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

IMPACT EVALUATION OF GENDER AND GROUNDNUT VALUE CHAINS IN ZAMBIA

Baseline Report
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List of Acronyms

AEW	Agricultural Extension Worker
BLA	Better Life Alliance
COMACO	Community Markets for Conservation
CSO	Central Statistical Office (Zambia)
DHS	Demographic and Health Survey
DID	Difference-in-Differences
DWA	District Women's Association
EPFC	Eastern Province Farmer's Cooperative
FANTA	Food and Nutrition Technical Assistance
FTF FEEDBACK	Feed the Future FEEDBACK
FGD	Focus Group Discussion
FTF	Feed the Future
GIS	Geographic Information Systems
GLAS	Gender, Land and Assets Survey
HH	Household
IAPRI	Indaba Agricultural Policy Research Institute
IDI	In Depth Interview
IRB	Institutional Review Board
KG	Kilogram
MT	Metric Tonne
NGO	Nongovernmental Organization
ODK	Open Data Kit
PBS	Population Based Survey
PROFIT+	Production, Finance & Technology Plus
PSU	Primary Sampling Unit
RALS	Rural Agriculture Livelihoods Survey
SEA	Standard Enumeration Area
UNC	University of North Carolina
USAID	United States Agency for International Development
WCS	Wildlife Conservation Society
WEAI	Women's Empowerment in Agriculture Index

Executive Summary

Feed the Future Zambia aims to assist an estimated 263,000 vulnerable Zambian women, children, and family members to escape poverty and hunger. Two mechanisms operating under Feed the Future Zambia are the Production, Finance, & Technology Plus (PROFIT+) project and the Better Life Alliance (BLA) project. PROFIT+ aims to improve smallholder productivity, expand markets and trade, and increase private sector investment in agriculture. The project is targeting 200,000 smallholder farmers in the Eastern Province districts of Chipata, Katete, Lundazi, and Petauke and is focused on the value chains of maize, soybean, sunflower, groundnuts, tomato, and onion. BLA's goal is to increase sustainable, market-led growth across the entire food production and market chain, resulting in improved food and income security for 40,000 households in selected environmentally sensitive areas in Chipata, Katete, Lundazi, Mambwe, Nyimba, and Petauke districts.

Both mechanisms have adopted a gender mainstreaming approach to maximize positive impact on female farmers, and to prevent women from being displaced from value chains as commercialization increases. The Zambia Gender and Groundnut Value Chains (GNVC) impact evaluation aims to test the hypothesis that the gender interventions implemented by PROFIT+ and BLA will assist in maintaining or increasing women's control over production, marketing/sales, and proceeds from groundnuts as groundnut commercialization increases. This report presents the results from a baseline survey administered as part the Zambia GNVC impact evaluation, which is being undertaken under the auspices of the Feed the Future FEEDBACK (FTF FEEDBACK) project.

Zambia GNVC

Impact Evaluation Questions

- Do women maintain control over production of groundnuts as commercialization efforts are expanded?
- What interventions might assist in maintaining women's control over production of groundnuts?
- Do women maintain control over marketing/sales of groundnuts and proceeds as commercialization efforts are expanded?
- What interventions might assist in maintaining women's control over marketing/sales of groundnuts and control over the proceeds?

The baseline survey included both quantitative and qualitative components. The quantitative survey instrument contained a household questionnaire, as well as individual women's and men's questionnaires. The survey was administered in the PROFIT+/BLA project area (project domain) and in a non-project comparison area (comparison domain) within Eastern Province as well as the southern portion of neighboring Chama district. Data collection occurred from August 9 to October 1, 2014. A total of 4,000 households were selected for participation in the study—2,000 in each domain. The main adult (age 18 or over) female decisionmaker in all selected households and the main adult male decisionmaker in a sub-sample of approximately 38 percent of selected households

were recruited for interview. Household-level response rates were 98.6 percent and 98.8 percent in the project and comparison domains, respectively. Individual women's response rates were 98.1 percent (project domain) and 97.7 percent (comparison domain), and individual men's response rates were 92.3 percent (project domain) and 90.4 percent (comparison domain).

A qualitative component, which aimed to contextualize quantitative findings and explore household gender dynamics, included 36 in depth interviews (IDIs) and 12 focus groups discussions (FGDs) at six sites within the project domain. Data collection occurred from October 23 to November 8, 2014.

Household Characteristics

Eligibility for the study required that households planted or grew groundnuts in the 2012/2013 agricultural season and contained both an adult female and male member. Over 95.0 percent of study households in both domains were headed by a male member. Nearly half of all household members were under age 15, and the mean household size was 6.1 members in both domains.

Most households resided in dwellings with grass thatched or iron sheet roofs and earth/mud floors. While less than one-quarter of households in either domain had electricity and nearly all relied on firewood for cooking fuel, over 70.0 percent had private pit latrines and access to an improved water source.

The majority of households in both domains were within five kilometers of mobile cell services, a basic school, a clinic or health center, and a feeder road. A higher proportion of households in the project domain were within five kilometers of key services than those in the comparison domain. A notable difference between domains was distance to a tarred/tarmac road. In the project domain, 32.1 percent of households were within five kilometers, as compared to only 9.1 percent of households in the comparison domain.

Over a third of households in both domains experienced failure of business/crops, a serious illness or injury to a household member, or destruction of property in the past three years. The most common positive economic shock experienced in the same time period was an increase in the price for agricultural products/very good harvest.

The mean total area of households' cultivated/cropped fields in the 2012/2013 agricultural season was 2.41 hectares in the project domain and 2.22 hectares in the comparison domain. Virtually all households had a field cultivated/ cropped with groundnuts (a condition for eligibility in the survey). The mean total area of households' groundnut fields was 0.42 hectares in the project domain and 0.31 hectares in the comparison domain.

Individual Respondent Characteristics

The majority of individual respondents were under 40 years old. A higher proportion of female respondents in both domains were under 40 compared to the proportion of males. Almost all individual respondents (over 93.0 percent) were married or cohabitating. A higher proportion of respondents in the comparison domain were in a polygamous marriage/cohabitation.

Male respondents had higher educational attainment than females. The median years of complete education for males was six in both domains. In the project domain, the median for females was four years; in the comparison domain it was three years.

The median number of living children per respondent was four in the project domain and five in the comparison domain. Over half of respondents in both domains had a youngest child that was under 5 years of age.

Groundnut Production and Sales

The primary outcomes of interest to the evaluation are women's participation in decisionmaking related to groundnut production, woman's participation in marketing/sales, commercialization of groundnuts, mean total household sales of groundnuts, and women's control over proceeds from groundnut sales. Key findings related to each of these outcomes are as follows.

Women's Participation in Production Decisionmaking

Females in the comparison domain more frequently reported that they were involved (either solely or jointly) in the decision to grow groundnuts in the 2012/2013 agricultural season than those in the project domain, while there was little variation across domains among male respondents that reported their partner/wife was involved in the decision. Females in both domains were more likely to report they were involved in the decision to grow groundnuts than males in their same domain. Females reported that they made the decision (either solely or jointly) to grow groundnuts for 55.8 percent of households' groundnut fields[1] in the project domain, while males reported their partner/wife made this decision for only 43.9 percent of the fields. In the comparison domain, females reported that they were involved in the decision to grow groundnuts for 61.3 percent of households' groundnut fields, while males reported their partner/wife was involved in making the decision for only 42.4 percent of the fields (see Figure ES.1).

[1] Note that the term 'groundnut field' (rather than 'the field on which groundnuts were grown in the 2012/2013 agricultural season') is used for convenience. Whatever portion of a household's land is planted with groundnuts in a given agricultural season is called the 'groundnut field.' Thus, the location and size of the 'groundnut field' can change from season to season, depending on how much and where a household decides to plant (or not) groundnuts. In addition, a household may have more than one groundnut field.

Females in the comparison domain were also more likely than those in the project domain to report they themselves were involved (either solely or jointly) in deciding which groundnut seed variety to plant in the 2012/2013 season, while there was little variation across domains among male respondents that reported their partner/wife was involved in the decision. In addition, females in both domains were more likely to report women were involved in deciding which groundnut seed variety to plant than males in their same domain. Females reported that they were involved in making the decision for 66.3 percent of households' groundnut fields in the project domain; males reported their partner/wife was involved in making the decision for 55.1 percent of the fields. In the comparison domain, females reported they were involved in making the decision for 71.9 percent of households' groundnut fields; males reported their partner/wife was involved in making the decision for only 56.6 percent of the fields (see Figure ES.2).

Figure ES.1. Percentage of households' groundnut fields where the decision to grow groundnuts was made solely or jointly by women in the 2012/2013 season

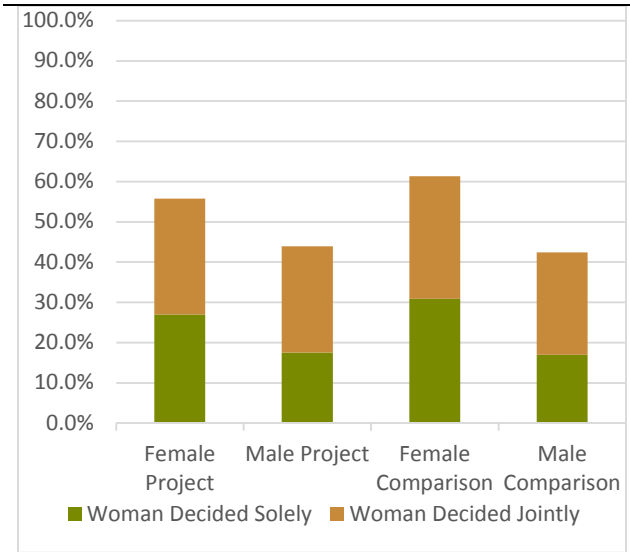
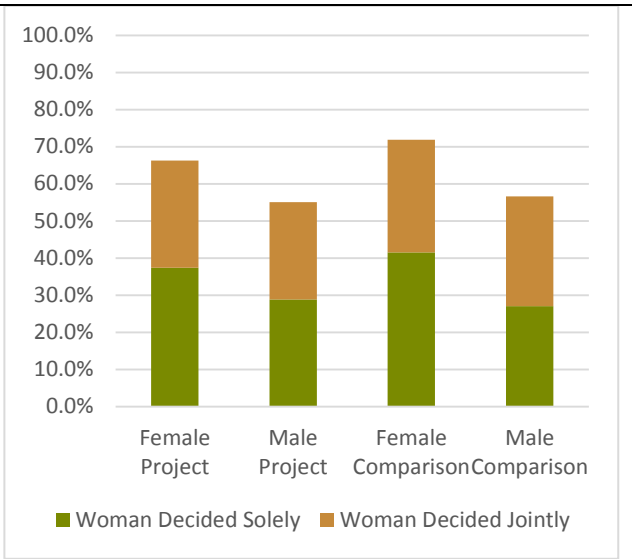


Figure ES.2. Percentage of households' groundnut fields where the decision of which groundnut seed variety to plant was made solely or jointly by women in the 2012/2013 season



Qualitative findings reveal that when women report they are the sole decisionmaker for decisions related to groundnut production, they often explain that it is because they place greater value on the crop due to its importance to their children's nutrition, to cooking in general, and to addressing household needs. As one female respondent explained, *"It's the woman who has the passion for groundnuts."* When men report women as the sole decisionmaker for groundnut production-related decisions, it is often with the acknowledgement that they are focused on cash crops. As one male respondent explained, *"We as men know that we focus much*

more on the production of maize, and not on the production of groundnuts. Women on the other hand, put a lot of attention on the production of groundnuts."

When qualitative respondents (both male and female) reported that groundnut production-related decisions were made jointly by husbands and wives, they stressed the importance of maintaining peace and avoiding conflict in the household.

Women's Participation in Groundnut Sales

A slightly higher proportion of respondents in the comparison domain reported women solely or jointly decided to sell groundnuts from February 2013 to April 2014. There was little variation by sex of respondent within the same domain. Females reported that they solely or jointly decided to sell groundnuts from 59.4 percent of households' groundnut fields in the project domain, and males reported that their partner/wife solely or jointly made the decision to sell from 62.2 percent of the fields. In the comparison domain, females reported that they solely or jointly decided to sell groundnuts from 64.7 percent of households' groundnut fields, and males reported that their partner/wife was involved in making the decision to sell from 65.3 percent of the fields (see Figure ES.3).

A higher proportion of female respondents in the comparison domain reported women solely or jointly sold groundnuts from February 2013 to April 2014 compared to females in the project domain. There was little variation across domains among male respondents that reported their partner/wife solely or jointly sold groundnuts. In addition, a higher proportion of female respondents in both domains reported that they solely or jointly sold groundnuts compared to the proportion of males in their same domain that reported their partner/wife solely or jointly sold. Females reported that they solely or jointly sold groundnuts from 55.8 percent of households' groundnut fields in the project domain, and males reported that their partner/wife solely or jointly sold from 48.1 percent of the fields. In the comparison domain, females reported that they solely or jointly sold groundnuts from 61.9 percent of households' groundnut fields and males reported that their partner/wife solely or jointly sold from 50.2 percent of the fields. (see Figure ES.4).

Qualitative data suggest that women more often handle sales that occur at the homestead than men, who more often handle sales that occur away from the homestead. One factor contributing to the latter is the need to transport the crop. Several qualitative respondents explained that transportation of the crop was often done by bicycle, which was described by both sexes as difficult for women.

Figure ES.3. Percentage of households' groundnut fields where women solely or jointly decided to sell groundnuts from February 2013-April 2014

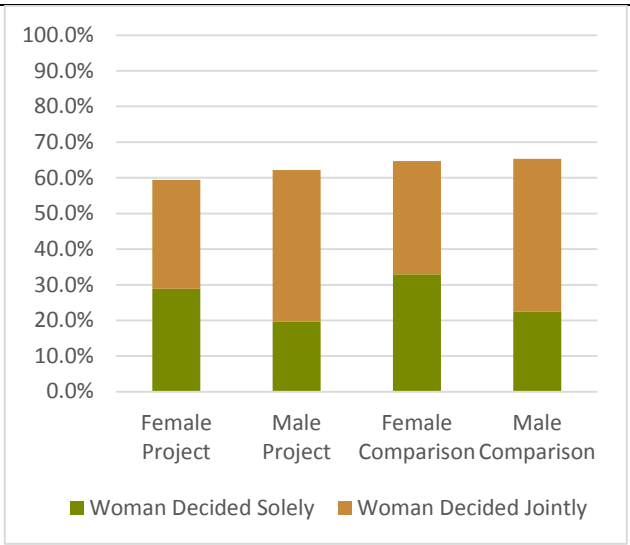
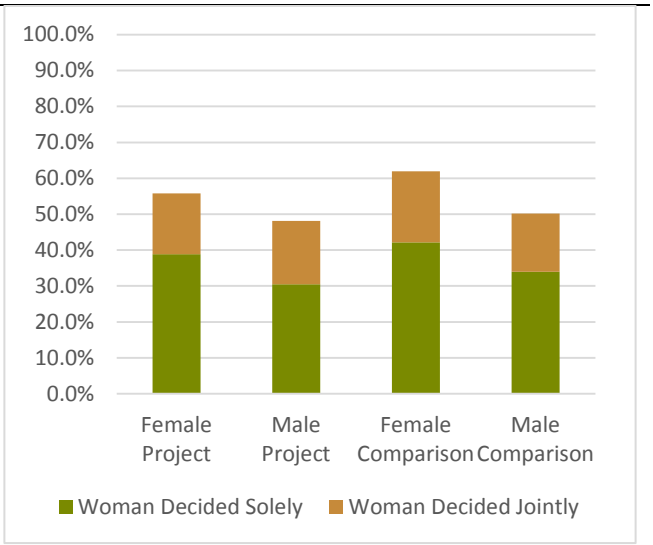


Figure ES.4. Percentage of households' groundnut fields where women solely or jointly sold groundnuts from February 2013-April 2014



Commercialization of Groundnuts

The percentage of households selling groundnuts from February 2013 to April 2014 was notably higher in the project domain than the comparison domain. In the project domain, 46.8 percent of females and 51.2 percent of males reported their household sold groundnuts; in the comparison domain, only 31.0 percent of females and 30.2 percent of males reported the same (see Figure ES.5).

Qualitative data indicate that in deciding how much of the groundnut harvest to sell, households consider the size of the harvest, the amount needed for home consumption, and the amount needed to be held back for seed for the next season. Other factors include the size of the household need being addressed by the sale and price. The decision to sell is also heavily impacted by market availability. Some qualitative respondents explained that the lack of a market in their area meant that they did not sell groundnuts, or only sold to other households or the occasional trader that happened by.

Mean Total Household Sales of Groundnuts

Mean total household sales of shelled groundnuts (among respondents who reported their household sold shelled groundnuts) from February 2013 to April 2014 were markedly higher in the project domain. Males in both domains reported higher mean total sales than females in their same domain. In the project domain, the mean total household sale was 141.7 kilograms as reported by females and 176.7 kilograms as reported by males. In the comparison domain, it

was 102.2 kilograms as reported by females and 129.8 kilograms as reported by males (see Figure ES.6).

