report No. 3, 2015.

Prior to the evaluation team's fieldwork, very few documents were recovered on the IIP Fund for review. Despite receiving the IIP manual from USAID/Zambia, nothing was drafted on the purpose, selection criteria, expected outcomes or timeline of the IIP Fund. Year 1's Work Plan contains an extensive list of "potential areas for investment and support" the IIP Fund could finance, detailed in the text box below. The potential areas of funding are vast and there is no "theory of change" connecting these various areas of support. The IIP Fund intended to "provide a risk-sharing platform for the introduction of innovative concepts and investments in the agricultural sector". However, it is hard to see how some of the areas the IIP Fund funded, notably agricultural training for vulnerable subsistence farmers (productivity incentive grants), was "buying down the risk of innovative concepts"; rather it appears like IIP Funds were used for project implementation. It is the evaluation team's understanding, that following the change of management in December 2015, PROFIT+ then focused more of the IIP Funds on matching grants to reduce the risks of investments in the agricultural sector, which is what the IIP Fund was intended to be used for to start.

IIP FUND: POTENTIAL AREAS FOR INVESTMENT AND SUPPORT

- **Matching value chain investment grants** for storage and agricultural processing and equipment.
- **Research and extension grant** to support agricultural technology, extension and adaptive research.
- **Agriculture innovation grants** to develop innovative business services or products.
- **Marketing grants** for agricultural companies to engage with smallholder producers.
- **Productivity incentive grants** for collaborations between agribusinesses, service providers and producer associations, including agricultural training for vulnerable subsistence farmers with "market potential."
- **Smart subsidy voucher** fund to connect lead farmers to business development and input suppliers.
- **Service contracts** to engage business development providers to assist with program implementation.
- **Business plan awards** to solicit business plans from small agriculture-related businesses.
- **Internship facility** for internships in small businesses targeting the smallholder sector.
- **Capacity building, training, and technical assistance** to adopt improved technologies and agricultural practices.

Through FGDs and KIIs, the evaluation team found several recurring themes that impacted the effectiveness of the IIP Fund. First and foremost, the purpose and goal of the IIP Fund were unclear and very broadly stated. The guidelines for what could be funded was also very inconsistent and it is unclear how the multitudes of potential funding categories fit together and served a common goal. It is not clear what the targeted goal for each grant was, nor how the impact of the grant should be measured.

Secondly, on an individual level, for project participants the guidelines for who could benefit from the IIP grant and how to apply was unclear. Many of the IIP recipients did not know why they were selected, and those that applied for the IIP Fund but did not receive funding didn't know why, or only learned that they didn't get the funding because PROFIT+ ended. When the team met with the recipients in-country, some CADs mentioned they received in-kind contributions by way of farming basics such as gumboots, sprayers,

overalls, and a hand pump. Other CADs never received anything. The same can be said about research institutions, output buyers, processors, exporters, and PCs as well.

Third, the evaluation team found that while many did receive IIP Funds towards the end of the project, the recipients always stated that they did not have enough training or support to succeed moving forward. Many that received these funds in-kind as equipment did not receive training on how to use the machines, and thus, were left to figure it out on their own. Some have not even used their machines to its fullest capacity as they did not know how. For example, one CAD received farming mechanization equipment in a form of a tractor and a plough ripper towards the end of the project in May 2017. The CAD mentioned that while he is glad to be one of the few in the Eastern Province to own a tractor, he did not know how to use it because PROFIT+ phased out too soon. He spent considerable time working with SARO, the equipment provider, in order to learn the basics. A processor in Lusaka shared that it took him two years after PROFIT+ left to get the machinery he received an IIP grant for to fully operate. A processor in Petauke also mentioned that while they are grateful to PROFIT+ for providing them with machinery to increase production, they were not trained on maintenance of the equipment and thus, once they broke down, they simply left it unfixed and/or was unable to afford traveling distances to get it repaired. Nonetheless, through these machines, this processor was able to expand their business and have now moved into brewing local Zambian beer, also known as Chibuku, made from maize. However, when asked about the closeout of PROFIT+, they mentioned, *“It’s like a child is learning how to grow, but then the mother dies,”* as they felt there is still much more to learn but not enough time and support was received.

Fourth, due to the rapid end of project disbursement of IIP Funds, many hopeful recipients were left with nothing. The evaluation team found during FGDs and KIs that many CADs, processors, and PCs were told to submit proposals in the last year of PROFIT+, with promises that there was funding leftover. After spending considerable time preparing for the proposals, many were then told that PROFIT+ was closing and that funds were no longer available. For some, they simply never heard from PROFIT+ staff again and later found out that PROFIT+ closed without notification.

Finally, through reviews of project documents, the evaluation team found considerable discrepancies in reporting on recipients and amounts of funds disbursed. In some Annual Performance Reports, PROFIT+ reported how the Fund was managed, who they were given to, and for how much. Once the evaluation team received the IIP Fund recipients list, some of the records did not match the reports or what was outlined in the yearly Work Plan.

Nonetheless, the evaluation team found some cases whereby the IIP Fund really helped to jumpstart a business. Founded in 2014, Zasaka Agro Services Limited, now known as Good Nature Agro, is a for-profit social enterprise in Chipata that identifies small-scale growers to grow high-value legumes crops for premium markets. Under PROFIT+, Good Nature Agro received two separate IIP grants in the last two years of the project. Their first IIP grant of 363,824 Kwacha (\$27,560) was first awarded in Year 4 of PROFIT+. This grant was intended to develop the CAD network by providing CAD trainings and groundnut seed multiplication. As PROFIT+ was coming to an end, Good Nature Agro received another large grant of 275,824 Kwacha (\$20,895), for a processing machine (used for soy, groundnuts, and cowpeas), to develop private sector production and marketing. Through these grants, Good Nature Agro jumpstarted their business from not only expanding their seed processing and production but being connected with a huge CAD network to help sell their inputs. One of the managers stated, working with PROFIT+ helped *“mechanize and ramp up the speed and quality”* of their business. As PROFIT+ phased out

its activities, Good Nature Agro received a subsidized vehicle from PROFIT+ and recruited six PROFIT+ staff to work under the social enterprise.

IIP RECIPIENT HIGHLIGHT: MR. MUYANO IN LUNDAZI DISTRICT

Mr. Muyano, a CAD under PROFIT+, is the owner of SGM Agro Shop in Lundazi. Before his involvement with PROFIT+, Mr. Muyano owned a small farming business and a grocery store on the side of the Great East Road. Due to his farming activities, Pannar took notice and began working with him to sell inputs to the community. In 2012, he was recruited by PROFIT+ to become a demo host farmer and opened up his agro-dealer store next door to his grocery store. Towards the end of PROFIT+, Mr. Muyano submitted an IIP grant proposal for a tractor to mechanize his farm and to rent out the tractor service. Through this grant, he received a tractor and a plough ripper in May 2017 for 87,208 Kwacha (\$6,600), though the total cost for both equipment totaled to 316,533.80 Kwacha (\$23,943). Until today, Mr. Muyano has been paying SARO, the company who provided the equipment and still has payments left to go until March 2020.

Upon receiving the grant, Mr. Muyano noted that he feels proud to be one of the only few who owns a tractor in Lundazi. He has been able to expand his farming productivity, as well as rent his tractor and plough ripper to the community to make additional income. Nonetheless, he noted that while PROFIT+ gave him this grant, he did not receive any training of how to use the tractor. He had to learn on his own with some help from SARO. Through PROFIT+, he felt that the biggest support received was capacity building through training on farming and record keeping, support to help secure an agro-dealer certificate, and of course, the grant for the equipment. Right now, his focus is on increasing his income through his farming and tractor business. He hopes to begin aggregating soon.

IV. CONCLUSIONS

The purpose of this evaluation was to identify key successes and challenges of PROFIT+, the merits and shortcomings of the CAD model and the IIP Fund, and to identify why activities have or have not continued beyond life of project. Due to the nature of the evaluation questions, the evaluation team has broken down and summarized the evaluation results based on two main themes: 1) sustainability of the project and 2) lessons learned from PROFIT+.

4.1 SUSTAINABILITY

Below, the evaluation team has summarized key findings to consider for the sustainability of this project:

Key Successes

The agriculture and business trainings were immensely popular and are still being used today. Almost all CADs, whether they were operating a CAD business or not, praised trainings as the most valuable aspect from PROFIT+. Many commented on how they still use improved agricultural techniques they learned on their own farms and how they have also continued to share advice with neighbors and members of their community. Inactive CADs (those that are not currently operating an agro-dealership) shared that they are also using the agricultural training at their own farm. While these trainings helped CADs to operate their business, for some, the period of trainings was still too short.

Active CADs are doing even better now than they were when PROFIT+ ended. Active CADs, that is, those CADs currently operating an agro-dealership, have more clients and sell more seeds, agricultural chemicals, and more veterinary products than they did when PROFIT+ ended. Two-thirds of active CADs have expanded their agro-dealership by offering more products, expanding their existing location, opening up new agro-dealerships or diversifying into other areas of business.

Active CADs have maintained and continue to value linkages with input suppliers, especially seed suppliers, fostered under PROFIT+. Linkages between CADs and input suppliers was a key feature of the CAD approach, and active CADs have valued and sustained those relationships. CADs are primarily selling seed on consignment, an arrangement that other input providers do not offer. As a result, beyond seeds, CADs carry a limited variety of inputs. Based on KIs, input suppliers felt that PROFIT+ did not screen CADs sufficiently and thus, have established stricter conditions since PROFIT+ ended to ensure that CADs they work with are professional and trustworthy. As a result, suppliers now work with fewer CADs than they did under PROFIT+. Therefore, some CADs have lost relationships with input suppliers and, for some CADs, caused their business to fail. For the most part, linkages with input suppliers, primarily seed suppliers, have been sustained. However, more thorough screening of CADs would have preserved more of the relationships in the long run. CADs found it harder to maintain linkages with output-buyers, but those that did report that they aggregate more than when PROFIT+ ended.