Mean total household sales of unshelled groundnuts (among respondents who reported their household sold unshelled groundnuts) from February 2013 to April 2014 were also higher in the project domain, though the difference was not as great as with shelled groundnuts. Again, males in both domains reported higher mean totals than females in their same domain. In the project domain, the mean total household sale was 101.0 kilograms as reported by females and 124.1 kilograms as reported by males. In the comparison domain, it was 92.2 kilograms as reported by females and 116.9 kilograms as reported by males (see Figure ES.6).

Figure ES.5. Percentage of households that sold groundnuts from February 2013-April 2014

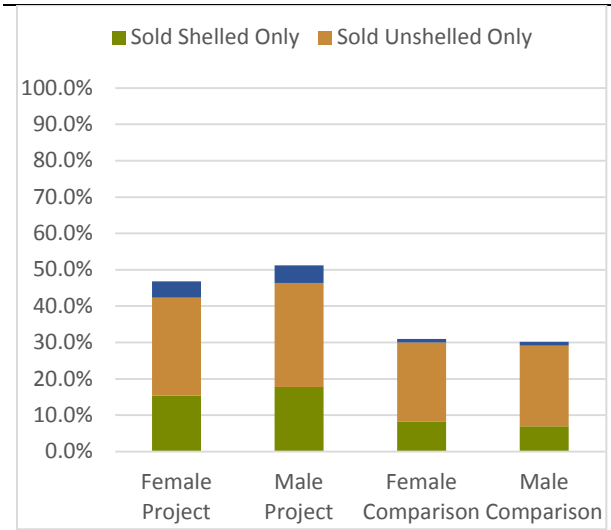
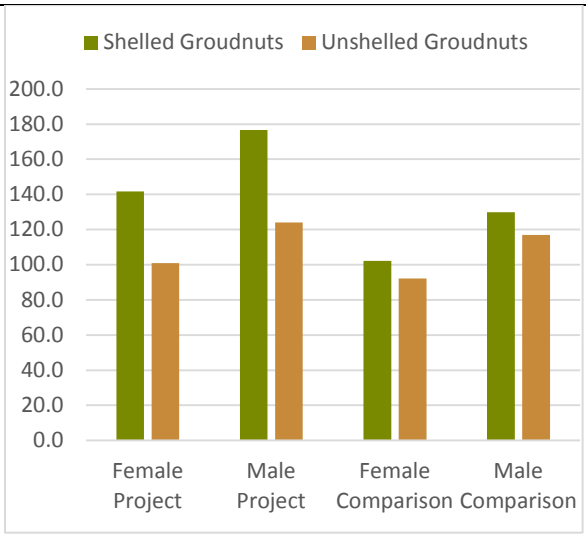


Figure ES.6. Mean total household sales (kilograms) of groundnuts from February 2013-April 2014



Women's Control over Proceeds from Groundnut Sales

A slightly higher proportion of males in the project domain than the comparison domain reported that their partner/wife was involved (either solely or jointly) in deciding how to use proceeds from the largest sale of shelled groundnuts from February 2013 to April 2014. There was little variation across domains among females who reported they were involved in the decision of how to use the proceeds. Of respondents who reported their household sold shelled groundnuts from February 2013 to April 2014, 64.7 percent of females and 71.3 percent of males in the project domain reported women were involved in deciding how to use proceeds from the largest sale. In the comparison domain, 64.5 percent of females and 65.6 percent of males reported the same (see Figure ES.7).

A slightly higher proportion of females in the comparison domain than the project domain reported they were solely or jointly involved in deciding how to use proceeds from the largest sale of unshelled groundnuts. There was little variation across domains among males who reported their partner/wife was involved in the decision. Of respondents that reported their household sold unshelled groundnuts from February 2013 to April 2014, 65.7 percent of females and 66.7 percent of males in the project domain reported women were involved in deciding how to use proceeds from the largest sale. In the comparison domain, 69.1 percent of females and 65.2 percent of males reported the same (see Figure ES.8).

Figure ES.7. Percentage of respondents that reported women solely or jointly decided how to use proceeds from the largest sale of shelled groundnuts from February 2013-April 2014

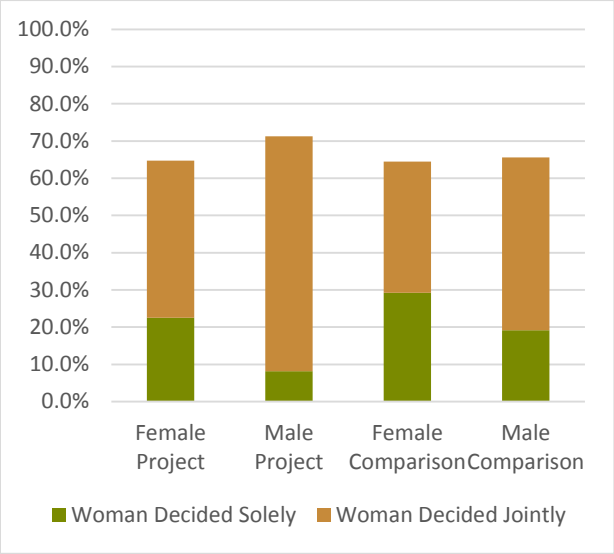
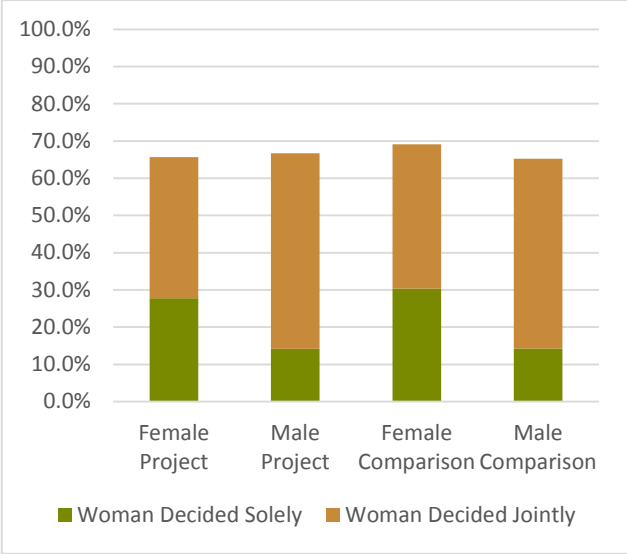


Figure ES.8. Percentage of respondents that reported women solely or jointly decided how to use proceeds from the largest sale of unshelled groundnuts from February 2013-April 2014



Both male and female qualitative respondents emphasized the importance of joint household decisionmaking around use of proceeds from groundnut sales. As one female respondent explained, *"We sit down and talk about how we will use the money . . . We have to see what is required, what we were growing those groundnuts for in the first place."* Another male respondents stated, *"You cannot make a budget alone as a man, you need to involve your wife in order to maintain unity in the house."*

However, some female qualitative respondents reported that they decided solely on how to use proceeds from groundnut sales. These respondents explained the need to ensure money from groundnut sales was used to benefit the household. "*Once we sell groundnuts, we collect the money and buy things we lack in our homes. For instance if we lack a blanket, we buy that blanket, and if we lack plates, we buy the plates. When they [husbands] come back from where they were drinking*

from, we inform that we have sold the groundnuts and bought the plates or the blanket. The good part is, they can't drink beer with plates," explained one female respondent.

Access to Productive Capital, Household Decisionmaking, and Group Membership

Access to productive capital, household decisionmaking, and group membership are secondary outcomes of interest to the evaluation.

Ownership of Productive Assets

Nearly all respondents (over 96.0 percent) reported their household had agricultural fields and non-mechanized farm equipment. In addition, over half of respondents reported their household had a house(s), bicycle(s), chickens/ducks/turkeys, small consumer durables, and small livestock. In the project domain, approximately 60 percent of respondents also reported their household had a cell phone, while the percentage in the comparison domain was just under half. For these most commonly owned assets, female respondents in both domains were more likely to report joint ownership than males in their respective domain. An exception was cell phones, where a slightly higher percentage of males than females in the comparison domain reported joint ownership.

Qualitative findings reveal that husbands and wives often give differing accounts of who owns and has decisionmaking authority over household assets. In general, most respondents reported that assets such as land, bicycles, and larger tools (e.g., ploughs, sprayers, and watering cans) were male owned and controlled. Smaller hand tools (e.g., hoes and axes) were most frequently reported as jointly owned and controlled. Cell phones, on the other hand, were most frequently reported as individually owned and controlled by both sexes.

Ownership of Financial Assets and Access to Credit

Ownership of any of three financial assets (savings in a bank, savings in a group association, and cash/savings—not in a bank/group/association) was reported by 21.0 percent of females and 29.5 percent of males in the project domain, and by 19.0 percent of females and 30.8 percent of males in the comparison domain. The most frequently reported financial asset was cash/savings (not in a bank/group/association).

The most frequently reported credit source in the past 12 months in both domains was friends or relatives. In the project domain, 14.8 percent of females and 16.4 percent of males reported that someone in their household borrowed from friends or relatives in the past 12 months. In the comparison domain, 11.1 percent of females and 15.1 percent of males reported the same. Among respondents who reported someone in their household borrowed from friends or relatives, those in the comparison domain were more likely than those in the project domain to

report that women were solely or jointly involved in both deciding to borrow and in deciding how to use the borrowed funds.

Participation in Out-Grower Schemes

Just under half of respondents in both domains reported that their household participated in an out-grower scheme. In both domains, over half of respondents reported that a male member decided to participate and how to use inputs received through the scheme.

Household Decisionmaking

Males in the project domain were somewhat more likely than those in the comparison domain to report that their partner/wife was normally involved in decisions related to minor household expenditures, while there was little variation across domains among females who reported they were normally involved in such decisions. Of those who reported decisions were made in their household regarding minor expenditures, 78.4 percent of females and 74.5 percent of males in the project domain reported women were normally involved; in the comparison domain, 80.2 percent of females and 69.5 percent of males reported the same.

Males in the project domain also more frequently reported that their wife/partner was normally involved in decisions related to whether or not to use family planning than those in the comparison domain, while there was again little variation across domains among females. Of those who reported decisions were made in their household related to using family planning, 80.7 percent of females and 79.6 percent of males in the project domain reported women were normally involved; in the comparison domain, 82.7 percent of females and 70.1 percent of males reported the same.

Females were asked about decisionmaking regarding spending their own money. Among those who reported such decisions were made in their household, 88.3 percent of females in the project domain and 89.5 percent in the comparison reported they were normally involved.

Group Membership

Community Markets for Conservation (COMACO) were reported as present in the community by approximately one-third of respondents in the project domain, but only by less than one-sixth of those in the comparison domain. Of those who reported COMACO present in the community, similar proportions (approximately one-quarter) of females and males in both domains reported they were members.

Eastern Province Farmers' Cooperative (EPFC) was reported as present in the community by similar proportions of females across domains (29.1 percent in the project domain and 27.4 percent in the comparison domain). Males in both domains were less likely to report the presence of EPFC; this was especially true in the comparison domain, where only 12.8 percent

of males stated EPFC was present as compared to 17.0 percent of males in the project domain. Of those who reported EPFC was present in the community, respondents in the comparison domain were more likely to report they were members than respondents of their same sex in the project domain.

'Other agricultural producer's groups' were reported as present in the community by approximately one-third of respondents in the project domain, compared to approximately one-quarter in the comparison domain. Of those who reported that other agricultural producer's groups were present in the community, respondents in the comparison domain were more likely to report they were members than respondents of the same sex in the project domain.

A District Women's Association (DWA) was reported as present in the community by a slightly higher proportion of females in the comparison domain (15.2 percent) than the project domain (11.7 percent). In both domains, approximately one-quarter of those who reported the presence of a DWA in their community reported they were members.

Among qualitative respondents who were not in agricultural groups, the most frequently cited primary reason was lack of membership fees. Men whose wives were not in agricultural groups all said they would support their wife joining if the membership benefitted the household.

Food Security, Dietary Diversity, and Alcohol

Food security, dietary diversity, and alcohol use are secondary outcomes of interest to the evaluation.

Food Security

Over one-third of respondents reported their household did not have enough food to meet their family's needs for at least one month in the previous year (August 2013-July 2014). The most commonly reported months with insufficient food were January, February, and March.

Dietary Diversity

Nearly all respondents (over 98.0 percent) reported eating grains, roots, or tubers in the previous day. Vitamin A-rich dark green leafy vegetables and other fruits and vegetables were the second and third most frequently reported food groups by females; for males, the order was reversed. Legumes and nuts, and flesh foods and other small animal proteins were the fourth and fifth most frequently reported groups for females; for males, the order was again reversed.

Alcohol Use

The proportion of female respondents (over 93.0 percent) who reported never getting drunk was notably higher than the proportion of males (over 58.0 percent) who reported never getting drunk. Average weekly spending on alcohol was higher for males than females in the same domain, and higher overall in the comparison domain.

Exposure to Information/Training

Access to Agricultural Extension Workers and Lead Farmers

A slightly higher proportion of respondents in the project domain met with an agricultural extension worker in the past 12 months compared to respondents of the same sex in the comparison domain. Male respondents in both domains were more likely to report meeting with an agricultural extension worker in the past 12 months than female respondents in the same domain. In the project domain, 27.5 percent of females and 37.5 percent of males reported meeting with an agricultural extension worker, as did 24.5 percent of females and 34.6 percent of males in the comparison domain.

A higher proportion of male and female respondents in the project domain also met with a lead farmer in the past 12 months compared to respondents of the same sex in the comparison domain. Male respondents in both domains were again more likely to report meeting with a lead farmer than female respondents in the same domain. In the project domain, 20.6 percent of females and 30.2 percent of males reported meeting with a lead farmer, as did 16.3 percent of females and 20.6 percent of males in the comparison domain.

Respondents in the project domain were more likely to report meeting with a lead farmer from COMACO or PROFIT+ than those in the comparison domain. In the project domain, 5.9 percent of females and 8.2 percent of males reported meeting with a BLA/COMACO lead farmer, and 3.1 percent of females and 4.4 percent of males reported meeting with a PROFIT+ lead farmer.

Information/Training Received and Most Common Sources

The most commonly reported types of information/training ever received in both domains was conservation farming (approximately half of female respondents and two-thirds of male respondents), making decisions with one's spouse on family planning (approximately half of all respondents), and nutrition (approximately half of all respondents). Similar or slightly higher proportions of female and male respondents in the project domain reported receiving each of the 16 types of information/training asked about compared to respondents of the same sex in the comparison domain.

In the project domain, higher proportions of males than females reported receiving each type of information/training. In the comparison domain, while higher proportions of males than females reported receiving information/training on most topics, there were some exceptions where the proportions were slightly higher for females. The two most common sources of information/training in both domains were meetings and informal conversation.

Access to Information about Agricultural Commodity Prices

Nearly two-thirds of respondents reported that they accessed information about agricultural commodity prices. The most common source was radio, reported by 64.0 percent of females and 65.1 percent of males in the project domain and 52.2 percent of females and 64.5 percent of males in the comparison domain. Farmers/neighbors were the second most commonly reported source for females in both domains, while out-growers were the second most commonly reported source for males in both domains.

Knowledge of PROFIT+ and BLA/COMACO

IDI and FGD respondents were asked about their knowledge of PROFIT+ and BLA/COMACO. Of respondents in the PROFIT area, only four of the nine female IDI respondents had heard of PROFIT+, and only participants in one of the three FGDs had heard of PROFIT+. Six of nine male IDI respondents in the PROFIT+ area had heard of the project, as had participants in two of the three male FGDs. Some male respondents reported concerns about PROFIT+, which included favoritism in how members are selected and how inputs are distributed by the local cooperative, and failure to deliver promised inputs.

Eight of nine female IDI respondents in the BLA area had heard of BLA/COMACO, as had participants in all three female FGDs. Some female respondents reported concerns about BLA/COMACO, which included favoritism in how beneficiaries are selected; late or no delivery of promised seed; delivery of expired seed that does not germinate; and failure to buy crops (only recovering seed). All male IDI respondents in the BLA area reported they had heard of BLA/COMACO, as had participants in all three male FGDs. Male respondents also expressed concerns about BLA/COMACO, including not understanding the criteria for beneficiary selection; late or no delivery of promised inputs; only recovering seed and not buying crops; purchasing crops at a low price; and not visiting famers frequently enough.

Gender Norms, Gender-Based Violence, and Transactional Sex

Gender norms and levels of gender-based violence and transactional sex are secondary outcomes of interest to the evaluation.

Gender Norms

Over 96.0 percent of respondents in both domains agreed with the statement, 'The husband and wife should decide together how to spend money from crop harvests.' Over 91.0 percent also agreed with the statement, 'A married woman should be able to attend agricultural training.' However, while over 70.0 percent of female respondents in both domains agreed with the statement, 'Women should be able to travel alone to markets to sell crops,' only a little over half of male respondents similarly agreed. While only approximately a third of males in both domains agreed with the statement, 'A married woman should be able to own land on her own,' approximately 70.0 percent of female respondents reported agreement.

Gender-Based Violence

Reported levels of physical violence by current partner/husband against female respondents in the last 12 months did not vary greatly by domain for most types of violence. In the project domain, 17.8 percent of female respondents reported one or more types of physical violence had been perpetrated against them in the last year; in the comparison domain, 14.6 percent of females reported the same. Female respondents reported sexual violence more frequently than physical violence. Twenty-two percent of females in the project domain and 23.5 percent of females in the comparison domain reported any sexual violence in the past 12 months. Approximately one-third of women in both domains reported having emotional violence perpetrated against them in the past 12 months. Report of economic violence by current partner was also similar across domains—17.2 percent in the project domain and 14.3 percent in the comparison domain.

Female respondents reported lower levels of perpetrating violence against their current partner/husband. Only 4.0 percent or less of female respondents reported their own perpetration of physical violence, sexual violence, or economic violence against their current partner in the past 12 months, respectively.

Report of violence perpetrated by someone other than current partner/husband against female respondents in the last 12 months was extremely rare for physical and sexual violence (reported by less than 1.5 percent of respondents). Report of emotional violence perpetrated against female respondents by someone other than a current partner was higher—reported by 22.9 percent of female respondents in the project domain and 19.4 percent in the comparison domain.

Transactional Sex

Approximately 80.0 percent or more of respondents in both domains reported that they thought a woman having transactional sex was wrong morally.

Less than 1.0 percent of female respondents reported engaging in any of the transactional sex scenarios presented in the survey. Men more commonly reported engaging in transactional sex in specific contexts. The most commonly reported scenario was engaging in sex with a woman who was not the respondent's main partner because she expected him to or because he did 'give her cash or money to pay her bills', reported by 8.0 percent of males in the project domain and 9.2 percent in the comparison domain.

Next Steps

Endline data collection is planned for 2017. The same respondents will be interviewed in order to evaluate the impact of PROFIT+ and BLA on the outcomes of interest. A difference-in-differences (DID) approach will be used to compare pre- and post-intervention differences in outcomes between the project and comparison domains. Qualitative analysis will aim to describe and understand differences in gender dynamics as groundnut commercialization increases. In particular, analysis will focus on identifying which components of the PROFIT+ and BLA interventions appear to be most and least effective (and why) in helping women maintain or increase control over groundnut production and marketing/sales as commercialization increases. Endline analysis will also include an exploration of whether increased groundnut commercialization results in changes in intimate partner and gender-based violence, and if so, what these changes are and why they occur.

1. Introduction and Background

1.1 Feed the Future FEEDBACK Overview

The impact evaluation on Gender and Groundnut Value Chains (GNVC) in Eastern Zambia is being undertaken as part of the Feed the Future FEEDBACK (FTF FEEDBACK) project. Feed the Future is a U.S. Government initiative that seeks to address global food insecurity in 19 focus countries by accelerating growth of the agricultural sector, addressing the root causes of under nutrition, and reducing gender inequality. The U.S. Agency for International Development (USAID) is responsible for leading the government-wide effort to implement the Feed the Future initiative.

USAID contracted FTF FEEDBACK to provide monitoring and evaluation support to the Feed the Future initiative. FTF FEEDBACK is implemented by Westat in partnership with the Carolina Population Center at the University of North Carolina (UNC) at Chapel Hill and TANGO International. The main objectives of FTF FEEDBACK are to enable USAID Missions to meet the performance monitoring requirements of Feed the Future and maximize the use and benefits of data collected; provide high-quality empirical evidence to inform program design and investment decisions that will promote sustainable food security; ensure timely availability of high-quality data for use in monitoring performance and evaluating impacts of the Feed the Future initiative; and facilitate accountability and learning about which Feed the Future interventions work best, under what conditions, and at what cost.

1.2 Description of PROFIT+ and Better Life Alliance

The goal of Feed the Future Zambia is to assist an estimated 263,000 vulnerable Zambian women, children, and family members to escape hunger and poverty. Feed the Future Zambia programs will provide services to more than 173,000 children to improve their nutrition and prevent stunting and child mortality, with additional rural populations achieving improved income and nutritional status from policy engagement and institutional investments.[2]

Feed the Future Zambia includes investments in four key program areas in five districts (Chipata, Katete, Lundazi, Nyimba and Petauke) of the Eastern Province of Zambia:

- Oilseeds, legumes, maize, and horticulture value chains (research, improved marketing, and peri-urban smallholder horticulture development);
- Enabling environment (analysis and advocacy to improve agricultural policy and support for implementation of a Comprehensive Africa Agriculture Development Programme Country Investment Plan);

[2] Feed the Future. Zambia. See: http://www.feedthefuture.gov/country/zambia-0.

- Economic resilience (improving household food security, ensuring gender equity, and providing access to sustainable agricultural technologies); and
- Nutrition (scaling up nutrition efforts, strengthened health and nutrition systems, and improved Vitamin A-rich maize and sweet potatoes for vulnerable groups).[3]

Feed the Future Zambia aims to maximize positive impact on female farmers and ensure equitable benefits for men and women by ensuring women can participate in economic opportunities throughout the value chain; prevent women from being displaced from value chains with increased commercialization; and ensure farm technologies are appropriate for both men and women.[4]

USAID/Zambia has several mechanisms working in program areas related to Feed the Future. Two of these are of interest to the Zambia GNVC impact evaluation—the Production, Finance & Technology Plus (PROFIT+) project and the Better Life Alliance (BLA) project.

Production, Finance & Technology Plus (PROFIT+)

PROFIT+, under lead implementing partner ACDI/VOCA, aims to improve smallholder productivity, expand markets and trade, and increase private sector investment in agriculture. PROFIT+ has adopted a value chain approach to increase productivity and efficiency along six value chains (maize, soybean, sunflower, groundnut, tomato, and onion) in the Eastern Province economic corridor.[5]

PROFIT+'s main program components include identifying and disseminating improved productivity technologies to farmers; developing value-chain finance schemes to increase access to credit; developing an export strategy for these value chains; and improving the capacity and governance of cooperatives to increase market linkages to high value processing. PROFIT+ expects to achieve a 30 percent increase in productivity and income from selected value chains, benefit more than 800,000 Zambians, and increase the value of agricultural sales by $125 million.[6]

PROFIT+ is targeting 200,000 smallholder farmers in the districts of Chipata, Katete, Lundazi, and Petauke. The primary entry point for PROFIT+ is existing cooperatives, producer associations, or other relevant community groups (e.g., District Women's Associations).

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[3] Feed the Future. Zambia. See: http://www.feedthefuture.gov/country/zambia-0.
[4] Feed the Future. Zambia. See: http://www.feedthefuture.gov/country/zambia-0.
[5] ACDI/VOCA. PROFIT+ Value Chains Barrier Analysis. August 28, 2012.
[6] USAID/Zambia. Economic Growth Project Descriptions. See: http://zambia.usaid.gov/economic-growth-project-descriptions.

Better Life Alliance (BLA)

BLA is a public-private partnership of USAID, OAM International, Wildlife Conservation Society (WCS), General Mills, and the Royal Norwegian Embassy. The lead implementing partner is Community Markets for Conservation (COMACO). COMACO was established in 2003 by WCS Zambia. Since then, COMACO has built seven conservation trading centers to store and process agricultural commodities, registered 36,000 farmers as members, and marketed twelve retail products. By the end of the BLA project, COMACO is expected to be self-financing from sales and independent from WCS as a stand-alone company.[7]

BLA's goal is to increase sustainable, market-led growth across the entire food production and market chain, resulting in improved food and income security for 40,000 households in selected environmentally sensitive areas in Chipata, Katete, Lundazi, Mambwe, Nyimba, and Petauke. BLA provides agricultural inputs, farmer training, value-added food processing, and access to national and international markets.

1.3 Overview of Groundnut Production and Sales in Eastern Zambia

Groundnuts are one of Zambia's most important crops, produced by nearly half of Zambia's 1.4 million rural smallholders.[8] The Eastern Province of Zambia is the country's largest producer of groundnuts, accounting for 27 percent of total production in 2011. Within Eastern Province, the districts of Chipata, Lundazi, Petauke, Katete, and Chadiza are the highest producing, with 2011 production levels of 10,000 metric tonnes (MT), 6800 MT, 5500 MT, 2300 MT, and 1900 MT, respectively.[9,10]

However, data from annual Crop Forecast Surveys reveal a declining national trend in the production of groundnuts—from 160,000 MT in 2009/2010 to under 120,000 MT in 2012/2013. A recent (2013) value chain analysis of the groundnut sector attributed this decline in part to a decreasing area dedicated to groundnut cultivation relative to cotton.[11] While Zambia's agricultural system is dominated by maize, groundnuts were the number two crop with regard to percentage of arable land devoted to their cultivation until they were recently overtaken by cotton in 2011/12. Seed recycling and market unpredictability relative to maize and cotton are also believed to be factors contributing to the declining trend in groundnut production.[12]

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[7] COMACO. Better Life Alliance Monitoring and Evaluation Plan, 2012 – 2015. March 2012.

[8] Mofya-Mukuka R, Shipekesa AM. IAPRI. Value Chain Analysis of the Groundnuts Sector in the Eastern Province of Zambia. Working Paper No. 78. September 2013. See: http://www.iapri.org.zm/index.php/research-reports/working-papers.

[9] Eastern Province also contains the districts of Mambwe and Nyimba, and formally included Chama district.

[10] Mofya-Mukuka, et al.

[11] Republic of Zambia, Central Statistical Office. Crop Forecast Survey Data, 2009 to 2012.

[12] Mofya-Mukuka, et al.

In Eastern Province, the area under groundnut production declined by 32 percent from 267,578 hectares in 2009/10 to just under 181,556 hectares in 2011/12, though increased to 207,249 hectares in 2012/2013. Most groundnut growers are smallholder households, over 95 percent of which cultivate less than one hectare. Approximately 80 percent of groundnuts grown in the province are for home consumption. Sales are primarily to small-scale traders or other households for consumption. Large-scale buyers include COMACO and Eastern Province Farmers' Cooperative (EPFC), both of which provide famers with inputs; Export Trading Group of Zambia, a global company; and Rabs, a Malawian processing company.[13]

Despite declining production and limited sales, groundnuts have the potential to improve nutrition in Eastern Province, where child stunting rates exceed the national average. They are high in protein which is critically important to growth, especially in children. In addition, local and regional demand for groundnuts is rising, suggesting the potential for increased commercialization and improved income for smallholder farmers.[14]

1.4 Overview of Gender, Agriculture, and Food Security

Food security, nutrition, health, and agricultural productivity are inter-related. When agricultural productivity is enhanced, households can increase their income and improve their food security. Improved food security, in turn, can lead to better nutrition and health outcomes, which can result in further increases in agricultural productivity.[15]

Increasing overall household income alone is not sufficient to ensure improved food security and nutrition and health outcomes. One potential factor that might positively impact the relationship between increased income and health and nutrition outcomes is whether women's control over income and other assets is increased relative to men's, resulting in an increase in women's decisionmaking power with regard to how household resources are allocated. Research has shown that women are more likely than men to spend income on their family's well-being, and that increasing women's control over income, land, and other physical assets is positively linked with improved food security, child nutrition, and education.[16,17] At the same time, other factors may mitigate the positive impact of women's increased decisionmaking—for example increased time spent on production and marketing, potentially resulting in less time devoted to child feeding.

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[13] Mofya-Mukuka, et al.

[14] USAID/Zambia. PROFIT+ Value Chain Assessments and Strategy. 2012.

[15] Aseno-Okyere K, Jemaneh S. International Food Policy Research Institute. Increasing Agricultural Productivity and Enhancing Food Security in Africa. March 2012.

[16] Gender, Agricultural, & Assets Project. A Toolkit on Collecting Gender & Assets Data in Qualitative and Quantitative Program Evaluations. February 2012. See: http://www.fsnnetwork.org/resource-library/gender-integration/gaap-gender-agriculture-assets-project-toolkit-collecting-gender.

[17] Mehra R, Rojas MH. International Center for Research on Women. Women, Food Security and Agriculture in a Global Marketplace. 2008. See: http://www.icrw.org/publications/women-food-security-and-agriculture-global-marketplace.

Increasing agricultural productivity can, however, have the opposite result: men's relative control over household income, rather than women's, is increased. This outcome has been seen with commercialization of some 'women's crops', where a male 'takeover' occurs when a certain level of profitability is reached.[18] When such a takeover occurs, and the portion of the crop normally saved for home consumption is reduced or even eliminated, nutritional status can decrease even as household income increases.[19]

Interventions aimed at commercializing value chains, especially those that are predominantly perceived to be the domain of women (such as groundnuts in Eastern Zambia), need to take steps to ensure that women's relative control of income and other assets is maintained, if not increased. To achieve this, interventions must identify and address locally-specific obstacles that hinder women's participation, which often include limited access to agricultural inputs, technological resources, land, collective groups, credit/finance, and agricultural extension.[20] Interventions must also identify and address cultural and social factors that impede women's participation, such as limited decisionmaking authority within marriage, and a heavy workload as the primary homecare provider that may limit women's ability to travel to markets.

PROFIT+ and BLA: Gender Mainstreaming to Prevent Displacement of Women

In light of the above, both PROFIT+ and BLA have adopted a gender mainstreaming approach to prevent displacement of women as groundnut commercialization increases. PROFIT+ engages in ongoing gender analysis and will implement a wide range of activities aimed at: increasing women's access to and control of inputs and labor saving technology; addressing land rights issues; facilitating women's access to finance; facilitating women's ability to participate in regional export market trade; promoting rural enterprise and cooperative development through gender sensitization linked to technical support; and promoting opportunities for value addition. BLA addresses gender through two main strategies. First, it engages female farmers as basic program beneficiaries and as lead farmers who coordinate beneficiary groups and demonstrate conservation farming techniques on their farmland. Second, in beneficiary group education sessions that discuss household budgeting and family planning, BLA requires that partners attend along with beneficiaries; in these sessions, BLA promotes joint household decisionmaking.

[18] Mehra R, et al. 2008.
[19] Meinzen-Dick, et al. Engendering Agricultural Research. International Food Policy Research Institute Discussion Paper 00973. May 2010.
[20] Meinzen-Dick, et al. 2010.

1.5 Zambia GNVC Impact Evaluation: Objectives, Research Questions, and Outcomes of Interest

Objectives and Research Questions

The Zambia GNVC impact evaluation aims to test the hypothesis that the gender interventions implemented by PROFIT+ and BLA will assist in maintaining or increasing women's control over production, marketing/sales, and proceeds from groundnuts as groundnut commercialization increases. The research questions addressed by the impact evaluation are:

Groundnut Production

1. Do women maintain control over production of groundnuts as commercialization efforts are expanded?

2. What interventions might assist in maintaining women's control over production of groundnuts? For example:

    a. Demonstration plots managed by women with training/capacity building; connecting women with organizations working on improved inputs (PROFIT+).
    b. Targeting women with improved inputs (BLA).

Groundnut Sales

1. Do women maintain control over marketing/sales of groundnuts and proceeds as commercialization efforts are expanded?

2. What interventions assist in maintaining women's control over marketing/sales of groundnuts and control over the proceeds? For example:

    a. Linking women to marketing agents (PROFIT+).
    b. Providing a direct market for women (BLA).

Outcomes of Interest

Table 1.1 shows the primary outcomes of interest to the evaluation. It also provides an illustrative list of secondary outcomes of interest related to groundnut production and sales; access to productive capital, household decisionmaking, and group membership; food security, dietary diversity, and alcohol; and, gender norms, gender-based violence, and transactional sex. In addition, an illustrative list of project exposure indicators are presented.