Women CADs are more empowered in their business, household, and community than before they started the CAD business. Both women and male CADs have fared well; the success and failure rate between male and female CADs is comparable. Female CADs share that they feel more empowered in the household and in their community as a business owner. They are to a greater extent engaging in decision-making in their home and participate in more community organizations. Female CADs noted also in focus group discussions that they have fewer conflicts with their husbands since they started

the CAD. Thus, women that operate an agro-dealership have gained greater agency, voice, and leadership within their households and communities.

SILCs are still in operation and serve as a customer base for CADs. Active CADs continue to support SILCs they started under PROFIT+, and some are still starting new ones. Many CADs run multiple SILC groups, but it is quite common for some of the original groups to no longer operate, primarily due to members' non-payments. The SILC groups are primarily made up of women engaging in small scale trade, and by generating and saving capital, they gain greater financial stability and the ability to invest in improved inputs. As CADs cultivate the relationship with members and educate them about improved inputs, SILC group members become a loyal customer base. Some inactive CADs are also still supporting SILC groups, either as a service to their community and/or with the hope that they will be able to launch an agro-dealership in the future and they want to cultivate a customer base. Training of CADs to form SILC groups has had lasting sustainable effects beyond the life of the project.

Key Challenges

Only 42 percent of people that were trained by PROFIT+ to become a CAD are currently operating a CAD. One third of those trained never opened a CAD business, primarily because they did not have the financial means to establish a shop and were ill equipped to launch the business. As noted, limited attention to carefully screen and select participants for the CAD training is a major contributing factor as to why many never even launched the business. In addition, one quarter of trained CADs opened an agro-dealership but closed it, also primarily due to financial reasons. The evaluation found that the three biggest challenges in order to launch and/or stay in business were attributed to 1) limited financial means, 2) no or limited business experience, and 3) the short period of support.

PCs were formed too late during PROFIT+ to be sustainable. The PCs were made up of CADs, some of them not yet operating their own agro-dealerships and were therefore not established and mature enough to scale up and launch a joint business venture. Most PCs were formed during the final year of PROFIT+. This simply did not provide enough time for these PCs to develop a joint vision, business plan and obtain support to put that plan into action. CADs were primarily motivated to form the PCs to apply for an IIP grant, but when they did not receive a grant, or received a grant but did not know how to leverage the grant into a business, the joint venture fizzled. The majority of PCs the evaluation team met with were not functioning. Many reported that the PC members have not come together since PROFIT+ ended and have no plans to revive the company.

Investment under the IIP Fund have, in individual cases, spurred change, but as a whole, resulted in uneven impact. The purpose and goal of the IIP Fund were unclear and very broadly stated. Project documents were missing and thus, the evaluation team had a hard time reviewing what was intended to compare with what happened in practice. The guidelines for what could be funded were also very inconsistent. It remains unclear how the multitudes of potential funding categories fit together to serve a common goal. During the first half of the project, IIP funds were used for training and other project related activities. Many of the IIP recipients did not know why they were selected, and those that applied for the IIP Fund but did not receive funding, did not know why, or only learned that they did not get the funding because PROFIT+ ended. Similarly, while project participants did receive IIP Funds towards the end of the project, recipients always stated that they did not have enough training or support to succeed moving forward. Only in a few individual cases did the IIP Fund truly help to jumpstart their business.

4.2 LESSONS LEARNED

Under Lessons Learned, the team found a set of recurring themes throughout the evaluation:

Key Successes

Participants are still using knowledge from PROFIT+ trainings. Based on this evaluation, trainings were considered the most successful activity. 97 percent of CADs found the business training to be valuable, and 88 percent found the training on how to operate the business as the most valuable support they received from PROFIT+. CADs are still using the agricultural techniques and conservation farming approaches taught under PROFIT+ to improve the yield on their farms.

Focus on gender inclusion provided PROFIT+ with increased women participation and positive outcomes on women. PROFIT+ made an active effort to include women as participants in all project activities, ensuring that all activities were implemented in an environment conducive to women. In the first year, 55 percent of women were included as DHFs. Throughout the evaluation, women reported feeling more empowered after working with PROFIT+, with greater agency, voice, and leadership amongst households.

Key Challenges

The change in PROFIT+'s activities halfway through the project left too little time to support the implementation of key activities. PROFIT+ had internal management issues and multiple changes in leadership and staff, which affected overall project implementation. To correct the course of the project, by the end of 2015, new PROFIT+ leadership revamped and refocused the program and moved away from the DHF model. PROFIT+ rolled out the CAD model, made investments using the IIP Fund, and attempted to create PCs. As these activities were introduced or scaled up during the last two years of the project, the time for training and continued support was limited. The time constraint on continued follow-up and support caused some of these interventions to collapse after PROFIT+ left. Most PCs, for instance, struggled or ceased all activities. While the course correction was necessary to implement PROFIT+, it would have been beneficial to focus on fewer new activities and instead put more financial and human resources into bolstering the activities they were already undertaking. For instance, not only was there limited time for PROFIT+ to support the formation of PCs, but also the CADs that made up the PCs didn't have enough time to establish their own businesses before they were expected to expand into PCs.

A lack of clear and consistent processes in selecting CADs contributed to the high rate of non-operating agro-dealerships. Midway through the project period, PROFIT+ shifted its activities away from the DHF model to instead train and support DHFs to become CADs. While the "best" DHFs were selected, PROFIT+ did not establish clear selection criteria for how to identify new CADs. Both the limited time left in the project to implement the CAD model, and the fact that PROFIT+ had already spent considerable resources on DHF, resulted in a rushed approach to select new CADs. As the screening and selection of aspiring CADs were limited, some people with no experience or a lack of entrepreneurship skills were still selected. For future projects, attention should be placed on a well thought out activity design by providing 1) access to financial resources to help CADs, 2) capital to help CADs build a shop and operate a business, and 3) basic skills training in agriculture and/or business. When possible, projects should vet for trustworthiness and credit worthiness to repay input suppliers, and entrepreneurial drive as key areas to a more thorough selection process.

The absence of a clear and targeted focus of the IIP Fund made it difficult to assess its overarching impact. The IIP Fund did not have a clear and targeted focus of what it was funding and who the beneficiaries were. By the end of PROFIT+, the IIP Fund awarded a broad range of activities including agricultural training, basic seed multiplication, capacity, and skills training for CADs, farm mechanization, as well as upgrading and expansion of agricultural processing capacities. Beneficiaries of the IIP Fund ranged from farmers, agricultural research institution, processors, exporters, input providers and agricultural start-up businesses. While funds were awarded, it is unclear to beneficiaries, the evaluation team, and other PROFIT+ staff as to how the recipients were chosen. In addition, available project documents do not clearly state what type of activities the IIP Fund should finance, and how the funding should be used to leverage specific measurable goals. While the IIP Fund was able to leverage some businesses to expand their processing capacities, it is hard to see the whole picture of how smaller funded activities under the IIP Fund worked towards supporting agro-business growth, stimulating private sector investment, or expanding the agriculture sector.

Project close-out came as a surprise to many project participants. Throughout the evaluation many CADs, processors, and output buyers were completely unaware that PROFIT+ was coming to an end. As there was little time to implement project activities after the project course correction in late 2015, the time for project phase out was also limited. Some learned that the project came to an end just before the close-out, while others did not know until the project was already over. Similarly, some of the IIP grant recipients learnt about the close-out just before the project ended (i.e. a week before). Many CADs felt that PROFIT+ left them mid-way through and that they were unprepared to “*stand on their own*”. Similarly, many CADs, PCs, and processors that were encouraged to apply for an IIP grant, later learned that the project was closing before their application could be reviewed and thus, felt let down. A better transition and phase out plan could have prepared project participants for greater resilience to lean on each other or seek outside advice and support.

4.3 WOMEN EMPOWERMENT UNDER PROFIT+

The evaluation team assessed gender equity as a cross-cutting theme and determine how it played a role in the sustainability of the project. As made evident in project documents and reinforced by PROFIT+ staff, PROFIT+ did actively try to include women as participants in all project activities. Approaches such as agribusiness, farmer field schools, establishment of demonstration plots, out-grower schemes, and the CAD model were intended to be implemented in an environment that was conducive to women’s participation. In the first year, women were included as part of the demo host farmer identification process, resulting in an overall achievement of 55 percent women’s inclusion. Similarly, over 9,000 women were chosen to go through aflatoxin trainings, farmer field days, and trainings on gender equity at the household level.⁴⁹ These processes deployed by PROFIT+ helped to increase women’s participation throughout PROFIT+.

Throughout this evaluation, the quantitative survey accounted for 42 percent of women CADs (76) under PROFIT+. Similarly, the evaluation team met with a number of SILCs made up entirely of women, as well as held KIIs with 12 CADs directly. From these, the evaluation found that **active CADs spend more money on their families, and women are more empowered in the household and their communities.** The majority of women interviewed for this evaluation mentioned that they were more

⁴⁹ USAID. PROFIT+ Annual Performance Report No. 1, 2013.

empowered due to the knowledge and income they gained from PROFIT+. Female CADs are participating in community organizations, both as members and as leaders, to a greater extent than they did before they started operating their own business.

Female CADs share that they were more likely to engage with their husband in conversations about financial matters related to the household than they were before they became a CAD. In addition, as the female CADs had access to their own resources and could make decisions about how to spend their money, they had fewer conflicts with their husbands. The majority of women CADs disclosed that with the income from their agro-dealership, they spend it on their children's education first and foremost, followed by buying food for the household.

Women CADs reported that they now feel more empowered to engage with their husbands in household decision-making because they understand the business and were taught about savings. As a result, they are less dependent on their husband's income and feel more comfortable to voice their opinions on future decisions. One female CAD shared that she suggested to her husband to open a second shop because the first one was already doing so well. Her husband agreed and today, they now own three shops together. The evaluation team saw that for most female CADs interviewed at their agro-dealership, their husbands were present. Female CADs said that their husbands supported their business ventures and would help them with the store as needed.