Table 1.1. Outcomes of interest

Topic Area	Outcomes
Primary Outcomes	
Participation in groundnut production by women	• Percentage of households' groundnut fields where women solely or jointly decided to grow groundnuts in the last agricultural season • Percentage of households' groundnut fields where woman solely or jointly decided which groundnut seed variety to plant in the last agricultural season
Participation in groundnut marketing/sales by women	• Percentage of households' groundnut fields where women solely or jointly decided to sell groundnuts in the last marketing season • Percentage of household's groundnut fields where women solely or jointly sold groundnuts in the last marketing season
Commercialization of groundnuts	• Percentage of households that sold groundnuts in the last marketing season
Mean total household sales of groundnuts	• Mean total household sales (kilograms) of shelled groundnuts in the last agricultural season • Mean total household sales (kilograms) of unshelled groundnuts in the last agricultural season
Women's control over proceeds from groundnut sales	• Percentage of respondents that reported women solely or jointly decided how to use proceeds from the largest sale of shelled groundnuts in the last agricultural season • Percentage of respondents that reported women solely or jointly decided how to use proceeds from the largest sale of unshelled groundnuts in the last agricultural season
Secondary Outcomes (Illustrative)	
Groundnut production and sales	• Mean total area of households' groundnut fields in the last agricultural season • Percentage of households' cultivated/cropped fields that were cropped with groundnuts in the last agricultural season • Percentage of households' groundnut fields where women provide labor, either solely or jointly, for land preparation/planting/weeding/harvesting of groundnuts in the last agricultural season (multiple indicators) • Mean total size of households' largest sale of shelled/unshelled groundnuts in the last agricultural season (multiple indicators) • Percentage of respondents that reported the largest sale of shelled/unshelled groundnuts in last agricultural season was to a retailer or marketer/small-scale trader/large-scale trader/other households (multiple indicators) • Percentage of respondents that reported the largest sale of shelled/unshelled groundnuts in the last agricultural season was at homestead/greater than 25 kilometers from homestead (multiple indicators)

Table 1.1. Outcomes of interest (continued)

Topic Area	Outcomes
Access to productive capital, household decisionmaking, and group membership	• Percentage of respondents that reported their household had productive assets such as land, farm equipment, etc. (multiple indicators) • Of those whose household owned productive assets, percentage of respondents that reported women solely or jointly owned the assets (multiple indicators) • Percentage of respondents that reported their household had financial assets such as savings in a bank or group/association, cash savings, etc. (multiple indicators) • Of those whose household had financials assets, percentage of respondents that reported women solely or jointly owned the assets (multiple indicators) • Percentage of respondents that reported their household participated in an out-grower scheme • Of those whose household participated in an out-grower scheme, percentage of respondents that reported women solely or jointly decided to participate • Percentage of respondents that reported woman normally makes household decisions (related to minor household expenditures, family planning, etc.), either solely or jointly (multiple indicators) • Percentage of respondents that reported a group (COMACO, other agricultural producer's groups, etc.) was present in their community • Of those who reported a group was present in the community, percentage of respondents who reported they were active members (multiple indicators)
Food security, dietary diversity, and alcohol	• Percentage of households that did not have enough food to meet the family's needs any month in the previous year • Percentage of respondents that consumed various food groups in the previous day (multiple indicators) • Respondents' average weekly spending on alcohol
Gender norms, gender-based violence, and transactional sex	• Percentage of respondents that agreed with various gender norm statements (multiple indicators) • Percentage of female respondents that reported their current partner perpetrated physical/sexual/emotional/economic violence against them in past 12 months (multiple indicators) • Percentage of female respondents that reported they perpetrated physical/sexual/emotional/economic violence against their current partner in past 12 months (multiple indicators) • Percentage of female respondents that reported someone other than their current partner perpetrated physical/sexual/emotional violence against them in past 12 months (multiple indicators) • Percentage of respondents that reported they engaged in transactional sex
Exposure Indicators (Illustrative)	
Information/Training Received	• Percentage of respondents that reported they received information/training on conservation farming/improved groundnut seed/marketing of agricultural crops/budgeting as household/sharing profits from crops jointly with spouse (multiple indicators)
Access to Extension Workers and Lead Farmers	• Percentage of respondents that reported they met with an agricultural extension worker/lead farmer in last 12 months (multiple indicators)

1.6 Baseline Survey Objectives

The baseline survey has three objectives. First, it aims to provide baseline estimates of the primary and secondary outcomes of interest in the PROFIT+/BLA project area (project domain) and the non-project comparison area (comparison domain). Second, it aims to identify baseline differences in these outcomes between the project and comparison domains. Third, it seeks to understand household gender dynamics in the evaluation area as they relate to groundnut production, marketing/sales, and control of proceeds.

2. Methodology

2.1 Quantitative Component

Objectives

The quantitative survey was designed to capture data related to the primary and secondary outcomes of interest in the project and comparison domains. With an endline survey planned in 2017, the quantitative survey further aims to support evaluation of project impact on these outcomes through a difference-in-differences (DID) approach comparing pre-post differences in outcomes between the project and comparison domains.

Quantitative Survey Instrument

The quantitative survey instrument was designed to capture characteristics and outcomes at the household and individual level, and includes three questionnaires:

- Household questionnaire for all selected households;
- Women's questionnaire for all selected households; and
- Men's questionnaire for a randomly selected sub-sample of selected households.

The survey instrument was developed by UNC and reviewed by USAID/Zambia, local co-investigators from the Indaba Agricultural Policy Research Institute (IAPRI) based in Lusaka, as well as representatives from Zambia's Central Statistical Office (CSO), which also translated the instrument into Nyanja. Questionnaire modules were adapted from a variety of agriculture- and health-related surveys, including the Zambia Rural Agriculture Livelihoods Survey (RALS),[21] FTF FEEDBACK Population-Based Surveys (PBS),[22] Women's Empowerment in Agriculture Index (WEAI),[23] Gender, Land and Assets Survey (GLAS),[24] and the Demographic and Health Survey (DHS),[25] as well as nutrition and hunger modules developed by the Food and Nutrition Technical Assistance (FANTA) Project.[26]

[21] Republic of Zambia, Central Statistical Office. 2012 Rural Agricultural Livelihoods Survey 2012. See: http://fsg.afre.msu.edu/zambia/2012_Rural_Agricultural_Livelihoods_Survey(RALS).pdf.
[22] USAID. Feed the Future Zambia: Baseline Household Survey. See: https://catalog.data.gov/dataset/feed-the-future-zambia-baseline-household-survey.
[23] International Food Policy Research Institute. Women's Empowerment in Agriculture Index. 2012. See: https://catalog.data.gov/dataset/feed-the-future-zambia-baseline-household-survey.
[24] International Center for Research on Women. Gender, Land and Assets Survey. See: http://www.icrw.org/where-we-work/measuring-property-rights-gender-land-and-asset-survey.
[25] The DHS Program. See: http://www.dhsprogram.com/.
[26] FANTA: Food and Nutrition Technical Assistance. See: http://www.fantaproject.org/.

The survey instrument contained the following modules as noted in Table 2.1-1:

Table 2.1-1. Quantitative survey instrument

Household questionnaire	Individual questionnaire
• Household identification • Informed consent • Household roster and demographics • Dwelling characteristics and distance to key services • Household level shocks • Farm land • Cultivated/cropped fields	• Individual identification • Groundnuts • Partnership and natal family information • Access to productive capital • Household decisionmaking • Group leadership and membership • Dietary diversity • Months of adequate household food provisions • Household hunger scale • Exposure to messaging/information • Women only: Gender attitudes, transactional sex, violence, and alcohol consumption • Men only: Gender attitudes, transactional sex, and alcohol consumption

Sampling Design

The survey adopted a stratified multi-stage sampling design in order to obtain a random sample of households from the project and comparison domains, respectively.

Survey Domains

The sample was drawn from two survey domains: project and comparison.

The project domain consists of:

- Chipata, Katete, Lundazi, and Petauke districts, in which PROFIT+ and/or BLA work, and
- Chiefdoms in Nyimba, Mambwe, and Chadiza districts, in which BLA works.

Valley areas and national parks were excluded from the domain as groundnuts are not generally grown in these areas and PROFIT+ and BLA do not focus groundnut-related interventions in these areas.

The comparison domain consists of:

- Areas in Nyimba and Mambwe districts excluding chiefdoms in which BLA works;
- Chadiza district excluding BLA project chiefdoms; and
- Southern Chama.

Valley areas and national parks were excluded to enhance comparability with the project domain.

Sampling Frame

PROFIT+ seeks to influence the entire area of its project districts, whereas BLA operates within chiefdoms, which do not have officially defined geographic boundaries or a population size measure. To map the geographic boundaries of its project chiefdoms, BLA constructed shapefiles using geographic information systems (GIS). For the purpose of constructing a sampling frame, these shapefiles were overlaid with shapefiles of Standard Enumeration Areas (SEAs), the census enumeration unit in Zambia, for which officially defined geographic boundaries and a population size measure were available from the 2010 Census of Population and Housing data.[27] Preparatory work using GIS was not necessary for defining the PROFIT+ project area as SEAs do not span across district boundaries. SEAs that fell within the PROFIT+ or BLA project areas comprised the sampling frame for the project domain, whereas those that fell within the comparison domain comprised the sampling frame for the comparison domain. SEAs that were split between the project and comparison areas, which applied to a few SEAs in and around the BLA project area in Nyimba, Mambwe, and Chadiza districts, were removed from the sampling frame.

Sample Size Estimation

The sampling plan was designed to recruit 2,000 households for interviews in each of the two domains (i.e., 4,000 households in total) from 250 SEAs by recruiting 16 households per SEA. The main female adult (age 18 or over) decisionmaker in all selected households and the main male adult decisionmaker in approximately 38 percent of selected households were recruited for interview.

Sample size calculations were based on estimated sampling parameters (e.g., baseline values, design effects) using data from Zambia's 2005-2006 Post Harvest Survey.[28] The minimum detectable change for two indicators related to groundnut commercialization and gendered decisionmaking was calculated, namely:

- Whether the household bartered or sold groundnuts in the past year: binary (yes, no); and
- For households that sold groundnuts, who decided on the use of cash proceeds from sales: multiple answers (household head, spouse, joint decision, others). These categories were collapsed to a binary outcome: (1) decided by/jointly with a female

[27] Republic of Zambia, Central Statistical Office. 2010 Census of Population. 2012.
[28] Republic of Zambia, Ministry of Agriculture & Cooperatives and Central Statistical Office. Post Harvest Survey 2005-06.

household member (female household head, spouse of male household head), and (2) otherwise.

A response rate (combining both household and individual level response rates) of 94 percent and a follow-up rate at endline of 85 percent were assumed. This implies that approximately 80 percent of households contacted at baseline, or approximately 3,200 households, are expected to be available for analysis after completion of the endline survey.

Table 2.1-2 summarizes the key sampling parameter assumptions and specifications, and baseline and endline values that were used to estimate the minimum detectable change for each indicator. With these assumptions and specifications, the estimated minimum detectable change in the probability of bartering or selling groundnuts with the baseline value of 0.49 is 0.09. Likewise, the minimum detectable change in the probability of decisionmaking involving a female member with the baseline value of 0.63 is 0.09 (based on the assumption that the proportion of households that have sold groundnuts is 49 percent at baseline).

Table 2.1-2. Sampling parameter assumptions and specifications

Indicator	Baseline value	Endline value	Minimum detectable change	Design effect	Significance level	Power	Multi-correlation[a]	Target sample size
Household bartered/sold groundnuts in the past year	49%	58%	9%	3.5	5% (two-sided)	80%	0.7	3,200
Female involved in deciding how to use cash proceeds from sales	63%	72%	9%	2.4	5% (two-sided)	80%	0.7	3,200

[a] Between the DID interaction terms and the indicator variables.

Sampling Procedures

The survey adopted a stratified multi-stage sampling design that, within each domain, involved: (1) selection of SEAs, (2) household listing within selected SEAs, (3) selection of households within selected SEAs, and (4) allocation of selected households to type of interview.

Selection of SEAs. SEAs served as Primary Sampling Units (PSUs) in both the project and comparison domains. From each of the two domains, 126 SEAs were selected with probability proportional to the number of households engaged in groundnut production, which was obtained from the 2010 Census of Population and Housing data. Systematic sampling of SEAs, ordered by districts for implicit stratification, was adopted to allow for sample allocation proportional to the district's number of households engaged in groundnut production in each domain.

The explicit stratification scheme has two objectives. One is to divide the sample between project and comparison domains, as described above. The second is to ensure sufficient households in the comparison domain with groundnut production. To do this, the comparison domain is divided into 4 stratum. Three of these stratum are the 3 SEAs with the most (115 or more) households participating in groundnut production. Making each of these SEAs a separate stratum ensures that these SEAs are chosen into the sample. The remainder of the SEAs in the comparison domain are in a single stratum. Those SEAs have fewer than115 households with groundnut production. The project domain has a single stratum because SEAs in that domain have sufficient numbers of households with groundnut production.

Household Listing within Selected SEAs. In each selected SEA, the data collection team identified the geographic boundaries of the SEA using a field enumeration area map provided by CSO and conducted a thorough household listing to identify households eligible for interview.

For the purpose of the survey, a household was defined as a group of persons who live together and eat together from the same kitchen. During the listing of households, polygamous families were generally listed as separate households, with the husband and first wife listed as one household, and other wives listed as heads of their respective households. However, a polygamous family that met one of the following two criteria was considered a single household:

1. The wives lived at the same homestead and there were common provisions for food and other necessities. If the family lived together and made common provisions for food and shared production resources (e.g., land, equipment, labor), all the family members were considered as belonging to one household.

2. The responsibility of cooking for everyone was shared among the wives although the cooking may have taken place in different kitchens. Typically there was a duty roster to cook for the rest of the household members.

Once a household was listed, field teams assessed its eligibility for interview. A household was eligible for interview if:

1. It planted or grew groundnuts in the October 2012-September 2013 agricultural season; and

2. It had both a male and female household member aged 18 or older.

Both of these criteria needed to be met for a household to be eligible for interview. To assess the criteria, the household listing included screening questions to produce a list of eligible households in each selected SEA.

Selection of Households within Selected SEAs. From each selected SEA, an average of 16 eligible households were randomly selected from the list of eligible households using systematic

random sampling. When fewer than 16 eligible households were found, all eligible households in the SEA were recruited for interview. The shortfall in the target sample size was offset by increasing the number of households to be selected in other selected SEAs. The number of selected households per SEA ranged from two to 19.

Allocation of Selected Households to Type of Interview. The selected households in each selected SEA were randomly allocated to two different groups: (1) households where only the main adult female decisionmaker would be interviewed, and (2) households where both the main adult male and female decisionmakers would be interviewed. The random allocation to type of interview was accomplished by applying systematic random sampling to the selected households.

Weight Calculations

The design weights of households and individuals and the sampling weight were calculated as follows:

Design Weight of Households. As described in the previous sections, the sampling was based on a stratified multi-stage sampling design. Design weights were calculated based on the separate sampling probabilities for each sampling stage.

The first stage involved selection of SEAs within strata in the project and comparison domains. There is one stratum in the project domain and four strata in the comparison domain. SEAs were selected based on the probability proportional to the number of households engaged in groundnut production which was obtained from the 2010 Census of Population and Housing data. The selection probability of *i*-th SEA in stratum *h* is:

$$p_{1hi} = \frac{a_h \times N_{hi}}{N_h}$$

Where

a_h = number of sample clusters selected in stratum *h*;

N_{hi} = total number of households in the frame for the *i*-th sample cluster in stratum *h*; and

N_h = total number of households in the frame in stratum *h*.

The second stage involved a random selection of households from each selected SEA. The selection probability of *j*-th households in SEA *i* in stratum *h* is:

$$P_{2hij} = \frac{b_{hi}}{N^*_{hi}}$$

b_{hi} = number of sample households selected for the *i*-th sample cluster in stratum *h*; and

N^*_{hi} = number of eligible households listed in the household listing for the *i*-th sample cluster in stratum *h*.

The overall selection probability of each household in SEA *i* of stratum *h* is the product of the selection probabilities of the two stages:

$$P_{hij} = P_{1hi} \times P_{2hij} = \frac{a_h \times N_{hi}}{N_h} \times \frac{b_{hi}}{N^*_{hi}}$$

The design weight for each household in SEA *i* of stratum *h* is the inverse of its overall selection probability:

$$W_{hij} = \frac{1}{p_{hij}} = \frac{N_h \times N^*_{hi}}{a_h \times N_{hi} \times b_{hi}}$$

Design Weight of Individuals. The primary female adult member was interviewed in each selected household. Therefore the selection probability of each female respondent equals the selection probability of her household and can be expressed as follows:

$$P_{hijf} = \frac{a_h \times N_{hi}}{N_h} \times \frac{b_{hi}}{N^*_{hi}} \times \frac{f_{hi}}{b_{hi}} = \frac{a_h \times N_{hi}}{N_h} \times \frac{b_{hi}}{N^*_{hi}} = P_{hij}$$

Where f_{hi} is the number of primary female adult members selected in SEA *i* in stratum *h*, and always equals b_{hi}.

The design weight for the female respondent of household *j* in SEA *i* of stratum *h* is the inverse of its overall selection probability:

$$W_{hijf} = \frac{1}{p_{hij}}$$

The primary male adult member was interviewed in a randomly selected sub-sample of households, which constitutes approximately 38 percent of all selected households, and can be expressed as:

$$P_{hijm} = \frac{a_h \times N_{hi}}{N_h} \times \frac{b_{hi}}{N^*_{hi}} \times \frac{m_{hi}}{b_{hi}} = P_{hij} \times \frac{m_{hi}}{b_{hi}}$$

Where m_{hi} is the number of primary male adult members selected in SEA *i* in stratum *h*.

The design weight for the male respondent of household *j* in SEA *i* of stratum *h* is the inverse of its overall selection probability:

$$W_{hijm} = \frac{b_{hi}}{p_{hij} \times m_{hi}}$$

Sampling Weight. The sampling weight was calculated with the design weight corrected for unit nonresponse calculated at the level of cluster as ratios of the number of interviewed units over the number of selected units, where units could be households or individual respondents.

The household sampling weight was calculated by dividing the household design weight by the household response rate. The individual sampling weight was calculated by dividing the individual design weight by the individual response rate.