While women are more empowered after their participation under PROFIT+, especially those women that were successful in establishing a CAD, the social dynamics for gender rooted in Zambian culture still remain. As the head of the household, men continue to have the final say in household matters, whether that be what to grow during a farming season and/or what to spend additional income on. However, women that generate their own income are more empowered to engage their husband in conversations about household decisions and are less dependent on their husband's approval for smaller investments, such as food and other necessities for the family.

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ANNEX I: LITERATURE REVIEW

I. BACKGROUND

The GRZ recognizes the agricultural sector as a key driver to achieving sustainable economic growth as outlined in the Second National Agricultural Policy (SNAP) and the 7NDP.⁵⁰ Zambia has 40 million HA of arable land, favorable groundwater resources, nutrient-rich soil, and low population density.⁵¹ According to a 2017 estimate, agriculture contributes 7.5 percent of Zambia's GDP. Furthermore, 54.8 percent of Zambia's labor force is employed in agriculture. Some of Zambia's major agricultural products include corn, sorghum, rice, peanuts, sunflower seeds, vegetables, flowers, tobacco, cotton, sugarcane, cassava, and coffee.⁵²

There are three main categories of farmers in Zambia: small-scale, medium-scale, and large-scale farmers. Most Zambians are subsistence farmers with occasional surplus for markets while *“medium-scale farmers produce maize and a few other cash crops for the market”* and *“large-scale farmers produce various crops for the local and export markets.”*⁵³ Large commercial farmers co-exist with scattered smallholders and some small commercial farmers.⁵⁴

Efforts towards long-term agricultural growth include USAID's FtF initiatives. FtF, a global food security initiative, focused on smallholder farmers, particularly women, assists partner countries in developing their agriculture sectors to spur economic growth that increases incomes and reduces hunger, poverty, and under-nutrition. Zambia is one of the 19 FtF countries worldwide. Under FtF, USAID has supported increased food security and decreased hunger in Zambia from 2012 to 2017 through the Production, Finance, and Improved Technology Plus (PROFIT+) Project, a 5-year contract managed by ACDI/VOCA. PROFIT+ was Zambia's FtF flagship project.

2. PROFIT+ OVERVIEW

PROFIT+ was a \$24 million contract awarded to ACDI/VOCA that ran from June 2012 to May 2017. The goal of PROFIT+ was to increase food security and decrease hunger through agriculture-led growth and inclusive market access by smallholder farmers. The intermediate results of PROFIT+ were: (1) increased smallholder productivity; (2) expanded markets and trade; and (3) increased private sector investment in agricultural activities. The project targeted the following six value chains: maize, soy, groundnuts, sunflower, tomato, and onion. Honey was added as an additional value chain in year four. The project

⁵⁰ Chapoto, Anthony, Brian Chisanga, and Mulako Kabisa, “Zambia Agriculture Status Report 2017,” Indaba Agricultural Policy Research Institute. Jan. 24, 2018.

https://www.researchgate.net/publication/322676437_Zambia_Agriculture_Status_Report_2017.

⁵¹ World Bank. “Zambia: Harvesting Agricultural Potential.” May 16, 2018.

<https://www.worldbank.org/en/about/partners/brief/zambia-harvesting-agricultural-potential>.

⁵² CIA. “Factbook: Zambia.” 2019. <https://www.cia.gov/library/publications/the-world-factbook/geos/za.html>.

⁵³ “Zambia Country Commercial Guide,” Export.gov. April 4, 2019. <https://www.export.gov/article?id=Zambia-Agricultural-Sector>.

⁵⁴ Felgenhauer, Katharina. “Zambia – Leveraging Agricultural Potential.” OECD, accessed September 23, 2019. <http://www.oecd.org/countries/zambia/41302315.pdf>.

activities were focused in four districts in the Eastern Province (Chipata, Katete, Lundazi, and Petauke) and six districts in peri-urban Lusaka (Chibombo, Chilanga, Rufunsa, Chisamba, Kafue, and Chongwe).⁵⁵ The project also identified the cross-cutting themes of gender, environmental stewardship and climate change, behavioral change, communication, and HIV/AIDS and micro-enterprise development. The expected results include: (1) a 30 percent increase in productivity and income from selected value chains; (2) benefit 200,000 smallholder farmers, processors, and other value chain actors; and (3) increase the value of agricultural sales by \$125 million.⁵⁶

3. VALUE CHAIN ANALYSIS

During start-up of PROFIT+, value chain analyses were conducted to look at the value chain from input supplier to end market, including supporting markets, and the enabling environment. The value chain analyses identified and evaluate opportunities for investment and growth. The analysis found that many of the value chains faced the constraints of limited access to finance, poor business and marketing skills, gender imbalances, inadequate use of improved seed, and lack of involvement of the private sector, among others.⁵⁷ The value chain analyses identified a number key areas that needed upgrades, which are summarized in the table below.⁵⁸

Maize	1. Increase yields through use of inputs 2. Increase access to improved production technologies 3. Reduce use of land to address food security needs
Soybeans	1. Intensify the use of commercial seed and modern agronomic practices 2. Emphasize the use of cost-plus pricing (CPPs)
Groundnuts	1. Introduce varieties of groundnut with better agronomy and varieties for confectionary and peanut butter 2. Emphasize the use of cost-plus pricing (CPPs) 3. Use micronutrients and gypsum or lime application 4. Improve postharvest handling 5. Introduce groundnut lifters, stripers, and shellers 6. Control of aflatoxin
Sunflowers	1. Use of hybrid sunflowers that are more disease/pest resistant 2. Intensify the use of commercial seed and blended fertilizer 3. Simulate demand and production

⁵⁵ USAID. "Production, Finance, and Improved Technology Plus Project (PROFIT+) FY 17, Annual Outcome Survey," June 2017.

⁵⁶ USAID. "Production, Finance, and Improved Technology Plus (PROFIT+) Value Chain Assessments and Strategy," September 25, 2012.

⁵⁷ Ibid.

⁵⁸ USAID. "Production, Finance, and Improved Technology Plus (PROFIT+) Annual Performance Report No. 1," October 31, 2013.

Onions	1. Use of onion drying equipment 2. Use of micro-irrigation technology 3. Improve marketing strategies
Tomatoes	1. Use of hybrid tomatoes that are disease/pest resistant 2. Raise seedling in trays and crop covers particularly during the rainy season 3. Promote consolidation as a marketing strategy

As the value chain analysis was conducted during project start-up, honey was not included in the initial value chain analysis.

4. OVERVIEW OF PROFIT+ RESULTS FRAMEWORK

The objective of PROFIT+ was to increase food security and decrease hunger through agriculture-led growth and inclusive market access by smallholder farmers. In line with this objective, three intermediate results were identified. The following paragraphs give an overview of primary activities implemented to achieve the results, followed by major accomplishments broken down by project year. Please note that Year Four Annual Performance Report was not accessible and therefore, specific achievements are not included in this document.

4.1 INTERMEDIATE RESULT 1: INCREASED SMALLHOLDER PRODUCTIVITY

In order to increase food security and increase income, PROFIT+ called for increased agricultural productivity. Intermediate result one identifies a number of activities to assist project beneficiaries to adopt new practices critical to production technologies. Activities to highlight include: technology testing, technology transfers, Farmer Business Advisor models, and increasing availability of certified seed. Technology testing included demonstrations to teach new technologies, such as soil sampling, minimum tillage, liming, and integrated pest management among others. Furthermore, demonstration sites were established with the objective of showing the benefits of applying certified seeds, intensive fertilizer, and improved agro-chemicals. At the community level, technology transfer techniques included Farmer Field Days, to demonstrate techniques and new technologies at the PROFIT+ demonstration plots, and Farmer Field Schools for smallholder farmers. The demo-host farmer model is designed to facilitate transfer of improved agricultural technology, increase access to inputs (seed, fertilizers, and agro-chemicals), facilitate market information, and training.⁵⁹ These demonstrations encourage participating farmers to try out the demonstrated technologies.⁶⁰ Other activities include the Farmer Business Advisor Model, where advisors would support lead farmers and transfer knowledge on improved seedling production and increasing availability of certified seed. PROFIT+ recognized that farmers had limited access to improved seeds, which resulted in weak yields.⁶¹ To this end, PROFIT+ identified, supported and trained lead farmers to launch and operate small enterprises, so called CADs, to sell input to small-scale farmers. The CAD activity was designed as a market approach to fill the often missing “last mile” between farmers, input suppliers and output buyers. By linking CADs with input suppliers and output buyers, PROFIT+ sought to address

⁵⁹ USAID. “Production, Finance, and Improved Technology Plus (PROFIT+) Annual Performance Report No. 2,” October 31, 2014.

⁶⁰ Ibid.

⁶¹ USAID. “PROFIT+ Annual Performance Report No. 1,” October 31, 2013.

smallholders' limited access to input and access to markets and generate entrepreneurial activities and employment opportunities in rural areas. Summaries of achievements under this IR by year, based on available project documents are provided below:

YEAR ONE ACHIEVEMENTS

1. Increased awareness of proper business management skills among agro-dealers; and
2. Increased use of certified and improved seed and CPPs in the PROFIT+ zone.⁶²

YEAR TWO ACHIEVEMENTS

1. 11,233 (6,199 males and 5,304 females) participated in field days and were exposed to new technologies that increase production and productivity for field crops;
2. Out of 79 agro-dealers assessed, 15 are actively selling agro inputs;
3. 8,140 smallholder farmers received training in various technologies with 74 percent overall having applied at least one technology.⁶³

YEAR THREE ACHIEVEMENTS

1. Created 200 CAD networks and 664 demonstration sites;
2. Continued use of agribusiness groups/SILCs to facilitate village banking; and
3. Developed rural market networks and partnerships through promotion of new technologies.⁶⁴

YEAR FIVE ACHIEVEMENTS

1. Increased CADs to 339;
2. Increased number of agribusiness groups/SILCs to 1,163 with a membership of 28,039, of whom 23,638 are women; and
3. Promoted the use of new technology, aflasafe, and submitted to Zambian Bureau of Standards for approval.⁶⁵

Please note that Year Four Annual Performance Report was not accessible and therefore, specific achievements are not included in this document.