Response Rates

Interview response rates are presented in Table 2.1-3. In each of the project and comparison domains, a total of 2,000 eligible households were selected after screening for eligibility to participate in the survey. Of the selected households, 1,972 in the project domain and 1,976 in the comparison domain were successfully interviewed for the household questionnaire, yielding household-level response rates of 98.6 percent and 98.8 percent, respectively.

Table 2.1-3. Quantitative survey response rates

	Domain	
	Project	**Comparison**
Household Interviews		
Households selected[a]	2,000	2,000
Households interviewed[b]	1,972	1,976
Household response rate (%)[b]	98.6	98.8
Individual Interviews: Women		
Women selected[a]	1,972	1,978
Women interviewed[b]	1,935	1,933
Women's response rate (%)[b]	98.1	97.7
Individual Interviews: Men		
Men selected[a]	744	747
Men interviewed[b]	687	675
Men's response rate (%)[b]	92.3	90.4

NOTE: Three tablets were damaged resulting in the loss of 7 completed interviews.

[a] Includes HHs whose data were lost from damaged tablets.

[b] Excludes HHs whose data were lost from damaged tablets.

In each selected household, the main adult female decisionmaker was identified and invited to participate in the survey. Of the selected households, 1,935 women in the project domain and 1,933 women in the comparison domain were interviewed for the women's questionnaire, yielding response rates of 98.1 percent and 97.7 percent, respectively.

Additionally, in a randomly selected 744 and 747 households in project and comparison domains, respectively, the main adult male decisionmaker was identified and invited to participate in the survey. Of these households, 687 and 675 men in the project and comparison domains were successfully interviewed for the men's questionnaire, yielding response rates of 92.3 percent and 90.4 percent, respectively.

Fieldwork and Training

The quantitative survey was implemented by CSO in collaboration with IAPRI under the guidance of UNC.

Training of Master Trainers and Pretest of Survey Instruments

Six master trainers (four from CSO and two from IAPRI) were trained by UNC staff. Training of master trainers occurred from July 17-22, 2014, and was held at IAPRI's offices in Lusaka. Training topics included an introduction to the study and a detailed review of the survey instrument, enumerator manual, and supervisor manual, including household listing and sampling procedures. Master trainers were also trained on the use of Nexus tablets equipped with Open Data Kit (ODK) software for data entry and management by Westat staff.

The master trainer team pre-tested the survey instruments in Rufunsa District over a two-day period. Minor revisions were made to the instrument related to questions on groundnut sales and access to productive assets. The instrument was then finalized.

The master trainers traveled to Chipata accompanied by a UNC staff person to finalize recruitment of enumerator candidates and train the field team. An aptitude test was developed and administered to approximately 130 enumerator candidates recruited from CSO and the open market. As the survey required more female than male enumerators, 46 women and 29 men were ultimately selected for training.

Training of Enumerators

Training took place in Chipata from July 28-August 8, 2014. After introductions and an overview of the project, candidates were trained on use of tablets by Westat staff. Other training topics included a detailed review of each survey module during which the intent of all questions and responses were reviewed. The Nyanja translation of each question was also reviewed to ensure appropriate translation. In addition, candidates were trained on human subjects protection, interviewing techniques, data management, and household listing

procedures. Several quizzes were administered during training to assess candidates' learning. Training included daily role plays and tablet practice, as well as a day of field practice in a nearby village during which each candidate conducted two practice interviews.

At the end of training, 13 candidates were chosen as supervisors, along with 39 female and 13 male enumerators (52 total enumerators).

Data Collection

Data collection occurred from August 9-October 1, 2014. Each of the 13 data collection teams was comprised of a supervisor, three female enumerators, and one male enumerator. Two of the female enumerators interviewed alone (in households where only the main adult female decisionmaker was being interviewed). The remaining female enumerator was paired with the male enumerator and assigned to households where both the main adult male and female decisions makers were selected for interview. Each team collected data in 19-20 assigned SEAs under the supervision of a quality monitoring team as described below.

Data Quality Control

The 13 data collection teams were divided into two groups of six and seven teams each. Each group of teams was overseen by a pair of master trainers (three from CSO and one from IAPRI) who comprised the quality monitoring team. In addition, a UNC staff person remained with the team throughout the first week of data collection.

Data quality was ensured at several levels. At the tablet level, the survey was programmed so that questions could not be skipped. Numerous quality checks were also built into the programming (e.g., the sum total of the largest two transactions of groundnut sales could not exceed the total amount of sales) that prevented enumerators from moving forward with the survey until errors were corrected. Supervisors monitored enumerator performance by observing interviews, conducting spot checks, and reviewing survey responses in the tablet for completeness and consistency before finalizing and transmitting questionnaires to the Westat server. The quality monitoring team provided yet another layer of quality control, visiting each team at least once per SEA to observe interviews and review household listing books, sampling calculations, and enumerator and supervisor control sheets.

A final level of data quality control involved the use of quality control reports that were automatically generated by the Westat server and reviewed daily by a UNC staff person throughout the data collection period. The reports contained information on household identification numbers, number of completed interviews per SEA, as well as rates of 'don't know' and 'refused' responses, among other information. Using these reports, UNC communicated daily with the quality monitoring team to alert them to any errors

(e.g., duplicate household identification numbers), collect corrected information, and upload corrections to the Westat server.

Data Processing and Confidentiality

The Nexus tablets used for data collection were password protected and their hard drives were encrypted. Supervisors reviewed each enumerator's completed surveys, finalized them, backed them up on the enumerator's tablet by making a copy on the tablet itself, and also transferred a copy from the enumerator's tablet to their own (supervisor's) tablet. Supervisors transmitted completed surveys (encrypted) to the Westat server whenever they had Internet access. Once transferred, data were stored on a secure server at Westat. To ensure data protection and confidentiality across the study, all partners signed a data use agreement and committed to using reasonable data protection measures, as outlined in the agreement, to protect the data. When data collection was complete, tablets were returned to Westat, checked for completeness of data delivery, and cleared of all survey data.

Handwritten records from the household listing, including household listing books and maps, were stored in locked file cabinets.

Quantitative Analysis

Quantitative data analysis was conducted in Stata 14.0 (Stata Corp LP, College Station, Texas). Analysis in this baseline report is limited to basic descriptive frequencies and cross tabulations, and, as such, descriptive analysis does not incorporate tests of statistical significance. Emphasis has been placed on the comparability of the project and comparison domains on observable characteristics at baseline. Indicators are reported mainly as either percentages or means, and weighted using the sampling weights.

Quantitative data analysis also included balance testing to examine statistical comparability between the project and comparison domains. Sixty-two indicators (all primary indicators along with selected background, secondary, and exposure indicators) were tested to determine statistically significant differences across the project and comparison domains. The methodology and results are presented in Annex A.

2.2 Qualitative Component

Objectives

The qualitative component serves several purposes. First, it aims to contextualize the findings of the quantitative study by gathering information about gendered household decisionmaking related to groundnut production and sales. Specifically, the qualitative component seeks to understand which household members (husbands, wives, or husbands and wives jointly) make

key decisions related to groundnut production and sales, why that person(s) is the one to make the decision, and what factors they consider when making decisions. The qualitative component further seeks to gain an understanding of how husbands and wives divide labor for groundnut production and sales, and also explores differences in husbands' and wives' control of land and agricultural assets. To better understand the relationship between economic empowerment, control of assets, and gender-based violence at the household and community levels, the qualitative component explores wives' experience of intimate partner violence as well as gender-based violence at markets, and while traveling to and from markets. Finally, the qualitative component examines respondents' knowledge of and exposure to PROFIT+ and BLA.

The qualitative component employs a case-based approach involving individual in depth interviews (IDIs) and focus group discussions (FGDs) at three sites per case, where a 'case' is defined as an intervention approach (PROFIT+ or BLA). Three SEAs were selected where only PROFIT works and three were selected where only BLA works. This design ensures only one of the two programs has an effect on the participants in each IDI or focus group.

Qualitative Survey Instruments

In Depth Interview Guides

IDI guides were developed for male and female respondents. All respondents were asked about their knowledge of and experience with PROFIT+ and BLA, household decisionmaking related to groundnut production and sales, and ownership and control of productive assets. Female IDI respondents (only) were also asked about their experience of intimate partner violence and their experience of gender-based violence when traveling to/from or while at markets/agricultural trading centers. Finally, female participants were asked to describe their typical daily activities during groundnut harvest time.

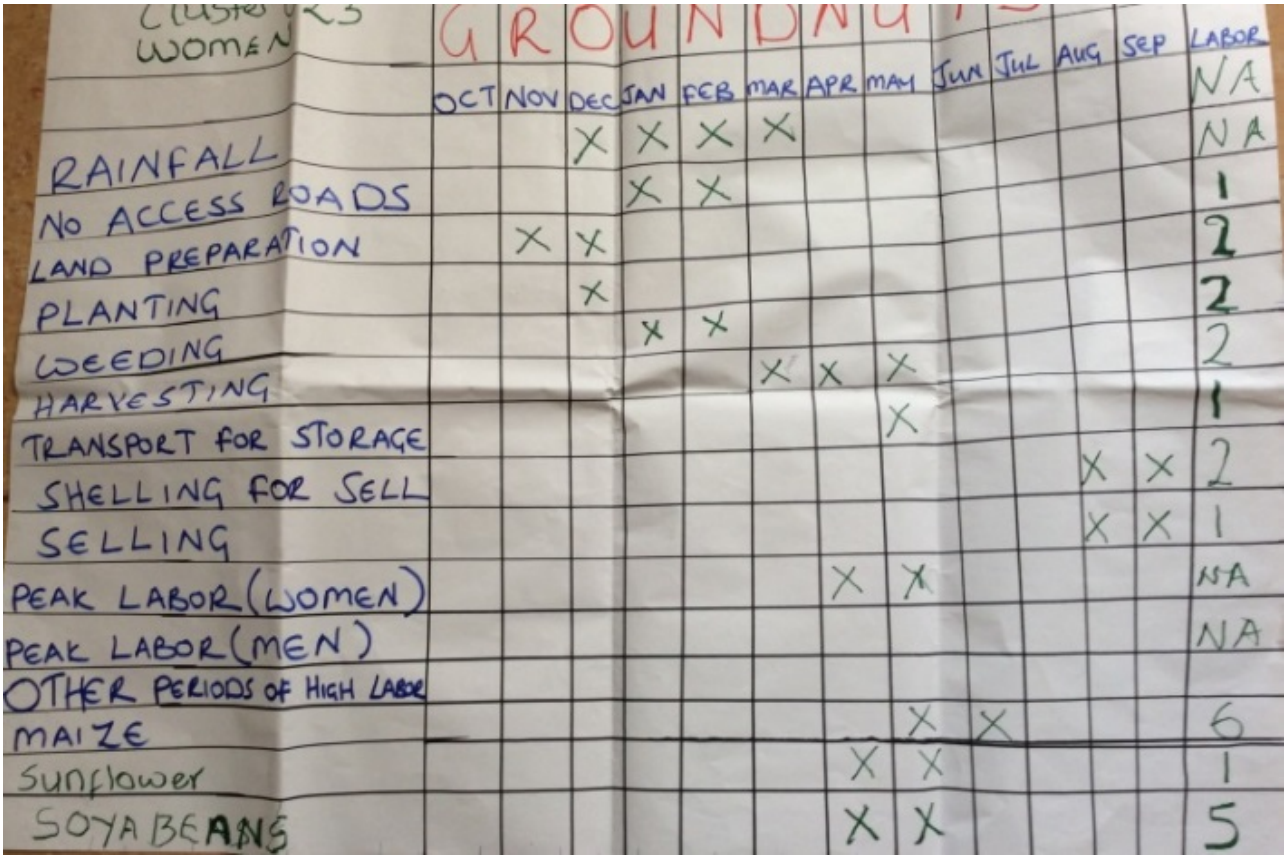
Focus Group Discussion Guide

An FGD guide was developed to lead participants through two main group exercises. First, participants developed seasonal activity calendars for groundnut farming, noting when six main activities occurred: land preparation, planting, weeding, harvesting (including transportation for storage), shelling for sale, and selling. They also reported who typically provided labor for each activity and identified peak labor periods for men and women. A sample calendar is shown in Figure 2.1.

Focus group participants then discussed household decisionmaking related to groundnut production and sales and created decision diagrams to illustrate who in the household (husbands, wives, or both) typically makes decisions related to input acquisition, land preparation, weeding, harvesting, and sales. A sample decision diagram is shown in Figure 2.2.

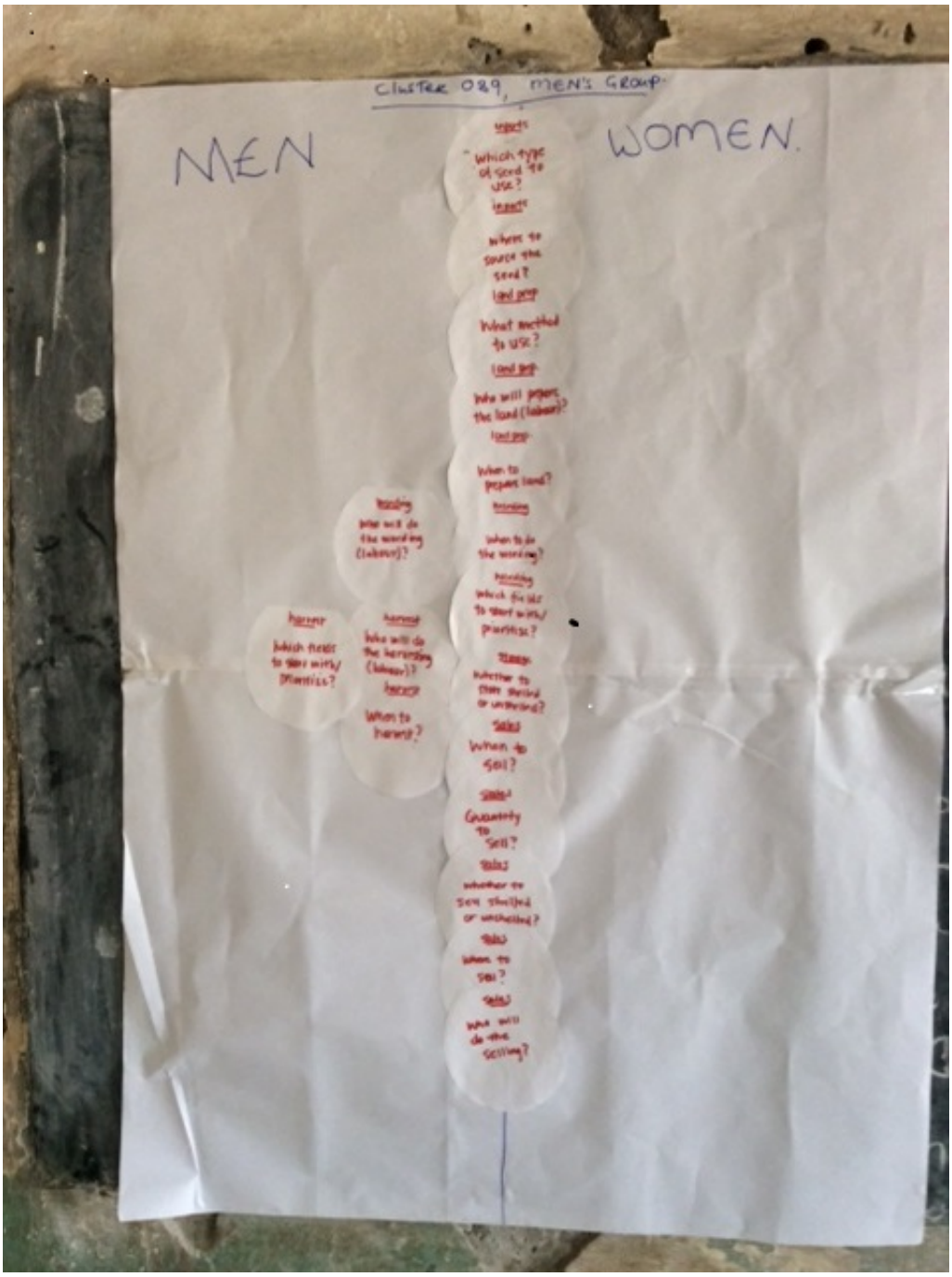
Finally, participants discussed their knowledge of and experience with PROFIT+ and BLA.

Figure 2.1. Sample groundnut seasonal calendar



Cluster 23 WOMEN	GROUNDNUTS												
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	LABOR
RAINFALL			X	X	X	X							NA
No ACCESS ROADS				X	X								NA
LAND PREPARATION		X	X										1
PLANTING			X										2
WEEDING				X	X								2
HARVESTING						X	X	X					2
TRANSPORT FOR STORAGE								X					1
SHELLING FOR SELL											X	X	2
SELLING											X	X	1
PEAK LABOR (WOMEN)							X	X					NA
PEAK LABOR (MEN)													NA
OTHER PERIODS OF HIGH LABOR													
MAIZE								X	X				6
Sunflower							X	X					1
SOYABEANS							X	X					5

Figure 2.2. Sample groundnut decision diagram



Sample

The six SEAs selected for the qualitative component were purposively selected to achieve geographic (i.e., district) diversity as well as variety with regard to views on gender norms and attitudes (the latter determined through a review of participants' responses to questions on gender norms and attitudes in the quantitative survey). Three SEAs where only PROFIT+ is

operating (one each in Chipata, Katete, and Petauke) and three where only BLA is operating (one in Mambwe and two in Nyimba) were ultimately selected.[29]

Thirty-six in depth interviews were conducted with married couples—six in each SEA selected for the qualitative component—three with husbands and three with their wives (conducted separately). Married couples were purposefully selected to include varying levels of education and age.