4.2 INTERMEDIATE RESULT 2: EXPANDED MARKETS AND TRADE

In order to increase the value of agricultural sales, PROFIT+ called for expanded markets and trade. PROFIT+ recognized that smallholder farmers had limited understanding of market demands, limited access to markets and limited infrastructure in place for aggregation of products.⁶⁶ To address these issues, PROFIT+ sought to foster long term relationships between buyer and communities to offset the challenges that smallholder farmers face in commodity markets. PROFIT+ focused on facilitating commodity marketing, empowering producers to become better negotiators for prices and linking producers to traders.⁶⁷ Aggregation points were identified to foster efficient trade linkages between farmers and traders.

⁶² USAID. "PROFIT+ Annual Performance Report No. 1," October 31, 2013.

⁶³ USAID. "PROFIT+ Annual Performance Report No. 2," October 31, 2014.

⁶⁴ USAID. "PROFIT+ Annual Performance Report No. 3," October 31, 2015.

⁶⁵ USAID. "PROFIT+ Annual Performance Report No. 5," May 9, 2017.

⁶⁶ Ibid.

⁶⁷ USAID. "PROFIT+ Annual Performance Report No. 5," May 9, 2017.

PROFIT+ facilitated also meetings between farmers and traders to discuss prices and volumes of commodity to be aggregated and the location of aggregation points. In addition, horticulture marketing strategies were implemented, particularly focused on the value chains of tomatoes and onions. To this end, production windows were extended and post-harvest handling was improved so that farmers could *“take advantage of season price differentials of sales, expand formalized and direct sales to ‘modern’ and regional markets via improved processing/storage facilities, which would increase premiums on quality/standards and reliable volumes of supply.”*⁶⁸

YEAR ONE ACHIEVEMENTS

1. Reduced levels of aflatoxin in groundnuts to acceptable export standards; and
2. Increased household incomes of smallholder farmers through aggregation efforts to reduce transaction costs and increase profit margins.⁶⁹

YEAR TWO ACHIEVEMENTS

1. Linked “*Delicious Milling Limited of Lusaka*” to five cooperatives in Chipata district to purchase maize;
2. Sensitized farmers on the need to calculate gross margins and break-even prices before engaging in price negotiations through gross margins training;
3. Identified 133 aggregation centers; and
4. Trained a total of 1,670 farmers (763 male and 907 female) in Sell More for More (SMFM).⁷⁰

YEAR THREE ACHIEVEMENTS

1. Trained 45 major community groups in SMFM;
2. Linked 39 trained community groups to buyers utilizing aggregation centers;
3. CADs performed aggregation roles against forward contracts;
4. Invested \$31,134 through the IIP Fund to increase COMACO processing facilities;⁷¹

YEAR FIVE ACHIEVEMENTS

1. Facilitated linkages with Zambia Cooperative Federation for 11 primary cooperatives to access solar powered mills on credit;
2. Promoted oil production as a vegetable processing, and the animal feed industry as key opportunities for market diversification; and
3. Facilitated the implementation of the WRS by improving the availability and utility of market information.⁷²

4.3 INTERMEDIATE RESULT 3: INCREASED PRIVATE SECTOR INVESTMENT IN AGRICULTURAL RELATED ACTIVITIES

⁶⁸ USAID. “PROFIT+ Annual Performance Report No. 1,” October 31, 2013.

⁶⁹ USAID. “PROFIT+ Annual Performance Report No. 1,” October 31, 2013.

⁷⁰ USAID. “PROFIT+ Annual Performance Report No. 2,” October 31, 2014.

⁷¹ USAID. “PROFIT+ Annual Performance Report No. 3,” October 31, 2015.

⁷² USAID. “PROFIT+ Annual Performance Report No. 5,” May 9, 2017.

In order to increase competitiveness of smallholder Zambia farmers, PROFIT+ called for the increase of private sector investment in smallholder farmers. To achieve this IR, PROFIT+ put in place the following activities; collaboration with private sector entities and the establishment of collaborative agreements with value chain stakeholders to provide training of seed inspectors, training in production technologies, and advising in trade.⁷³ PROFIT+ established the IIP fund, a grant facility to foster innovation, leverage resources and address market linkage constraints by buying down the risk of capital investments. To this end, the IIP Fund invested in input companies to develop their rural presence and linkages with the CADs, in out-grower schemes also linked to CADs, and in agricultural processing facilities to improve, diversify and increase processing capacity. The IIP Fund aimed to provide a risk-sharing platform to introduce innovative concepts and investments in Zambia's agricultural sector. The aim of this project was to catalyze \$50 million in increased investment in agriculture-related activities.⁷⁴

YEAR ONE ACHIEVEMENTS

1. Established memoranda of understandings (MOUs) with 45 entities, notable partnerships include the World Food Programme, Adventist Development and Relief Agency, and Afgri Corporation among others.⁷⁵

YEAR TWO ACHIEVEMENTS

1. Enabled 110 farmers (101 male and 9 female) to access input loans with a total value of just over ZMW 190,000 (\$30,766); and
2. Linked ten CADs to four established horticulture inputs suppliers.⁷⁶

YEAR THREE ACHIEVEMENTS

1. Focused on catalyzing private sector investments in upgrades to sustain value chain competitiveness.⁷⁷

YEAR FIVE ACHIEVEMENTS

1. Provided technical assistance and targeted IIP investments to selected companies to develop their rural presence and selected buyers to develop outgrower schemes;
2. Invested in processors to diversify product lines; and
3. Provided support to ZAMACE and the Presidential Trade Africa Initiative to increase demand for Zambian products in the region.⁷⁸

5. GENDER

As PROFIT+ aimed to create equal opportunities for women and men along the target value chains and in accessing market, a gender analysis was carried out in 2012 to understand the gender relations, issues and constraints. The gender assessment studied decision making through the various stages of the value chain (i.e. production, value addition/ processing and marketing). According to the Annual Performance

⁷³ USAID. "PROFIT+ Annual Performance Report No. 2," October 31, 2014.

⁷⁴ USAID. "PROFIT+ Annual Performance Report No. 1," October 31, 2013.

⁷⁵ Ibid.

⁷⁶ USAID. "PROFIT+ Annual Performance Report No. 2," October 31, 2014.

⁷⁷ USAID. "PROFIT+ Annual Performance Report No. 3," October 31, 2015.

⁷⁸ USAID. "PROFIT+ Annual Performance Report No. 5," May 9, 2017.

Report for year 5, PROFIT+ completed a study on Women CADs. The study assessed the performance of female CADs and what impact they had on women farmers, extension and health and nutrition. The evaluation team does not have access to this report. To our knowledge, PROFIT+'s did not undertake additional gender assessments.

Key findings from the 2012 gender assessment include:

Production. Decisions on production of all crops were made jointly for groundnuts, maize, soya beans and sunflower. Gardening and horticulture decisions on the other hand, which included tomatoes and onions were made by men.

Processing. Processing of output was done at home using traditional tools and technics primarily by women mainly. Women processed mainly groundnuts, maize and sunflower. The assessment found that women had decision-making authority over processing, as most processing activities were home-based and for household consumption and therefore not perceived as an income generating activity.

Transportation. The assessment found that decisions to take produce to an external processor or buyer were made jointly by men and women. For crops like maize, onion, soybean, and tomato, production, transport and marketing issues are predominantly decided by males.

Marketing. The role of men and women in marketing depended on the quantity of the product, control of in-come, and the distance to the market. Women often marketed raw products in smaller quantities near their village, while men sold larger quantities at the main markets further from home. Even the traditional woman's crop of groundnut was often marketed by the men of the household if the quantities were large enough.

Income. In general, men had control of income generated from most of these six value-chains. Either directly by ensuring all money collected by a female was reported back to him or indirectly by denying money to the woman for purchasing items if she has access to income from the sale of crops near the village. In some villages, husband and wife discussed and planned for a household budget.

Decision Making over Division of Labour. In most villages, males within male-headed households had the final say on labour allocation. Women had the final say in female-headed households.⁷⁹

⁷⁹ USAID. "PROFIT+ Value Chains Barrier Analysis Report," August 28, 2012.

ANNEX 2. CAD SURVEY QUESTIONNAIRE

PROFIT+

CAD Survey Questionnaire

General Overview

Good morning/afternoon, my name is ---- and I work for RuralNet Associates that has been subcontracted by Integra, an international development consulting firm that is headquartered in Washington D.C. We are in Zambia, evaluating the USAID-funded project, PROFIT+, which was implemented by ACDI/VOCA (another international development consultancy firm) from 2012-2017. The goal of PROFIT+ was to increase food security and decrease hunger through agriculture-led growth and inclusive market access for smallholder farmers. One of the activities PROFIT+ carried out was to train and support CADs like yourself.

We are conducting this survey among CADs to find out what activities under PROFIT+ worked well, what worked less well and what the lessons learned are from PROFIT+. We are also interested to understand how and to what extent your business has been sustained and continued after PROFIT+ ended. The information will help inform USAID about future programs.

You have been selected to participate in this survey and share your experience and opinions about PROFIT+ because you were involved in PROFIT+'s activities, however participation is voluntary. We will ask you a series of questions on topics related to PROFIT+. Through the interview, we are interested in hearing your opinion and experience from your involvement with PROFIT+ to help us evaluate and learn from PROFIT+. At the end of the interview, you will have the opportunity to share anything you consider relevant to the topic that was not discussed in the interview or ask questions. The interview should take between 45 minutes to one hour. If there is a question you don't want to respond to or can't respond to, you don't need to answer that question. If there is something important you need to attend to during the course of the interview, you can take a break from the interview, or end the interview.

All the information you provide is strictly confidential and will not be shared with anyone outside of the evaluation team. We are not going to report any of your answers individually. Please note that there is no payment for participating in the survey. If you have any additional questions or concerns after the interview, please contact Mr. Stephen Tembo on 0966743100, RuralNet Lusaka /Pin Thanasant at pthanesnant@integrallc.com.