Twelve focus group discussions were conducted in total—two in each SEA selected for the qualitative component —with one comprised of married women and the other of married men. A total of 95 individuals (52 women and 43 men) participated in FGDs. The average FGD size was 8. The age and education level of respondents for both IDIs and FGDs are shown in Table 2.2.

Table 2.2. Age and education level of qualitative respondents

	PROFIT+ project area		BLA project area	
	Females	Males	Females	Males
IDI Participants				
Average age (range)	36 (19-55)	44 (28-59)	39 (21-66)	46 (23-74)
Average years education (range)	4 (0-7)	6 (0-12)	4 (0-8)	6 (0-11)
FGD Participants				
Average age (range)	34 (19-57)	42 (22-71)	41 (22-74)	48 (28-78)
Average years education (range)	4 (0-9)	5 (0-12)	5 (0-15)	6 (0-12)

Fieldwork and Training

Qualitative data collection was implemented by IAPRI and CSO under the guidance of UNC. Four members of the quantitative data collection team, two male supervisors and two female enumerators, were selected as qualitative interviewers based on their strong performance during the quantitative component.

Interviewer training occurred from October 15-21, 2014 in Chipata and was led by UNC. Topics included an overview of the qualitative component, qualitative techniques with an emphasis on IDIs and FGDs, gender and gender-based violence, logistics and use of audio recorders, and a review of informed consent procedures (all interviewers had previously participated in the quantitative training on informed consent and protection of human subjects and had signed confidentiality agreements). Training sessions included translation of the IDI and FGD guides into Nyanja as well as frequent role plays to practice interviewing and facilitation skills.

[29] Due to significant overlap in the project areas of PROFIT+ and BLA, only a limited number of SEAs where only PROFIT+ or only BLA operate were eligible for the qualitative study. For BLA, we were limited to SEAs in Mambwe and Nyimba, as PROFIT+'s project area covers the full districts of Chipata, Katete, Lundazi, and Petauke.

The IDI and FGD guides were pre-tested by the interviewers in a nearby village over a two-day period and finalized. Data collection occurred from October 23-November 8, 2014.

Qualitative Analysis

FGDs and IDIs were recorded, transcribed into Nyanja, and translated into English. Transcripts were then analyzed to identify relevant themes and patterns of responses to help explain and supplement quantitative findings. In order to identify differences in perceptions and experiences among males and females—both within and across cases—responses were grouped and examined by sex and case of respondents.

The goal of the baseline qualitative analysis is to describe current household decisionmaking dynamics and division of labor related to groundnut production and sales, differences in control of productive assets among husbands and wives, and women's experience of gender-based violence. When combined with endline quantitative and qualitative data, the qualitative analysis will aim to describe and understand any changes in these dynamics as groundnut commercialization increases. In particular, analysis will focus on identifying which components of the PROFIT+ and BLA interventions appear to be most and least effective (and why) in helping women maintain or increase control over groundnut production and marketing/sales as commercialization increases. Endline analysis will also include an exploration of whether increased groundnut commercialization results in changes in intimate partner and gender-based violence, and if so, what these changes are and why they occurred.

2.3 Institutional Review Board (IRB) Clearance and Informed Consent

The Zambia GNVC impact evaluation study protocol was reviewed and approved by the University of North Carolina's IRB (study number 14-0661). The study protocol was also reviewed and approved by ERES Converge, a private, registered Zambian IRB (study approval number 2014-Mar-005). All data collection personnel (trainers, supervisors and interviewers) were trained in human subjects. Informed consent was obtained from all participants prior to their participation in the study. In addition, collection of data on gender-based violence followed internationally recognized ethics protocols to protect women who have experienced violence.[30]

[30] World Health Organization. Putting Women First: Ethical and Safety Recommendations for Research on Domestic Violence against Women. January 2001. See: http://www.who.int/gender/documents/violence/who_fch_gwh_01.1/en/.

3. Household Characteristics

3.1 Age and Sex of Household Members

There was little variation in the distribution of household members by age and sex across domains (see Table 3.1). The proportion of respondents under age 15 in both domains was just under half. In the project domain, 48.2 percent of household members were under 15, as were 48.9 percent of those in the comparison domain.

Table 3.1. Household population by age, sex, and domain

	Project			Comparison		
	Female	**Male**	**Total**	**Female**	**Male**	**Total**
Age						
0-4	16.5	15.5	16.0	18.0	16.7	17.4
5-9	18.2	16.7	17.4	17.4	16.5	16.9
10-14	14.9	14.8	14.8	14.7	14.6	14.6
15-19	9.8	11.9	10.8	10.0	11.4	10.7
20-24	8.1	8.5	8.3	7.9	8.1	8.0
25-29	6.3	6.1	6.2	6.0	6.3	6.1
30-34	5.8	4.6	5.2	6.0	5.6	5.8
35-39	4.8	5.0	4.9	4.4	4.5	4.5
40-44	3.8	4.7	4.3	4.4	4.0	4.2
45-49	3.2	2.9	3.1	3.1	3.2	3.2
50-54	2.5	2.5	2.5	2.5	3.0	2.7
55-59	1.3	2.1	1.7	1.8	1.7	1.7
60-64	1.5	1.0	1.2	1.1	1.4	1.3
65+	3.2	3.6	3.4	2.9	3.0	3.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
n	**5,889**	**6,226**	**12,118[a]**	**5,969**	**6,163**	**12,132**

[a] Three observations missing information on sex are excluded.

DK/Refused/Missing = 0 percent.

3.2 Household Composition

Over 95.0 percent of households were headed by a male member as shown in Table 3.2, and the average household size—6.1—was the same in both domains.[31]

[31] Note that to be eligible for the survey, households were required to have both an adult (age 18 or over) female and an adult male member.

Table 3.2. Household composition by domain

	Project	Comparison
Sex of Household Head		
Male	95.2	95.1
Female	4.8	4.9
Total	100.0	100.0
Number of Usual Members		
1	0.0	0.0
2	4.2	3.3
3	8.9	9.5
4	13.6	14.0
5	17.6	16.4
6	17.0	15.9
7	15.4	14.9
8	10.3	10.5
9+	13.1	15.6
Total	100.0	100.0
Household Mean Size	**6.1**	**6.1**
n	**1,972**	**1,976**

DK/Refused/Missing = 0 percent.

3.3 Marital Status of Household Members

Tables 3.3-1 and 3.3-2 show the marital status of female and male household members aged 15 years or older, respectively. Household members were categorized as *currently married* if they were in a formal marriage or cohabitating, *formerly married* if they were divorced, widowed or separated, and *never married* if they had never been in formal marriage or cohabitated.

The majority of female and male household members in both domains were currently married; however, a higher proportion of female respondents in both domains were currently married as compared to males in the same domain. In the project domain, 70.4 percent of females and 61.9 percent of males were currently married; in the comparison domain, 68.2 percent of females and 62.6 percent of males were currently married.

Younger females were more likely to be currently married than younger males. While 42.0 percent of females age 15-24 in the project domain and 37.7 percent of females age 15-24 in the comparison domain were currently married, only 16.4 percent and 14.9 percent of males age 15-24 in the project and comparison domains (respectively) were currently married.

Table 3.3-1. Marital status of female household members (age 15 or older) by age and domain

	Project					Comparison				
	Currently married[a]	Formerly married	Never married	N	Total	Currently married[a]	Formerly married	Never married	N	Total
Age										
15-19	21.9	0.4	77.7	587	100.0	18.9	2.1	79.0	614	100.0
20-24	67.1	4.1	28.8	468	100.0	62.2	3.3	34.5	470	100.0
25-29	87.8	5.2	7.0	351	100.0	86.1	2.9	11.0	352	100.0
30-34	93.3	5.7	1.0	338	100.0	92.5	4.3	3.2	349	100.0
35-39	94.2	5.8	0.0	284	100.0	94.6	3.4	2.0	263	100.0
40-44	93.2	6.8	0.0	222	100.0	90.8	8.3	0.5	261	99.6[b]
45-49	83.4	14.6	1.9	193	100.0	90.1	8.6	1.3	184	100.0
50-54	89.8	10.0	0.2	157	100.0	83.3	16.7	0.0	146	100.0
55-59	73.8	26.2	0.0	89	100.0	70.4	29.6	0.0	105	100.0
60-64	66.8	33.2	0.0	88	100.0	78.6	21.4	0.0	71	100.0
65-69	83.4	16.6	0.0	71	100.0	63.0	35.1	1.8	70	100.0
70-74	59.9	37.5	2.6	63	100.0	51.1	48.9	0.0	46	100.0
75-79	48.2	51.8	0.0	29	100.0	41.7	58.3	0.0	38	100.0
80+	14.4	85.6	0.0	31	100.0	40.0	60.0	0.0	22	100.0
Total	70.4	8.7	20.9		100.0	68.2	8.4	23.3		100.0
n	**2,070**	**265**	**636**	**2,971**		**2,035**	**248**	**707**	**2,991**	

[a] Includes formal marriage and cohabitating couples.

[b] One observation missing marital status.

DK/Refused/Missing = 0 percent.

Table 3.3-2. Marital status of male household members (age 15 or older) by age and domain

	Project					Comparison				
	Currently married[a]	Formerly married	Never married	N	Total	Currently married[a]	Formerly married	Never married	N	Total
Age										
15-19	2.1	0.6	97.3	733	100.0	2.2	0.0	97.8	701	100.0
20-24	35.7	0.8	63.4	541	100.0	32.6	1.6	65.8	503	100.0
25-29	75.2	1.5	23.3	369	100.0	73.8	2.0	24.2	376	100.0
30-34	89.3	1.7	9.0	284	100.0	91.0	2.2	6.9	332	100.0
35-39	93.3	2.9	3.8	304	100.0	93.6	0.6	5.8	286	100.0
40-44	96.3	1.4	2.2	291	100.0	97.7	0.7	1.6	249	100.0
45-49	94.2	4.6	1.2	178	100.0	98.9	0.6	0.5	200	100.0
50-54	96.0	3.0	1.0	155	100.0	97.3	2.1	0.6	187	100.0
55-59	97.9	2.1	0.0	134	100.0	100.0	0.0	0.0	100	100.0
60-64	96.4	3.1	0.5	73	100.0	96.5	3.5	0.0	94	100.0
65-69	93.5	6.5	0.0	67	100.0	95.1	2.5	2.4	70	100.0
70-74	94.1	5.9	0.0	78	100.0	95.6	4.4	0.0	49	100.0
75-79	93.5	6.5	0.0	31	100.0	100.0	0.0	0.0	26	100.0
80+	93.0	6.1	0.8	53	100.0	83.4	16.6	0.0	44	100.0
Total	61.9	1.9	36.2		100.0	62.6	1.4	36.0		100.0
n	**2,011**	**62**	**1,218**	**3,291**		**2,010**	**49**	**1,158**	**3,217**	

[a] Includes formal marriage and cohabitating couples.

DK/Refused/Missing = 0 percent.

3.4 Housing Characteristics

Housing and environment and sanitation-related characteristics are presented in Tables 3.4-1 and 3.4-2. Overall, dwelling characteristics in the project domain were similar to those in the comparison domain. The roof material for the majority of houses in the project and comparison domains was either thatched grass (51.3 percent and 62.6 percent, respectively) or iron sheets (46.7 percent and 35.9 percent, respectively). Slightly more household dwellings had roofs made of iron sheets in the project domain, and slightly more in the comparison domain had thatched grass roofs. The most common flooring material in the project and comparison domains was earth/mud (75.9 percent and 83.6 percent, respectively), followed by concrete/flag stone/cement (20.9 percent and 13.9 percent, respectively). Most household dwellings had two or three rooms, and walls made from mud/unburnt bricks (59.2 percent project and 66.6 percent comparison) or tile/bricks (29.6 percent project and 26.0 percent comparison). Most households did not have electricity (78.4 percent project and 76.7 percent comparison).

The household's main sanitation facilities, drinking water source, and source of cooking fuel were similar across domains. Almost no households used improved sanitation facilities.[32] Most households used improved sources for drinking water, the most common being a tube well/borehole (58.5 percent project and 68.6 percent comparison). Almost all households used firewood as the main source of cooking fuel (93.1 percent project and 96.9 percent comparison).

Table 3.4-1. Housing characteristics by domain

	Project	Comparison
Type of Roof		
Tile	0.0	0.0
Wood	0.1	0.1
Iron sheet	46.7	35.9
Asbestos	0.6	0.6
Plastic sheeting	0.5	0.4
Grass thatched	51.3	62.6
Mud/cow dung	0.3	0.1
Cardboards	0.0	0.1
Concrete	0.0	0.2
Other	0.2	0.0
Total	100.0	100.0

[32] The survey may have underestimated the use of improved sanitation facilities. Most households used a private pit latrine (74.2 percent project and 71.1 percent comparison). A private pit latrine with a slab is considered an improved source; however, the survey did not collect information on the presence of slabs.

Table 3.4-1. Housing characteristics by domain (continued)

	Project	Comparison
Type of Floor		
Earth/mud	75.9	83.6
Concrete/flag stone/cement	20.9	13.9
Tile/bricks	2.7	2.0
Wood	0.1	0.1
Other	0.1	0.1
Total	100.0	100.0
Number of Rooms[a]		
1	9.2	11.6
2	37.8	41.8
3	29.0	28.9
4	14.9	11.8
5+	8.9	5.6
Total	100.0	100.0
Type of Walls		
Mud/unburnt bricks	59.2	66.6
Concrete/flag stone/cement	8.3	5.4
Tile/bricks	29.6	26.0
Wood	0.4	0.5
Iron sheet	0.4	0.1
Grass	1.0	1.1
Other	0.7	0.1
Total	100.0	100.0
Has Electricity		
Yes	21.3	23.0
No	78.4	76.8
Total	100.0	100.0
n	**1,972**	**1,976**

[a] Excludes bathrooms, hallways, garage, toilet, cellar, and kitchen.

DK/Refused = 0 percent; Missing ranges from 0.2 to 0.3 percent.

Table 3.4-2. Environment and sanitation-related characteristics by domain

	Project	Comparison
Type of Toilet/Latrine Facility[a]		
Improved Facility		
Flush, private	0.6	0.1
Ventilated improved pit latrine (VIP), private	0.7	0.3
Non-Improved Facility		
Flush, communal	0.0	0.0
Ventilated improved pit latrine (VIP), communal	0.1	0.1
Pit latrine, communal	9.2	13.2
Pit latrine, private[b]	74.2	71.1
Pan/bucket	0.0	0.0
No toilet	2.3	2.1
Bush	12.3	12.7
Other	0.1	0.1
Total	100.0	100.0
Source of Drinking Water[b]		
Improved Source		
Piped water into dwelling/plot/yard	1.0	0.2
Public tab (someone else's private tap)	1.8	0.3
Protected dug well/springs	10.9	4.9
Tube well/borehole	58.5	68.6
Non-Improved Source		
Unprotected dug well/springs	17.9	16.5
Tankers truck/vendor	0.4	0.0
Surface water	9.0	9.1
Bottled water	0.0	0.0
Other	0.2	0.1
Total	100.0	100.0
Source of Cooking Fuel		
Electricity	0.6	0.1
Piped or liquid propane gas	0.0	0.0
Kerosene	0.0	0.0
Charcoal	6.0	2.7
Firewood	93.1	96.9
Animal dung	0.0	0.0
Agricultural crop residue	0.0	0.0
Other	0.0	0.0
Total	100.0	100.0
n	**1,972**	**1,976**

[a] Improved vs. non-improved sanitation and water source classifications are per WHO/UNICEF Joint Monitoring Program for Water Supply and Sanitation. See: http://www.wssinfo.org/definitions-methods/watsan-categories/.

[b] To be considered improved, a private pit latrine must have a slab. This information was not collected in the survey.

DK/Refused ranges from 0.0 to 0.1 percent; Missing ranges from 0.2 to 0.3 percent.

3.5 Distance to Key Services

The percentage of households within five kilometers of key services is shown in Table 3.5. Although the percentages were similar across domains for most services, more households in the project domain than in the comparison domain reported being within five kilometers of each service. A notable difference between domains was distance to a tarmac/tarred road. In the project domain, 32.1 percent of households were within five kilometers of a tarmac/tarred road, as compared to only 9.1 percent in the comparison domain. In addition, a higher proportion of households in the project domain (97.3 percent) reported being within five kilometers of a point where they could receive mobile cell network services than those in the comparison domain (83.8 percent).