To determine the start of the interview:

Between 2012 and 2017, did you receive training and support from the USAID project PROFIT+ to operate your CAD?

Demographics

- Study ID
- Gender

- Age
- Level of education
- Marital status:
- Location (District Name)
- Name of the interviewer
- Date

Establishment of the CAD

1. Are you currently operating a CAD?
2. Who owns this CAD?
3. What year did you start operating this CAD?
4. What kind of work did you do before you started the CAD?
5. Did you obtain support from PROFIT+ to start the CAD?
6. If founded without the support of PROFIT+, what services did this CAD dealership offer prior to its engagement with Profit+?
7. What services did your CAD offer by the time PROFIT+ ended? (May 2017)
 - a. Sale of seed
 - b. Sale of fertilizer?
 - c. Sale of agricultural chemicals?
 - d. Sale of equipment
 - e. Sale of veterinary products
 - f. Crop advisory services
 - g. Do you extend credit for input to known and trustworthy customers (input financing)?
 - h. Post-harvest aggregation?
 - i. Sale of crops/ products on behalf of smallholder clients?
 - j. Purchase of crops from smallholder clients for resale?
 - k. Other services?
8. What services does your CAD currently provide to smallholders?
 - a. Purchase of crops from smallholder clients for resales
 - b. Other services?
9. In your estimate, do you sell more, less or about the same amount of input, in volume and in value as you did at the time PROFIT+ ended in 2017? (as applicable)
 - a. Sale of fertilizer?
 - b. Do you extend more, less or about the same amount of credit for input to known and trustworthy customers (input financing)?

Support under PROFIT+

I will now ask you a couple of questions about the training and support you received for your CAD under PROFIT+ and how you experienced that support.

- I. Under PROFIT+, what training or support did you receive that you found valuable to help you operate a CAD, and what training or support did you receive that you found less valuable to help you in your business?
 - a. Did you receive training and support on how to operate the business?
 - b. Did you receive seed capital to start the business?
 - c. Linkages with input suppliers?
 - d. Linkage with buyers of agricultural products (output buyers)?

- e. Linkages with smallholders in your area?
 - f. Linkages to access finance?
 - g. Did you receive protective clothing and/or spray equipment?
 - h. Other forms of support?
2. If PROFIT+ matched your business with input suppliers;
 3. Do you continue to have a relationship with these suppliers?
 4. Did you obtain support from the PROFIT+ program to establish a demonstration plot?
 5. Do you still use the demonstration plot for demonstrating the use of different input?
 6. Under PROFIT+ there was an Innovation and Investment Partnership Fund (IIP) (grant) which disbursed grants for investments in agricultural related activities. Besides the demonstration plots, which were funded by the Innovation and Investment Partnership Fund, did you receive a grant from the IIP Fund?
 7. If yes, what was the grant for?
 - a. Equipment
 - b. Upgrade/ expansion of building
 - c. Business development services and marketing
 - d. Other, please specify.
 8. How did the Innovation and Investment Partnership fund(grants) change your business? (open ended)
 9. During PROFIT+ how often did you meet with PROFIT+ staff (individually or in group)?
 - a. From 2012-2014, about how many times per year?
 - i. Did you find this to be an adequate amount of support for you to launch or grow your business?
 - b. From 2015-2017, about how many times per year?
 - i. Did you find this to be an adequate amount of support for you to launch or grow your business?
 10. Of the support you received from PROFIT+, what did you think was the most valuable support? (select one)
 - a. Training and support on how to operate the business
 - b. Linkages with input suppliers
 - c. Linkages with output buyers
 - d. Linkages with smallholders in your area
 - e. Linkages to access finance
 - f. Demonstration plot
 - g. Innovation and Investment Partnership Fund (grant)
 - h. Other, please specify.
 11. The Profit + project ended in May 2017, how has this business changed since then?
 - a. Clients: Do you have more, less or the same number of clients?
 - b. Employees:
 - c. Suppliers:
 - d. Output buyers
 12. Have you participated in other projects other than PROFIT+ to obtain training or support for your CAD?
 13. Since PROFIT+ ended, how do you obtain information to advice clients on input or agricultural practices?

MoA

14. In the last year, have you obtained any services from the Ministry of Agriculture?

Output buyers

PROFIT+ connected some CADs with output buyers, so that the CADs became aggregators for the output buyers. If you are, or were an aggregator, I now have some questions about your role as an aggregator.

- 15. Did PROFIT+ connect you with output buyer(s) so that you could become an aggregator?
- 16. Do you currently serve as a local aggregator for larger buyers?
- 17. Did PROFIT+ connect you to the company (ies) you are currently aggregating for?
- 18. Are you a member of a PC (group of CADs that aggregate output)?
- 19. What challenges are you currently faced with as an aggregator?

Your clients

I will now ask you some questions about your clients.

- 20. In the last month, about how many of your clients were female and how many were male?
- 21. Thinking about your current client base for input, what percentage would you say is:
 - a. Individual small-hold farmers
 - b. Larger commercial farmers
 - c. Out-grower schemes
 - d. Cooperatives
 - e. Other CADs /other input suppliers
 - f. Other, specify
- 22. Are you involved with an agro-business savings and credit group started under PROFIT+ (also referred to as an agro-business group or Savings and Internal Lending Communities (SILC))?
- 23. Do you have clients that are part of an agro-business savings and credit group started under PROFIT+?
- 24. Based on your experience, are members of an agro-business savings and credit group more likely to have money to purchase input or agricultural services than farmers in a similar position that are not members of an agro-business savings and credit group?
- 25. To your knowledge, have your clients been able to increase their production during the time they have purchased inputs from you?
- 26. To your knowledge, which of your clients' crops have increased the most?
- 27. To your knowledge, which crops have increased the least?
- 28. In your opinion, what product, service or advice that you have provided your clients with has been your most important contribution to their production increases? *(if multiple responses rank them by order of importance)*
- 29. If you are an aggregator, which of the following changes (if any) have you observed among your clients since you started to aggregate their products?
 - a. Less post-harvest loss
 - b. Change in crop they plant to meet the demand of what crops are aggregated
 - c. Purchase more input to improve yield
 - d. Adopt better farming techniques to improve yield
 - e. Cultivate more land
 - f. Greater earnings

About your business

30. In this past year, what were your average profit margins (What I paid for it minus what I sold it for -RuralNet calculate the %) on the sale of
 - a. Your most commonly sold seed variety?
 - b. Your most commonly sold fertilizer?
 - c. Your most commonly sold agricultural chemicals?
 - d. Your most commonly sold agricultural equipment?
 - e. Your most commonly sold veterinary products?
 - f. The most common product you aggregate for clients?
31. In this past year, did you provide advisory services to any of your clients?
32. How were you compensated for the advisory services you provided?
33. Do you do bookkeep of your expenses and sales?
34. In the last two years, have you had loans for your CAD from a:
 - a. My input supplier
 - b. The company I aggregate agricultural products for
 - c. Agribusiness savings and credit group
 - d. Family or friends
35. How were the loans secured?
36. How far away from your location is another CAD located? (*in Kilometers*)
37. Do you know if there are new CAD in your area that were not established at the time when PROFIT+ ended (May 2017)?
38. Do you regularly collaborate with other CAD to obtain lower prices or better services?
39. Do you regularly collaborate with other CADs to:
 - a. Buy inputs in bulk in order to obtain lower prices?
 - b. Aggregate finished products in order to get a higher price from buyers?
 - c. Consolidate cargo in order to lower the cost of transportation?
 - d. Obtain services from the Ministry of Agriculture?
40. In the last two years, have you expanded your CAD business?
41. In what way did you expand your business, did you
 - a. Expanded the kinds of products and services you offer?
 - b. Expanded the building at the current location?
 - c. Opened up a new location?
42. Financially, how were you able to expand your business?
43. In the last two years, have you expanded your business activities into other lines of business?
 - i. What kind of business?
44. Do you have any plans to expand your CAD business within the next two years?
45. What is the biggest challenge your CAD is currently facing? (*select one*)
46. Did the training and support you obtained from PROFIT+ help you prepare for how to face and address these challenges in your business?

Impact on you and your family

Lastly, I will ask you a couple of questions about how operating the CAD has impacted yourself and your family.

47. Since you started the CAD, are you able to spend more, less or the same amount of money on your family?
48. If you are spending more money on your family than you did before you started the CAD, what are you spending more money on?
49. Since you started your CAD, have you become more involved in community organizations?

50. Who decides how the money you are making in your community agro business is spent on in the household?
51. Since you started your CAD, have the time you spend on household responsibilities (cooking, cleaning, caring for children and family members, household repairs) changed?

Concluding questions

52. Thank you for participating in this survey. Is there anything else you'd like to add about your experience under PROFIT+ or anything else related to your CAD that occurred since PROFIT+ ended that you'd like to share?
53. Before we end, do you have any questions about this survey?

Questions for CAD that are no longer operating

54. If you are no longer operating as a CAD, what year did you close?
55. What is the main reason for why you are not a CAD any longer? (*multiple choice OK, rank in order of importance*)
56. Are you planning to reopen your CAD within the next year?

ANNEX 3. FOCUS CROP TRADE PERFORMANCE

TABLE I: STAPLES PRODUCTION IN PROFIT+ FOCUS DISTRICTS, 2009-13 VS. 2014-18

		AVERAGE, 2009-2013	MAIZE AVERAGE, 2014-2018****	MAIZE % INCREASE/ (DECREASE)	AVERAGE, 2009-2013	AVERAGE, 2014-2018****	GROUNDNUT % INCREASE/ (DECREASE)	AVERAGE, 2009-2013	AVERAGE, 2014-2018****	SOYBEAN % INCREASE/ (DECREASE)	AVERAGE, 2009-2013	AVERAGE, 2014-2018****	SUNFLOWER % INCREASE/ (DECREASE)
NATIONAL		2,617,673	2,968,680	13%	128,874	147,411	14%	162,265	272,426	68%	27,246	45,575	67%
CENTRAL		529,721	601,635	14%	15,649	22,399	43%	74,649	118,528	59%	1,757	3,998	128%
COPPERBELT		223,642	220,642	-1%	6,702	8,416	26%	29,776	54,473	83%	73	90	23%
EASTERN	Chadiza	41,931	53,369	27%	1,772	2,091	18%	2,040	7,747	280%	1,698	2,841	67%
	Chama *	17,761	-	n/a	676	-	n/a	5	-	n/a	14	-	n/a
	Chipata	137,588	153,917	12%	11,832	13,649	15%	905	7,499	729%	4,405	5,155	17%
	Katete	70,209	84,294	20%	3,166	4,681	48%	276	4,295	1457%	2,614	5,130	96%
	Lundazi	115,746	197,569	71%	8,454	11,074	31%	4,880	18,300	275%	4,588	7,569	65%
	Mambwe	10,943	14,075	29%	845	1,351	60%	9	166	1659%	142	359	153%
	Nyimba	28,546	34,034	19%	1,656	2,345	42%	158	133	-16%	763	1,224	60%
	Petauke	119,606	122,377	2%	7,004	6,613	-6%	104	1,430	1275%	4,730	5,461	15%
	Prov Total	535,226	627,892	17%	35,406	39,699	12%	8,377	37,228	344%	18,953	30,955	63%
LUAPULA		94,812	129,867	37%	12,703	13,668	8%	296	448	51%	30	11	-64%
LUSAKA	Chongwe	56,305	67,866	21%	1,066	1,988	87%	11,557	11,032	-5%	245	50	-80%
	Kafue	38,645	51,149	32%	332	832	151%	12,717	21,504	69%	160	115	-28%
	Luangwa	1,321	1,327	0%	50	24	-52%	0	-	-100%	6	0	-98%
	Lusaka	3,172	783	-75%	29	1	-95%	15	866	5662%	1	-	-100%
	Prov Total	99,443	120,076	21%	1,476	2,683	82%	24,290	33,254	37%	413	236	-43%
MUCHINGA **		216,201	262,512	21%	10,749	10,030	-7%	1,892	2,275	20%	751	716	-5%
NORTHERN		311,032	274,701	-12%	25,193	18,179	-28%	3,256	4,845	49%	1,561	595	-62%
NORTHWESTERN		133,818	167,149	25%	6,307	12,168	93%	768	456	-41%	19	14	-26%
SOUTHERN		522,892	486,413	-7%	17,357	16,415	-5%	20,003	20,694	3%	4,116	8,953	118%
WESTERN		80,607	77,796	-3%	3,783	3,753	-1%	92	224	144%	23	8	-66%

Source: Crop Forecast Surveys, 2009-2018

* Chama moved from Eastern Province to Muchinga Province in 2012

** Muchinga Province established in 2012

*** District-level breakdown of estimated production volumes not available in the 2016 Crop Forecast Survey

**** District averages for the 2014-2018 period exclude 2016 due to the CFS data gap

N.B.: 1. All data derived from CFS reports

2. No data available for Rufunsa or Chilanga

3. Data for Chibombo included in Central Province totals

TABLE II: MAIZE PRODUCTION IN PROFIT+ FOCUS DISTRICTS, 2009-13 VS. 2014-18														
MAIZE		2009	2010	2011	2012	2013	2014	2015	2016***	2017	2018	AVERAGE, 2009-2013	AVERAGE, 2014-2018****	% INCREASE/ (DECREASE)
	NATIONAL	1,887,010	2,795,486	3,020,380	2,852,687	2,532,800	3,350,671	2,618,221	2,873,052	3,606,549	2,394,907	2,617,673	2,968,680	13%
	CENTRAL	399,719	717,444	558,493	494,215	478,734	723,761	484,723	648,114	684,699	466,877	529,721	601,635	14%
	COPPERBELT	177,629	233,223	250,190	248,624	208,544	235,416	207,808	236,727	248,795	174,461	223,642	220,642	-1%
	EASTERN													
	Chadiza	28,128	37,214	42,951	51,340	50,022	61,135	51,345	n/a	76,979	24,018	41,931	53,369	27%
	Chama *	11,038	15,435	26,811	n/a	n/a	n/a	n/a	n/a	n/a	n/a	17,761	-	n/a
	Chipata	98,979	152,506	140,358	152,824	143,272	176,988	126,265	n/a	193,549	118,866	137,588	153,917	12%
	Katete	50,619	56,273	67,082	87,050	90,022	115,868	64,364	n/a	112,938	44,006	70,209	84,294	20%
	Lundazi	105,699	118,112	127,437	103,980	123,504	192,720	154,189	n/a	296,474	146,893	115,746	197,569	71%
	Mambwe	10,336	12,415	11,460	10,906	9,598	17,354	11,068	n/a	18,900	8,979	10,943	14,075	29%
	Nyimba	16,204	29,295	23,829	37,336	36,066	33,223	22,393	n/a	48,858	31,661	28,546	34,034	19%
	Petauke	80,341	119,305	144,488	134,090	119,804	148,293	122,175	n/a	133,715	85,324	119,606	122,377	2%
	Prov Total	401,343	540,555	584,415	577,525	572,289	745,580	551,799	500,920	881,413	459,747	535,226	627,892	17%
	LUAPULA	57,005	69,363	124,885	128,776	94,033	131,747	140,892	148,109	124,691	103,896	94,812	129,867	37%
	LUSAKA													
	Chongwe	47,744	59,835	61,929	57,752	54,263	75,552	49,302	n/a	85,132	61,477	56,305	67,866	21%
	Kafue	20,040	56,612	40,872	35,002	40,698	70,649	44,412	n/a	54,319	35,216	38,645	51,149	32%
	Luangwa	1,611	938	1,309	1,147	1,601	1,799	2,354	n/a	871	284	1,321	1,327	0%
	Lusaka	2,823	4,356	5,413	2,923	345	290	265	n/a	2,360	216	3,172	783	-75%
	Total	72,219	121,741	109,523	96,823	96,907	148,291	96,333	115,880	142,682	97,192	99,443	120,076	21%
	MUCHINGA **	n/a	n/a	n/a	226,989	205,412	244,978	245,091	242,546	324,918	255,025	216,201	262,512	21%
	NORTHERN	258,236	308,078	506,989	271,380	210,479	283,756	276,199	264,723	308,455	240,369	311,032	274,701	-12%
	NORTHWESTERN	98,804	130,860	150,820	156,077	132,527	160,866	190,433	179,855	153,514	151,078	133,818	167,149	25%
	SOUTHERN	365,226	582,984	639,541	573,176	453,532	597,999	372,450	448,187	652,273	361,155	522,892	486,413	-7%
	WESTERN	56,828	91,238	95,524	79,103	80,343	78,277	52,494	87,991	85,109	85,108	80,607	77,796	-3%
	* Chama moved from Eastern Province to Muchinga Province in 2012													
	** Muchinga Province established in 2012													
	*** District-level breakdown of estimated production volumes not available in the 2016 Crop Forecast Survey													
	**** District averages for the 2014-2018 period exclude 2016 due to the CFS data gap													
	N.B.: 1. All data derived from CFS reports													
	2. No data available for Rufunsa or Chilanga													
	3. Data for Chibombo included in Central Province totals													

TABLE III: GROUNDNUT PRODUCTION IN PROFIT+ FOCUS DISTRICTS, 2009-13 VS. 2014-18															
GROUNDNUT			2009	2010	2011	2012	2013	2014	2015	2016***	2017	2018	AVERAGE, 2009-2013	AVERAGE, 2014-2018****	% INCREASE/ (DECREASE)
	NATIONAL		120,564	164,602	139,388	113,026	106,792	143,592	111,429	131,562	168,699	181,772	128,874	147,411	14%
	CENTRAL		16,227	20,214	17,005	12,106	12,696	20,762	16,743	20,804	26,716	26,969	15,649	22,399	43%
	COPPERBELT		6,428	9,469	6,093	5,427	6,095	8,974	6,554	9,829	7,299	9,423	6,702	8,416	26%
	EASTERN	Chadiza	1,241	2,421	1,901	1,754	1,543	2,093	1,219	n/a	2,855	2,198	1,772	2,091	18%
		Chama *	989	1,584	810	n/a	n/a	n/a	n/a	n/a			676	-	n/a
		Chipata	13,382	12,592	10,114	11,757	11,316	12,321	7,040	n/a	20,794	14,442	11,832	13,649	15%
		Katete	2,409	4,829	2,400	3,079	3,114	3,922	2,519	n/a	5,874	6,407	3,166	4,681	48%
		Lundazi	8,728	12,867	6,851	5,925	7,900	11,108	5,889	n/a	13,338	13,961	8,454	11,074	31%
		Mambwe	1,093	1,016	672	780	663	936	743	n/a	2,109	1,616	845	1,351	60%
		Nyimba	1,449	2,084	1,259	1,942	1,545	2,040	1,891	n/a	2,996	2,455	1,656	2,345	42%
		Petauke	6,699	12,500	5,552	5,693	4,577	5,464	4,490	n/a	9,243	7,253	7,004	6,613	-6%
		Prov Total	35,990	49,893	29,558	30,930	30,658	37,884	23,792	31,278	57,208	48,333	35,406	39,699	12%
	LUAPULA		12,566	13,848	11,486	14,133	11,479	15,958	11,121	12,415	11,963	16,883	12,703	13,668	8%
	LUSAKA	Chongwe	1,164	1,220	975	848	1,122	1,345	1,488	n/a	1,537	3,583	1,066	1,988	87%
		Kafue	288	415	321	289	345	459	326	n/a	420	2,123	332	832	151%
		Luangwa	100	70	35	14	31	30	30	n/a	13	22	50	24	-52%
		Lusaka	33	20	88	1	1	2	0	n/a	1	2	29	1	-95%
		Prov Total	1,585	1,724	1,419	1,152	1,498	1,836	1,844	2,036	1,971	5,730	1,476	2,683	82%
	MUCHINGA **		N/A		N/A	10,817	10,681	10,965	9,458	7,245	9,454	13,030	10,749	10,030	-7%
	NORTHERN		30,071	34,864	31,004	16,211	13,814	17,408	19,743	16,312	14,183	23,249	25,193	18,179	-28%
	NORTHWESTERN		4,477	5,229	4,605	10,337	6,889	11,887	8,654	10,438	14,956	14,907	6,307	12,168	93%
	SOUTHERN		10,482	23,232	32,710	9,616	10,748	15,163	10,856	17,272	20,325	18,459	17,357	16,415	-5%
	WESTERN		2,736	6,138	5,508	2,298	2,234	2,755	2,664	3,932	4,625	4,790	3,783	3,753	-1%
* Chama moved from Eastern Province to Muchinga Province in 2012															
** Muchinga Province established in 2012															
*** District-level breakdown of estimated production volumes not available in the 2016 Crop Forecast Survey															
**** District averages for the 2014-2018 period exclude 2016 due to the CFS data gap															
N.B.: 1. All data derived from CFS reports															
2. No data available for Rufunsa or Chilanga															
3. Data for Chibombo included in Central Province totals															