Table 3.5. Distance to key services by domain

	Project	Comparison
Percent of Respondents Who Report Service is within Five Kilometers of Household		
Tarmac/tarred road	32.1	9.1
Private fertilizer retailer	18.3	15.5
Established market place	41.7	36.8
Hammer mill	74.3	63.7
Feeder road	85.2	80.9
Point where mobile cell network services can be received	97.3	83.8
Bulking station	57.6	51.9
Agro-dealer	21.9	17.6
Agricultural camp/block office	51.0	44.5
Basic school	83.2	79.8
Clinic/health center	60.7	56.2
n	**1,972**	**1,976**

3.6 Household Economic Shocks

Table 3.6 presents the percentage of households that experienced negative and/or positive economic shocks in the last three years. Over a third of the households in the project and comparison domains experienced failure of business/crops (44.2 percent and 41.0 percent, respectively), a serious illness or injury to a household member (40.7 percent and 33.9 percent, respectively), or destruction of property (37.6 percent and 34.0 percent, respectively). The most common positive economic shock was an increase in the price for agricultural products/very good harvest (45.0 percent project and 46.9 percent, respectively).

Table 3.6. Household economic shocks in the last three years by domain

	Project	Comparison
Negative Economic Shocks		
Serious illness or injury of a household member that kept them from normal activities	40.7	33.9
Loss of regular job of a household member	**4.7**	**3.2**
Decrease in remittances to the household (not due to death of household member)	6.4	5.2
Loss of an able-bodied household member (through marriage, divorce, etc., but not through death)	**14.5**	**11.6**
Destruction of property including crops/livestock (e.g., through fire, theft, flood, etc.)	37.6	34.0
Failure of business/crops	**44.2**	**41.0**
Loss of land or displacement	7.3	6.2
Death of a household member	**16.4**	**14.4**
Other	1.6	1.2
Positive Economic Shocks		
New job for a household member	10.2	9.3
New or increased remittances	**8.3**	**7.3**
New or increased government grants or money from NGOs	4.7	1.7
Inheritance, large gift, lottery winnings, marriage gift	**4.5**	**4.6**
Scholarship for children or adults in the household	2.8	3.5
Loan from a micro-enterprise program	**5.7**	**3.1**
Increase in price for agricultural products/very good harvest	45.0	46.9
Other	**1.4**	**0.5**
n	**1,972**	**1,976**

3.7 Farm Land and Cultivated/Cropped Fields

Information on household farm land owned, rented, and borrowed for the 2012/2013 agricultural season is presented in Tables 3.7-1 and 3.7-2. The mean total area of households' cultivated/cropped fields was 2.41 hectares in the project domain and 2.22 hectares in the comparison domain.

While virtually all households had fields cultivated/cropped with groundnuts (a condition for eligibility in the survey), nearly all had just one groundnut field (93.7 percent of households in the project domain and 97.0 percent of households in the comparison domain). The mean total area of households' groundnut fields was notably larger in the project domain (0.42 hectares) than in the comparison domain (0.31 hectares).

The average proportion of cultivated/cropped fields that were cropped with groundnuts in the 2012/2013 agricultural season was 17.4 percent among households in the project domain and 14.0 percent among those in the comparison domain.

Nearly all households also cultivated maize (99.0 percent in both domains), while just under half cultivated cotton (45.6 percent of households in the project domain and 47.8 percent in the comparison domain). A higher proportion of households in the project domain (43.8 percent) cultivated sunflower than those in the comparison domain (34.5 percent).

Table 3.7-1. Farm land by domain[a]

	All fields		Cultivated/cropped fields	
	Project	Comparison	Project	Comparison
Number of Fields				
1	0.2	0.1	0.3	0.2
2	7.8	3.0	15.9	7.6
3	17.6	8.8	33.9	26.8
4	21.5	18.4	26.0	29.7
5	19.9	21.5	13.5	19.1
6	14.6	21.1	5.6	8.9
7+	18.2	27.0	4.7	7.6
Total	100.0	100.0	100.0	100.0
Mean Total Area (hectares)	**N/A**	**N/A**	**2.41**	**2.22**
n	**1,972**	**1,976**	**1,972**	**1,976**

[a] Includes owned, rented, and borrowed fields in the 2012/2013 agricultural season.

DK/Refused = 0.0 percent; Missing = 0.2 percent.

Table 3.7-2. Cultivated/cropped fields by crop and domain[a]

	Cultivated/cropped fields with groundnuts		Cultivated/cropped fields with maize		Cultivated/cropped fields with cotton		Cultivated/cropped fields with sunflower	
	Project	Comp.	Project	Comp.	Project	Comp.	Project	Comp.
Number of Fields								
0	0.2	0.0	0.6	0.7	54.0	51.9	55.8	65.2
1	93.7	97.0	69.0	56.7	42.4	42.0	41.9	32.8
2	4.5	2.4	25.0	34.0	2.6	4.5	1.5	1.4
3	0.9	0.1	3.7	6.6	0.4	1.0	0.3	0.2
4+	0.2	0.2	1.2	1.7	0.2	0.3	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean Total Area (hectares)								
	0.42	0.31	N/A	N/A	N/A	N/A	N/A	N/A
n	**1,972**	**1,976**	**1,972**	**1,976**	**1,972**	**1,976**	**1,972**	**1,976**

[a] Includes owned, rented, and borrowed fields in the 2012/2013 agricultural season.

DK/Refused = 0.0 percent; Missing ranges from 0.3 to 0.4 percent.

4. Individual Respondent Characteristics

4.1 Age and Sex

There was little variation in the age distribution of individual respondents by sex across domains (see Table 4.1). The majority of respondents were under 40 years old. In the project domain, 60.5 percent of females and 50.5 percent of males were age 18-39; in the comparison domain, 58.8 percent of females and 46.6 percent of males were age 18-39.

Table 4.1. Age and sex of individual respondents by domain

	Project		Comparison	
	Female	Male	Female	Male
Age				
18-19	3.2	1.0	2.3	1.6
20-24	13.2	8.6	12.3	8.1
25-29	15.2	14.9	15.1	13.4
30-34	15.5	9.6	16.3	14.4
35-39	13.4	16.4	12.7	9.2
40-44	10.7	13.0	12.9	13.2
45-49	8.6	7.9	8.9	12.0
50-54	6.7	7.5	6.8	9.7
55-59	3.7	6.4	4.6	4.6
60-64	3.4	3.4	2.9	4.4
65+	6.3	11.4	5.2	9.4
Total	100.0	100.0	100.0	100.0
n	**1,935**	**687**	**1,933**	**675**

DK/Refused/Missing = 0.0 percent.

4.2 Highest Educational Attainment

Educational attainment was slightly higher for females in the project domain than the comparison domain (see Table 4.2). A notably lower proportion of females in the project domain (23.0 percent) had no education compared to females in the comparison domain (30.3 percent). In addition, the median years of education completed was four for females in the project domain and only three for females in the comparison domain.

Males in both the project and comparison domains had higher educational attainment than females in the same domain. In the project domain, 33.1 percent of females and 45.5 percent of males had some secondary education. Similarly, in the comparison domain, 28.0 percent of females and 45.8 percent of males had some secondary education. There was little variation across domains for males. In both domains, the median years of completed education for males was six.

Table 4.2. Highest educational attainment of individual respondents by domain

	Project		Comparison	
	Female	**Male**	**Female**	**Male**
Education				
No Education	23.0	17.6	30.3	16.8
Some Primary	32.6	19.9	32.5	23.6
Complete Primary	9.0	8.0	7.6	6.4
Some Secondary	33.1	45.5	28.0	45.8
Complete Secondary	1.5	6.2	1.1	4.6
More Than Secondary	0.8	2.8	0.4	2.2
Total	100.0	100.0	100.0	100.0
Median Years Completed	**4**	**6**	**3**	**6**
n	**1,935**	**687**	**1,933**	**675**

DK/Refused = 0.0; Missing ranges from 0.0 to 0.6 percent.

4.3 Marital Status

Almost all individual respondents were married or cohabitating. In the project domain, 94.7 percent of females and 95.9 percent of males were married or cohabitating, and in the comparison domain, 93.9 percent of females and 94.5 percent of males were married or cohabitating (see Table 4.3-1). Polygamous marriage/cohabitation was more common in the comparison domain. While 21.6 percent of females and 17.7 percent of males in the comparison domain reported they were in a polygamous marriage/cohabitation, only 17.1 percent of females and 12.3 percent of males in the project domain reported the same. Among those in a polygamous marriage/cohabitation, the median number of co-wives was two in both domains (see Table 4.3-2).

Table 4.3-1. Marital status of individual respondents by domain

	Project		Comparison	
	Female	**Male**	**Female**	**Male**
Marital Status				
Never Married	0.9	3.4	1.3	5.1
Married/Cohabitating[a]	94.7	95.9	93.9	94.5
Monogamous	*76.8*	*83.5*	*72.3*	*76.4*
Polygamous	*17.1*	*12.3*	*21.6*	*17.7*
Widowed/Divorced/Separated	4.3	0.4	4.5	0.3
Total	100.0	100.0	100.0	100.0
n	**1,935**	**687**	**1,933**	**675**

[a] One percent of married respondents were missing number of wives/co-wives; therefore total of monogamous and polygamous does not always equal married/cohabitating total.

DK/Refused ranges from 0.0 to 0.1 percent; Missing ranges from 0.0 to 1.0 percent.

Table 4.3-2. Number of wives/co-wives among polygamous married/cohabitating individual respondents by domain

	Project		Comparison	
	Female	Male	Female	Male
Number of Wives/Co-Wives[a]				
2	85.0	87.3	80.9	82.9
3+	15.0	12.7	19.1	17.1
Total	100.0	100.0	100.0	100.0
Median	**2**	**2**	**2**	**2**
n	**297**	**83**	**392**	**107**

[a] Female respondents' report of number of wives includes self.

DK/Refused = 0.0 percent; Missing ranges from 0.0 to 0.4 percent.

4.4 Number of Living Children

Tables 4.4-1 and 4.4-2 present individual respondents' living female, male, and total children by sex and domain. Overall, respondents had a median of 2 female children and 2 male children. However, the median number of total children was slightly higher in the comparison domain (5) than the project domain (4).

Table 4.4-1. Individual respondents' living children by sex and domain

	Project		Comparison	
	Female	Male	Female	Male
Female Children				
0	14.1	16.4	11.8	16.2
1	23.4	22.0	23.4	20.0
2	24.8	22.8	22.8	17.7
3	17.7	14.4	19.2	18.2
4	11.1	9.9	12.6	13.3
5+	8.8	14.5	10.1	14.6
Total	100.0	100.0	100.0	100.0
Median	**2**	**2**	**2**	**2**
n	**1,935**	**687**	**1,933**	**675**
Male Children				
0	11.9	13.2	11.5	16.4
1	25.4	19.7	24.5	19.5
2	25.5	24.1	22.8	16.3
3	16.5	18.1	17.2	15.9
4	10.5	9.7	12.3	13.7
5+	10.2	15.2	11.6	18.1
Total	100.0	100.0	100.0	100.0
Median	**2**	**2**	**2**	**2**
n	**1,935**	**687**	**1,933**	**675**

DK/Refused = 0.0 percent; Missing ranges from 0.0 to 0.2 percent.

Table 4.4-2. Individual respondents' total living children by domain

	Project		Comparison	
	Female	Male	Female	Male
Total Children				
0	2.6	5.9	1.6	7.7
1	8.7	7.6	8.3	7.0
2	12.7	9.8	12.2	11.1
3	13.1	14.7	13.2	10.4
4	15.9	12.8	14.2	9.0
5	14.5	12.3	12.9	11.0
6	11.7	11.3	11.9	9.9
7	9.6	7.1	11.7	11.1
8	6.0	6.1	7.7	6.8
9	2.9	3.8	4.0	6.4
10+	2.0	8.7	2.2	9.7
Total	100.0	100.0	100.0	100.0
Median	**4**	**4**	**5**	**5**
n	**1,935**	**687**	**1,933**	**675**

DK/Refused = 0.0 percent; Missing ranges from 0.0 to 0.2 percent.

4.5 Age of Youngest Child

In the project domain, 52.7 percent of females and 56.8 percent of males reported their youngest child was under 5 years old (see Table 4.5). In the comparison domain, 55.0 percent of females and 60.0 percent of males reported the same.

Table 4.5. Age of individual respondents' youngest child by domain[a]

	Project		Comparison	
	Female	Male	Female	Male
Age				
Under 2	24.2	26.8	26.3	31.1
2-4	28.5	30.0	28.7	28.9
5-9	17.7	16.2	13.0	14.6
10-14	7.4	8.0	8.1	7.2
15+	14.4	14.1	15.1	11.6
Total	100.0	100.0	100.0	100.0
n	**1,881**	**648**	**1,891**	**627**

[a] Excludes respondents who have not had children.

DK/Refused ranges from 4.9 to 7.8 percent; Missing ranges from 0.0 to 0.1 percent.

4.6 Age of Female Respondent at First Birth

Table 4.6 reports the age of first birth among female respondents with a living child by domain. Findings were largely similar across domains, although a somewhat lower proportion of female respondents in the project domain had their first child when they were under 20 years old (62.1 percent) than females in the comparison domain (67.9 percent).

Table 4.6. Age of female respondent at first birth by domain[a]

	Project	Comparison
Age		
Under 17	18.1	22.4
17-19	44.0	45.5
20-24	26.8	21.6
25+	3.7	3.1
Total	100.0	100.0
n	**1,881**	**1,891**

[a] Excludes women who do not have a living child.

DK/Refused ranges from 7.3 to 7.4 percent; Missing ranges from 0.0 to 0.1 percent.

4.7 Female Respondents' (Age 18-49) Current Use of Family Planning

A majority of female respondents age 18-49 used contraception; however the proportion was higher among females in the project domain than the comparison domain (see Table 4.7). In the project domain, 61.5 percent of females reported use of a family planning method as compared to 54.7 percent of females in the comparison domain.

Similarly, 59.0 percent of females in the project domain and 51.3 percent in the comparison domain used a modern method of family planning. Injectables were the most common method in both domains, reported by 33.3 percent of females in the project domain and 32.6 percent in the comparison domain. The second most common method was pills, reported by 14.3 percent of females in the project domain and 7.4 percent in the comparison domain.

Table 4.7. Female respondents' (age 18-49) current use of family planning by domain

	Project	Comparison
Family Planning Method[a]		
Female sterilization	1.6	1.6
Male sterilization	0.1	0.0
Implant	3.9	3.6
IUD	0.6	0.6
Injectable	33.3	32.6
Pill	14.3	7.4
Male condom	2.1	1.7
Other barrier method[b]	0.2	0.2
Lactational amenorrhea method	2.8	3.7
Rhythm method	0.5	1.2
Withdrawal	1.6	1.3
Other	0.4	1.0
No method	38.2	44.8
Total	100.0	100.0
Any Method	**61.5**	**54.7**
Any Modern Method[c]	**59.0**	**51.3**
n	**1,524**	**1,551**

[a] If more than one method reported, the most effective method is reported (methods listed in order of effectiveness).

[b] Other barrier methods: female condoms, diaphragms, and foam/jelly.

[c] Modern method: excludes rhythm method, withdrawal, and other.

DK/Refused = 0.0 percent; Missing = 0.4 percent.

5. Groundnut Production and Sales

5.1 Field Ownership and Decisionmaking

This section examines field ownership and decisionmaking at the field (rather than household) level. While 93.7 percent of households in the project domain and 97.0 percent in the comparison domain reported they had just one groundnut field (as reported in Table 3.7-2), some households reported they had two or more groundnut fields. For each of the fields where their household planted or grew groundnuts in the 2012/2013 season, respondents reported who the field belonged to, who decided which persons may use the field, and who decided to grow groundnuts on the field.

Table 5.1. Field ownership and decisionmaking by domain[a]

	Project		Comparison	
	Female	Male	Female	Male
Field Belongs to				
Self	28.8	35.3	33.7	29.5
Partner/spouse	24.1	18.6	22.5	15.0
Self and partner/spouse jointly	31.9	30.9	29.8	38.6
Other	15.2	15.2	13.8	16.9
Total	100.0	100.0	100.0	100.0
Decisionmaker of Which Persons May Use the Field				
Self	23.8	63.6	28.3	58.3
Partner/spouse	43.8	10.7	38.3	13.1
Self and partner/spouse jointly	26.4	20.5	28.8	22.2
Other	6.0	5.2	4.6	6.5
Total	100.0	100.0	100.0	100.0
Decisionmaker of Whether to Grow Groundnuts on the Field				
Self	27.0	53.0	30.9	52.8
Partner/spouse	41.4	17.5	36.5	17.0
Self and partner/spouse jointly	28.8	26.4	30.4	25.4
Other	2.9	3.0	2.1	4.7
Total	100.0	100.0	100.0	100.0
n	**2,059**	**734**	**1,990**	**701**

[a] In the 2012/2013 agricultural season.

DK/Refused ranges from 0.0 to 0.1 percent; Missing ranges from 0.0 to 0.1 percent.