TABLE IV: SOYBEAN PRODUCTION IN PROFIT+ FOCUS DISTRICTS, 2009-13 VS. 2014-18															
SOYBEAN			2009	2010	2011	2012	2013	2014	2015	2016***	2017	2018	AVERAGE, 2009-2013	AVERAGE, 2014-2018****	% INCREASE/ (DECREASE)
	NATIONAL		118,794	111,888	116,539	203,038	261,063	214,179	226,323	267,490	351,416	302,720	162,265	272,426	68%
	CENTRAL		45,068	43,342	43,918	99,563	141,356	96,518	101,704	109,747	145,049	139,623	74,649	118,528	59%
	COPPERBELT		22,703	12,768	18,082	50,397	44,931	37,610	46,369	69,376	59,080	59,928	29,776	54,473	83%
	EASTERN	Chadiza	1,870	2,246	1,435	1,279	3,370	3,874	4,255	n/a	15,193	7,668	2,040	7,747	280%
		Chama *	0	12	12	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5	-	n/a
		Chipata	733	426	607	923	1,836	1,249	1,407	n/a	16,855	10,487	905	7,499	729%
		Katete	64	5	69	219	1,022	1,513	905	n/a	9,008	5,755	276	4,295	1457%
		Lundazi	3,973	5,059	5,170	2,892	7,305	10,483	8,978	n/a	32,803	20,938	4,880	18,300	275%
		Mambwe	22	1	8	-	15	136	4	n/a	421	101	9	166	1659%
		Nyimba	132	37	7	132	483	44	2	n/a	275	213	158	133	-16%
		Petauke	43	103	19	101	254	236	412	n/a	2,912	2,160	104	1,430	1275%
		Prov Total	6,838	7,888	7,328	5,546	14,286	17,534	15,963	27,856	77,467	47,321	8,377	37,228	344%
	LUAPULA		253	170	91	202	766	430	251	307	762	491	296	448	51%
	LUSAKA	Chongwe	9,408	6,851	13,810	8,927	18,791	11,799	12,713	n/a	12,351	7,263	11,557	11,032	-5%
		Kafue	14,527	14,397	9,447	14,306	10,908	20,439	23,905	n/a	22,070	19,601	12,717	21,504	69%
		Luangwa	2	-	-	0	0	-	-	n/a	-	-	0	-	-100%
		Lusaka	0	2	73	0	0	-	838	n/a	1,462	1,164	15	866	5662%
		Prov Total	23,937	21,250	23,330	23,233	29,699	32,237	37,456	32,666	35,883	28,028	24,290	33,254	37%
	MUCHINGA **		n/a	n/a	n/a	1,533	2,251	2,246	2,483	1,327	2,717	2,602	1,892	2,275	20%
	NORTHERN		2,706	5,178	2,178	2,921	3,295	4,742	6,348	3,368	4,431	5,334	3,256	4,845	49%
	NORTHWESTERN		632	934	552	512	1,210	580	299	225	645	532	768	456	-41%
	SOUTHERN		16,628	20,318	20,968	19,044	23,056	22,204	15,351	22,463	25,138	18,315	20,003	20,694	3%
	WESTERN		28	39	92	89	212	78	99	155	243	547	92	224	144%
* Chama moved from Eastern Province to Muchinga Province in 2012															
** Muchinga Province established in 2012															
*** District-level breakdown of estimated production volumes not available in the 2016 Crop Forecast Survey															
**** District averages for the 2014-2018 period exclude 2016 due to the CFS data gap															
N.B.: 1. All data derived from CFS reports															
2. No data available for Rufunsa or Chilanga															
3. Data for Chibombo included in Central Province totals															

TABLE V: SUNFLOWER PRODUCTION IN PROFIT+ FOCUS DISTRICTS, 2009-13 VS. 2014-18															
SUNFLOWER			2009	2010	2011	2012	2013	2014	2015	2016***	2017	2018	AVERAGE, 2009-2013	AVERAGE, 2014-2018****	% INCREASE/ (DECREASE)
	NATIONAL		33,653	26,420	21,954	20,468	33,733	34,264	34,726	61,073	50,220	47,594	27,246	45,575	67%
	CENTRAL		1,906	2,507	2,287	1,120	965	2872	1,842	4,131	3,101	8,043	1,757	3,998	128%
	COPPERBELT		30	123	83	61	71	29	18	182	118	103	73	90	23%
	EASTERN	Chadiza	1,702	2,116	1,062	1,046	2,563	2381	2,903	n/a	3,372	2,707	1,698	2,841	67%
		Chama *	7	39	24	n/a	n/a	n/a	n/a	n/a	n/a	n/a	14	-	n/a
		Chipata	6,516	4,830	2,964	3,114	4,600	4441	5,392	n/a	6,548	4,238	4,405	5,155	17%
		Katete	3,042	1,897	1,586	2,423	4,121	4027	5,137	n/a	6,306	5,047	2,614	5,130	96%
		Lundazi	7,515	3,667	3,953	1,808	5,999	6488	4,901	n/a	12,998	5,888	4,588	7,569	65%
		Mambwe	180	295	56	57	120	312	135	n/a	548	440	142	359	153%
		Nyimba	576	619	309	776	1,538	1228	717	n/a	1,180	1,772	763	1,224	60%
		Petauke	5,122	4,901	3,671	3,746	6,208	5176	4,812	n/a	5,288	6,567	4,730	5,461	15%
		Prov Total	24,660	18,363	13,626	12,969	25,149	24053	23,997	43,825	36,241	26,659	18,953	30,955	63%
	LUAPULA		18	16	5	34	79	6	8	15	16	10	30	11	-64%
	LUSAKA	Chongwe	364	325	467	66	4	24	15	n/a	24	137	245	50	-80%
		Kafue	94	86	165	21	434	25	14	n/a	58	362	160	115	-28%
		Luangwa	0	-	-	0	32	0	-	n/a	-	1	6	0	-98%
		Lusaka	2	3	-	0	0	0	-	n/a	-	-	1	-	-100%
		Prov Total	460	415	632	87	470	49	29	518	82	500	413	236	-43%
	MUCHINGA **		n/a	n/a	n/a	592	911	432	1,027	792	743	588	751	716	-5%
	NORTHERN		1,268	2,115	2,103	1,698	620	764	523	444	339	905	1,561	595	-62%
	NORTHWESTERN		34	14	10	23	14	15	1	1	16	37	19	14	-26%
	SOUTHERN		5,264	2,817	3,202	3,853	5,443	6042	7,276	11,157	9,556	10,735	4,116	8,953	118%
	WESTERN		12	51	6	33	11	2	5	7	9	15	23	8	-66%
* Chama moved from Eastern Province to Muchinga Province in 2012															
** Muchinga Province established in 2012															
*** District-level breakdown of estimated production volumes not available in the 2016 Crop Forecast Survey															
**** District averages for the 2014-2018 period exclude 2016 due to the CFS data gap															
N.B.: 1. All data derived from CFS reports															
2. No data available for Rufunsa or Chilanga															
3. Data for Chibombo included in Central Province totals															

TABLE VI: TRADE FLOWS OF PROFIT+ FOCUS COMMODITIES, 2009-13 VS. 2014-18														
COMMODITY	TRADE FLOW	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	AVERAGE 2009-2013	AVERAGE 2014-2018	% INCREASE/ (DECREASE)
MAIZE	IMPORT	41,929,331	803,163	733,360	947,645	4,028,743	2,206,632	1,026,322	1,671,534	1,536,166	1,533,639	9,688,448	1,594,859	-84%
	EXPORT	19,827,271	59,583,753	496,326,011	725,587,636	173,572,300	95,442,821	722,774,873	635,165,891	326,998,458	58,745,026	294,979,394	367,825,414	25%
GROUNDNUT	IMPORT	798,526	286,429	4,348,187	602,684	6,925,466	3,956,198	3,765,253	1,125,616	286,732	476,284	2,592,258	1,922,017	-26%
	EXPORT	141,435	738,630	1,097,610	602,684	1,693,801	3,560,484	1,122,425	599,201	1,247,806	2,548,814	854,832	1,815,746	112%
SOYBEAN	IMPORT	189,849	27,000	2,426,165	504,944	1,449,373	904,363	1,545,309	1,155,146	32,215	300,879	919,466	787,582	-14%
	EXPORT	4,470,898	14,445,460	1,242,300	2,445,650	2,431,016	25,875,253	11,822,506	5,885,601	83,748,066	9,841,182	5,007,065	27,434,522	448%
SUNFLOWER	IMPORT	780	32,714	6,931	2,084	54,490	4,879	13,854	3,236	1,325,161	3,715	19,400	270,169	1293%
	EXPORT	42,505	65,000	-	1,500	-	59,700	445,000	2,968,578	30,201	28,040	21,801	706,304	3140%
ONION	IMPORT	1,210,060	388,118	267,672	6,575,576	5,674,970	7,851,525	10,763,938	12,828,127	8,076,282	5,358,680	2,823,279	8,975,710	218%
	EXPORT	437,765	207,021	-	28,773	1,218	4,039	12,500	96	187,510	-	134,955	40,829	-70%
TOMATO	IMPORT	10,451	28,296	3,730	77,992	55,531	21,200	11,218	286,866	53,092	173,989	35,200	109,273	210%
	EXPORT	720	710	-	-	340	74	1,500	17,346	32,001	-	354	10,184	2777%
HONEY	IMPORT	2,560	1,015	1,780	3,139	4,058	3,686	4,980	29,813	2,485	6,021	2,510	9,397	274%
	EXPORT	210,693	637,446	213,230	440,644	388,317	163,795	511,906	864,207	827,282	981,658	378,066	669,770	77%
COMPOSITE	IMPORT	44,141,557	1,566,735	7,787,825	8,714,064	18,192,631	14,948,483	17,130,874	17,100,338	11,312,133	7,853,207	16,080,562	13,669,007	-15%
	EXPORT	25,131,287	75,678,020	498,879,151	729,106,887	178,086,992	125,106,166	736,690,710	645,500,920	413,071,324	72,144,720	301,376,467	398,502,768	32%
SOURCE: United Nations Commodity Trade Statistics Database (COMTRADE); all volumes in kg														

ANNEX 4. DATA TABLES FROM THE CAD SURVEY

Table A: Active and inactive CADs by District and Gender

District	Operating a CAD (Active)			Not Operating a CAD (Inactive)			Total
	Male	Female	Total operating CADs	Male	Female	Total not operating CADs	
Lundazi	12	8	20 (53%)	11	7	18 (47%)	38 (100%)
Chipata	10	9	19 (41%)	11	16	27 (59%)	46 (100%)
Katete	7	5	12 (26%)	26	9	35 (74%)	47 (100%)
Petauke	15	10	25 (51%)	12	12	24 (49%)	49 (100%)
Total	44 (58%)	32 (42%)	76 (100%)	60 (58%)	44 (42%)	104 (100%)	180

Table B: Year active and inactive CADs started receiving training from PROFIT +

Year started obtaining trained	Active CADs			Inactive CAD		
	Male	Female	Total	Male	Female	Total
2012 -2014	59%	53%	57%	47%	39%	43%
2015	27%	31%	29%	30%	36%	33%
2016-2017	14%	16%	14%	23%	25%	24%
Total	100% (44)	100% (32)	100% (76)	100% (60)	100% (44)	100% (104))

Table C: Type of input active CADs are currently selling

Sale of Input	Male	Female	Average
Sale of seed	100% (41)	94% (30)	97% (71)
Sale of fertilizer	49% (20)	28% (9)	39% (29)
Sale of agricultural chemicals	85% (35)	63% (20)	74% (55)
Sale of agricultural equipment	56% (23)	28% (9)	42% (32)
Sale of veterinary products	68% (28)	38% (12)	53% (40)

Table D: Active CADs that PROFIT+ linked with input providers

Input provider PROFIT+ linked CADs with	Male	Female	Average
Seeds	98% (43)	91% (29)	95% (72)
Fertilizers	36% (16)	9% (3)	23% (19)
Agricultural chemicals	68% (30)	38% (12)	53% (42)
Agricultural equipment	27% (12)	6% (2)	17% (14)
Other	2% (1)	6% (2)	4% (3)

Table E: Type of input active CADs sold at the time PROFIT+ ended

	Male CADs	Female CADs	Average
Sale of seed	100% (44)	97% (31)	99% (75)
Sale of fertilizer	43% (19)	38% (12)	41% (31)
Sale of agricultural chemicals	84% (37)	66% (21)	75% (58)
Sale of equipment	48% (21)	25% (8)	37% (29)
Sale of veterinary products	73% (32)	44% (14)	59% (46)

Table F: Support from PROFIT+ to active CADs to connect with output buyer

	Male CADs	Female CADs	Total
PROFIT+ connected CAD to output buyer	59% (26)	31 (10)	47% (36)
Currently aggregating for the output buyer PROFIT+ connected CAD to	41% (18)	22% (7)	33% (25)
Currently aggregating for an output buyer ⁸⁰	59% (26)	47% (15)	54% (41)

⁸⁰ Includes active CADs that were connected to an output buyer by PROFIT+ and CADs that have secured connections with an output buyer through other channels than PROFIT+

Table G: Active CAD's observation in client's changes since they started aggregating their products

Type of change in clients since active CAD started aggregating their products	% of active CADs that have observed a change in clients since started aggregating
Less post-harvest loss	66% (27)
Change in crop client's plant to meet the demand of what crops are aggregated	73% (30)
Purchase more input to improve yield	83% (34)
Adopt better farming techniques to improve yield	95% (39)
Cultivate more land	66% (27)
Greater earnings	95% (39)

Table H: Change in number of clients active CADs have since PROFIT+ ended

	Male CADs	Female CADs	Total CADs
More clients	81.8% (36)	68.8% (22)	76.3% (58)
Less clients	6.8% (3)	12.5% (4)	9.2% (7)
About the same	11.4% (5)	18.8% (6)	14.5% (11)
Total	100.0% (44)	100.0% (32)	100.0% (76)

Table I: Active CADs that sell more, about the same or less volume of input today compared with when PROFIT+ ended in 2017

	More volume			About the same volume			Less volume		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Seed ⁸¹	65%	71%	68%	12%	16%	13%	23%	13%	19%
Fertilizer	43%	36%	41%	29%	18%	25%	29%	46%	34%
Agricultural chemicals	74%	52%	66%	16%	19%	17%	10%	29%	17%
Agricultural equipment	40%	33%	38%	40%	11%	32%	20%	56%	29%
Veterinary products	76%	67%	73%	17%	8%	15%	7%	25%	12%

Table J: Changes in active CADs' business in the last two years

	Gender		Total
	Male CADs	Female CADs	
CAD business is expanded	75% (33)	47% (15)	63% (48)
CAD business remains the same	14% (6)	50% (16)	29% (22)
CAD business is smaller	11% (5)	3% (1)	8% (6)
Total	100.0% (44)	100.0% (32)	100.0% (76)

Table K: Active CADs with Employees

	Male CADs	Female CADs	Total
CADs with employee(s) when PROFIT+ ended in 2017	41% (18)	28% (9)	36% (27)
CADs with employee(s) in October 2019	59% (26)	28% (9)	46% (35)

⁸¹ Active CADs reported about the same changes in volume as in sales value. The table reports volume. Value of sales for seeds: more (66 percent) about the same (17 percent), less (17 percent). Value of sales for fertilizer: more (41 percent) about the same (25 percent), less (34 percent). Value of sales for agricultural chemicals: more (66 percent) about the same (15 percent), less (19 percent). Value of sales for agricultural equipment: more (38 percent) about the same (30 percent), less (32 percent). Value of sales for veterinary products: more (73 percent) about the same (17 percent), less (10 percent).

Table L: Active CADs' spending on family since started the agro-dealership

	Male CADs	Female CADs	Total
Spending more on family	70% (31)	69% (22)	70% (53)
Spending the same on family	16% (7)	25% (8)	20% (15)
Spending less on family	14% (6)	6% (2)	10% (8)
Total	100% (44)	100% (32)	100% (76)

Table M: What active CADs spend more money on

	Male	Female	Total
School fees	93% (41)	94% (30)	93% (71)
Health care	14% (6)	13% (4)	13% (10)
Food	57% (25)	66% (21)	61% (46)
Home improvements	25% (11)	41% (13)	32% (24)
Farm Equipment	16% (7)	13% (4)	15% (11)
Farm animals	16% (7)	13% (4)	15% (11)
Consumer durables	18% (8)	0% (0)	11% (8)
Electricity	11% (5)	0% (0)	7% (5)
Vehicle (car or small truck)	7% (3)	3% (1)	5% (4)
Savings	11% (5)	3% (1)	8% (6)

Table N: Active CADs involvement in community organizations since starting the CAD

	Male	Female	Total
Not involved in any community organization	16% (7)	19% (6)	17% (13)
Same involvement in community organization as before started the CAD	7% (3)	16% (5)	11% (8)
Greater involvement in community organization (member)	43% (19)	41% (13)	42% (32)
Greater involvement in community organization (leader)	57% (25)	44% (14)	51% (39)

Table O: Who in the household decides how the money made from the CAD is spent (smaller investment for household needs)

Decisions regarding smaller investments	Male CAD	Female CAD	Total
CAD decides by himself/herself	14% (6)	53% (17)	30% (23)
CAD's spouse decides	0% (0)	3% (1)	1% (1)
Joint decision with spouse	86% (38)	41% (13)	67% (51)
Other family member decides	14% (6)	9% (3)	12% (9)

Table P: Who in the household decides how the money made from the CAD is spent (larger investment for household needs)

Decisions regarding larger investments	Male CAD	Female CAD	Total
CAD decides by himself/herself	16% (7)	50% (16)	30% (23)
CAD's spouse decides	2% (1)	3% (1)	3% (2)
Joint decision with spouse	82% (36)	44% (14)	66% (50)
Other family member decides	18% (8)	9% (3)	15% (11)

Table Q: Ownership of CAD by Gender

Ownership Category	Male	Female	Total
I do	71% (31)	78%(25)	74% (56)
I do together with my spouse	23% (10)	13% (4)	18% (14)
I do together with other family member	4% (2)	9% (3)	7% (5)
Cooperative	2% (1)	0	1% (1)

Table R: Time Spent on Household Responsibilities since Starting the CAD

	Active Male CADs	Active Female CADs	Total Active CADs
Same amount of time	41% (18)	31% (10)	37% (28)
More time	41% (18)	25% (8)	34% (26)
Less time	18% (8)	44% (14)	29% (22)
Total	100 % (44)	100 % (32)	100 % (76)

Table S: Household Responsibilities since Active CAD Started CAD Business

	Active Male CADs	Active Female CADs	Total Active CADs
Spouse	12% (1)	36% (5)	27% (6)
Other family member	88% (7)	64% (9)	73% (16)
Total	100% (8)	100% (14)	100% (22)