Table 5.1 shows a slightly higher proportion of female and male respondents in the comparison domain reported women as the sole or joint owner of the field(s) on which groundnuts were grown (henceforth referred to as 'groundnut field'[33]) in the 2012/2013 season compared to the proportion of respondents of the same sex in the project domain. In addition, a higher proportion of female respondents in both domains reported themselves as the person who

[33] The term 'groundnut field' (rather than 'the field on which groundnuts were grown in the 2012/2013 agricultural season') is used for convenience in this chapter. Whatever portion of a household's land is planted with groundnuts in a given agricultural season is called the 'groundnut field.' Thus, the location and size of the 'groundnut field' can change from season to season, depending on how much and where a household decides to plant (or not) groundnuts.

solely or jointly owned the field(s) compared to the proportion of male respondents in the same domain who reported their partner/wife was the sole or joint owner. Females reported that 60.7 percent of households' groundnut fields in the project domain were owned solely or jointly by women, while males reported that only 49.5 percent of the fields were owned solely or jointly owned by their partner/wife. In the comparison domain, females reported that 63.5 percent of households' groundnut fields were owned solely or jointly by women, whereas males reported that only 53.6 percent of the fields were owned solely or jointly by their partner/wife.

A similar pattern was seen with decisionmaking regarding which persons may use the field(s). Females reported that they decided (either solely or jointly) which person could use the field for 50.2 percent of households' groundnut fields in the project domain, whereas males reported that their partner/wife made this decision solely or jointly for only 31.2 percent of the fields. In the comparison domain, females reported that they made this decision solely or jointly for 57.1 percent of households' groundnut fields, whereas males reported that their partner/wife made this decision solely or jointly for only 35.3 percent of the fields.

Females in the comparison domain more frequently reported that they were involved (either solely or jointly) in the decision to grow groundnuts in the 2012/2013 agricultural season than those in the project domain, while there was little variation across domains among male respondents that reported their partner/wife was involved in the decision. Females in both domains were more likely to report they were involved in the decision to grow groundnuts than males in their same domain. Females reported that they made the decision (either solely or jointly) to grow groundnuts for 55.8 percent of households' groundnut fields in the project domain, while males reported their partner/wife was involved in the decision for only 43.9 percent of the fields. In the comparison domain, females reported that they were involved in the decision to grow groundnuts for 61.3 percent of households' groundnut fields, while males reported that their partner/wife was involved in the decision for only 42.4 percent of the fields.

Women's participation in decisionmaking related to groundnut production is a primary outcome of interest to the evaluation. Figure 5.1 shows the percentage of households' groundnut fields where the decision to grow groundnuts in the 2012/2013 agricultural season was made solely or jointly by women.

Figure 5.1. Percentage of households' groundnut fields where the decision to grow groundnuts was made solely or jointly by women[a]

[a] In the 2012/2013 agricultural season.

5.2 Farming Practices on Groundnut Fields

This section examines farming practices at the field level. For each of their household's groundnut fields, respondents reported if they had planted a tree to protect or improve the harvest, rated the quality of the soil, and reported the main tillage method used as well as the number of complete weedings.

Table 5.2. Farming practices on groundnut fields by domain[a]

	Project		Comparison	
	Female	Male	Female	Male
Type of Tree the HH Used to Protect or Improve the Harvest				
None planted	94.2	94.3	94.8	94.2
Faidherbia albida (musangu)	4.4	3.7	4.3	4.4
Gliricidia sepium	0.8	1.3	0.2	0.5
Sesbania sesban	0.1	0.3	0.1	0.3
Tephrosia vogelii (ububa)	0.2	0.3	0.0	0.2
Other	0.4	0.0	0.5	0.4
Total	100.0	100.0	100.0	100.0
Perceived Quality of the Soil of the Field				
Very poor	4.7	3.0	4.5	1.7
Poor	28.6	30.0	25.7	26.5
Good	54.9	57.3	54.5	54.0
Very good	11.6	9.8	15.3	17.7
Total	100.0	100.0	100.0	100.0
Main Tillage Method Used				
Conventional hand hoeing	15.2	6.4	14.3	11.4
Planting basins (potholes)	1.1	0.2	1.7	0.3
Zero tillage	0.7	0.2	2.2	0.1
Ploughing	24.9	29.8	16.9	10.8
Ripping	1.8	4.4	0.4	0.4
Ridging (before planting)	55.9	59.0	63.9	76.7
Bunding	0.3	0.0	0.6	0.2
Mounding	0.1	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0
Number of Complete Weedings				
0	2.6	3.0	2.0	4.2
1	40.6	37.3	26.7	21.7
2	51.4	54.6	55.8	58.1
3+	5.5	5.1	15.5	16.1
Total	100.0	100.0	100.0	100.0
n	**2,059**	**734**	**1,990**	**701**

[a] In the 2012/2013 agricultural season.

DK/Refused ranges from 0.0 to 0.1 percent; Missing = 0.0 percent.

Planting of a tree to protect or improve the groundnut harvest in the 2012/2013 season was uncommon, with male and female respondents in both domains reporting they planted a tree on less than 6.0 percent of households' groundnut fields, as shown in Table 5.2. Of those that reported planting a tree, faidherbia albida (musangu) was most frequently reported.

Most respondents rated the quality of the soil of their household's groundnut field(s) as 'good.' Females reported that 54.9 percent of households' groundnut fields in the project domain had 'good' soil; males reported the same for 57.3 percent of the fields. Similarly in the comparison domain, females reported that 54.5 percent of households' groundnut fields had 'good' soil, and males reported the same for 54.0 percent of fields. Respondents in the comparison domain were somewhat more likely to rate soil quality as 'very good' compared to respondents in the project domain.

The main tillage method reported by most respondents was ridging. Ridging was more commonly reported in the comparison domain, where females reported that 63.9 percent of households' groundnut fields were ridged, and males reported that 76.7 percent of the fields were ridged. In the project domain, females reported that 55.9 percent of households' groundnut fields were ridged, and males reported that 59.0 percent of the fields were ridged. Ploughing was the next most commonly reported tillage method in both domains, though it was more commonly reported in the project domain. Conventional hand hoeing was the third most commonly reported tillage method, and was more frequently reported by females in the project and comparison domains than males in their same domain.

The majority of respondents in both domains reported two complete weedings of the household's groundnut field(s). In the project domain, females reported 51.4 percent of households' groundnut fields were weeded twice and males reported the same for 54.6 percent of the fields. In the comparison domain, females reported two complete weedings for 55.8 percent of households' groundnut fields and men reported the same for 58.1 percent of the fields. A higher proportion of respondents in the comparison domain reported three complete weedings compared to those in the project domain.

5.3 Groundnut Production and Decisionmaking

Groundnut Seed Variety

This section examines groundnut seed variety selection at the field level. For each of their household's groundnut fields, respondents reported the main groundnut seed variety planted as well as who decided which seed variety to plant.

Table 5.3-1. Main groundnut seed variety and decisionmaker by domain[a]

	Project		Comparison	
	Female	Male	Female	Male
Main Seed Variety for First Planting of Groundnuts				
Chipego	0.0	0.0	0.1	0.0
Mgv-4	1.8	3.7	0.9	1.5
Chalimbana (aka Congo)	18.3	15.2	31.4	32.6
Flamingo	0.0	0.0	0.0	0.0
Nyanda	0.0	0.0	0.0	0.0
Local groundnuts	36.8	41.6	38.3	42.0
Hybrid groundnuts	1.8	0.9	0.5	0.6
Recycled hybrid groundnuts	2.1	3.6	1.7	2.6
OPV groundnuts	0.0	0.3	0.1	0.0
Chishango	3.0	2.1	0.8	0.9
Icgvsm-99-568 (aka ICGV-99)	0.0	0.0	0.0	0.0
Katete-ICG 12991	0.0	0.2	0.0	0.0
MGV-5	1.2	0.6	0.2	0.2
N/Atal Common	0.0	0.0	0.0	0.0
Kanjute	16.5	18.1	13.6	9.4
Makuru Red	12.0	8.9	8.5	7.5
Other	6.3	4.4	3.4	1.7
Total	100.0	100.0	100.0	100.0
Decisionmaker of Which Seed Variety to Plant				
Self	37.4	40.7	41.6	37.9
Partner/spouse	29.7	28.9	25.5	27.1
Self and partner/spouse jointly	28.9	26.2	30.3	29.5
Other	4.0	4.1	2.7	5.4
Total	100.0	100.0	100.0	100.0
n	**2,059**	**734**	**1,990**	**701**

[a] In the 2012/2013 agricultural season.

DK/Refused ranges from 0.0 to 1.2 percent; Missing = 0.0 percent.

Respondents in both domains most commonly reported that their household planted 'local groundnuts' in the 2012/2013 agricultural season.[34] Females reported that local groundnuts were planted on 36.8 percent of households' groundnut fields in the project domain, and males reported the same for 41.6 percent of the fields. In the comparison domain, females reported that local groundnuts were grown on 38.3 percent of households' groundnut fields, and males reported the same for 42.0 percent of the fields.

There is some variation between domains in the most commonly grown varieties named by respondents as shown in Table 5.3-1. Chalimbana variety was reported as the variety grown on 18.3 percent of households' groundnut fields by females in the project domain and on 15.2 percent of the fields by males. This variety was more popular in the comparison domain, where females reported it was grown on 31.4 percent households' groundnut fields and males reported it was grown on 32.6 percent of the fields. Kanjute was the next most popular seed variety. Females in the project domain reported it was grown on 16.5 percent of households' groundnut fields and males reported it was grown on 18.1 percent of the fields. In the comparison domain, females reported Kanjute was grown on 13.6 percent of households' groundnut fields while males reported the same for only 9.2 percent of the fields.

A primary outcome of interest to the evaluation is women's participation in decisionmaking related to groundnut production. Figure 5.2 shows the percentage of households' groundnut fields where the decision of which groundnut seed variety to plant was made solely or jointly by women in the 2012/2013 agricultural season. Females in the comparison domain were more likely than those in the project domain to report they themselves were involved (either solely or jointly) in deciding which groundnut seed variety to plant in the 2012/2013 season, while there was little variation across domains among male respondents that reported their partner/wife was involved in the decision. In addition, females in both domains were more likely to report women were involved in deciding which groundnut seed variety to plant than males in their same domain Females reported that they were involved in the decision for 66.3 percent of households' groundnut fields in the project domain; males reported their partner/wife was involved in the decision for 55.1 percent of the fields. In the comparison domain, females reported they were involved in the decision for 71.9 percent of households' groundnut fields; males reported their partner/wife was involved in the decision for only 56.6 percent of the fields. These results are consistent with qualitative findings (presented in the next section), which revealed that it was not uncommon for married couples, when interviewed separately, to report differently when asked about decisionmaking related to groundnut production.

[34] Enumerators reported that many respondents did not know the name of the variety that was planted and used the generic term 'local groundnuts.'

Figure 5.2. Percentage of households' groundnut fields where the decision of which groundnut seed variety to plant was made solely or jointly by women[a]

[a] In the 2012/2013 agricultural season.

Groundnut Production and Decisionmaking: Qualitative Findings

Focus group discussion participants and in depth interview respondents discussed household decisionmaking related to various aspects of groundnut production, including input acquisition, land preparation, weeding, harvesting, and processing. The synthesized findings are presented below.

Table 5.3-2. Groundnut production decisions addressed by qualitative component

Activity	Decision
Inputs	Who decides what type of seed to plant? Who decides where to source the seed? Who decides how much seed to plant?
Land Preparation	Who decides what method to use? Who decides who will prepare the land?
Weeding	Who decides who will weed the groundnut field? Who decides when to weed the groundnut field? Who decides which fields to start with/prioritize for weeding?
Harvesting	Who decides who will harvest the groundnut field? Who decides when to harvest the groundnut field? Who decides which fields to start with/prioritize for harvesting?
Processing	Who decides how to process groundnuts?

Cross Cutting Themes

Five cross cutting themes emerged around decisionmaking regardless of the specific groundnut production-related decision being made.

When women decide: *"It's the woman who has the passion for groundnuts."* (BLA area female). When respondents reported women as the decisionmaker for any given production-related decision, they often stated it was because women care more about groundnuts than men. Female respondents who reported women as the main decisionmaker for an activity related to groundnut production often explained that women place greater value on the crop, make sure it is grown, and tend it most closely. "*It's the woman who has the passion for groundnuts because she's the one who uses it in the preparation of dishes, the children's porridge. There are a lot of ways we benefit from farming groundnuts.*" (BLA area female).

Female respondents in both project areas explained that they valued the crop because of its importance to their children's nutrition. *"The children have better health when they eat a lot of groundnuts . . . Groundnuts really help in terms of relish* [term for the vegetable/meat/poultry/fish/other dish served with the local grain dish] *and nutrition for children . . . Sometimes children might be found with malnutrition when they go for weight-checking, then there at the hospital you are told to prepare a lot of porridge with groundnut flour, so groundnuts help in a lot of ways."* (BLA area female). Female respondents also described the importance of groundnuts to cooking in general. "*It is we women that remember how helpful these groundnuts are to us. We use groundnuts for many of our dishes. When you have groundnuts, you can cook almost anything.*" (PROFIT+ area female).

Female respondents further explained that groundnuts help them address household needs. "*There are a lot of benefits of growing groundnuts. When I have a good harvest, and I happen not to have a chitenge* [traditional fabric wrap worn around the waist]*, I sell a quantity of groundnuts and use the money to buy a chitenge. Other times it is school fees that one requires, other times you just want to barter for kitchen utensils, blankets, or clothing. We manage to acquire all these things because of groundnut farming."* (BLA area female). Others explained that they grow the crop with certain purchases in mind. "*Some of us plan for what we want to do with the money or what we want to buy before we even grow groundnuts, so we strive to make sure [the groundnuts grow well]."* (BLA area female).

When male respondents named women as the decisionmaker for an activity, they similarly described women's interest in and knowledge of the crop. *"She has been growing groundnuts for a very long time and so has the experience needed."* (BLA area male). Other male respondents acknowledged their own lack of interest in the crop. *"We as men know that we focus much on the production of maize, and not on the production of groundnuts. Women, on the other hand, put a lot of attention on the production of groundnuts. That's the reason why they decide. . ."* (PROFIT+ area male).

Joint decisionmaking: *"We don't want to accuse each other when a problem occurs."* (BLA area male). When respondents reported joint decisionmaking for any given production-related decision, they often explained that husbands and wives deciding together was important to maintaining peace and avoiding conflict in the household. Planning and working together was seen by these respondents as important to the overall well-being of the household. *"If you as an individual decide not to compromise but only to do what you want even when your friend does not agree with what you have chosen, there will be arguments and arguments in the house. So to avoid that, we make decisions together."* (PROFIT+ area female).

When men decide: *"He is the one who makes decisions in this house so I listen and agree."* (PROFIT+ area female). When respondents reported men as the decisionmaker for any given production-related decision, they most frequently cited men's culturally-accepted status as head of the household. *"Because I am the head of household, I should decide."* (BLA area male). *"That is how we are created. He is the head and if I try to make that decision, I would be taking it away from him."* (PROFIT+ area female).

Households incorporate a mix of male, female, and joint decisionmaking when making groundnut production-related decisions. The above reasons for female, joint, and male decisionmaking might appear to be guiding principles that a household would apply to most or all decisions related to groundnut production. However, they are not. While male respondents more frequently reported joint decisionmaking than female respondents,[35] a mix of decisionmaking—with some decisions made by women, some by men, and still others jointly—was reported by all respondents.

Husbands and wives report differently. Married couples, when interviewed separately, more often than not painted different pictures of decisionmaking in their households. Of the 18 married couples interviewed for IDIs, none reported the same pattern of decisionmaking across the full set of production-related decisions (i.e., while couples reported the same decisionmaker for some decisions, there were no couples that reported similarly for all decisions).

Decision-Specific Findings

Findings related to specific groundnut production decisions are described below. Differences between project domains, as well as between male and female respondents, are noted where observed.

[35] Male interviewers (who were themselves Zambians local to Eastern Province) reported that they felt male respondents exaggerated joint decisionmaking, especially in the context of focus group discussions, because they did not want to admit their lack of involvement in front of their peers.

Who decides what type of seed to plant? Consistent with quantitative findings, female qualitative respondents most frequently named themselves as the household member who decides what type of seed to plant. There was little variation across project areas. Female respondents explained that they knew more about seed type as they are the ones who use groundnuts in cooking. *"The decision is made by the woman due to the fact that it is the woman who cooks, grinds. She is the one who prepares peanut porridge."* (BLA area female). Male respondents also frequently named women as the ones who decide on seed type for similar reasons.

Female respondents noted that in choosing a seed type, they consider its potential yield, maturity period (early preferred as that is considered best-suited to the current rain pattern), how it is to cook with, its size, and its affordability. Men reported they also considered potential yield, maturity period, and size, but noted that marketability was also a consideration.

Respondents of both sexes often mentioned that households hold back a portion of the groundnut harvest to plant next season, in effect choosing to plant that variety. Others reported that lack of finances and availability of certain seed types limits their ability to choose what type of seed to plant. "*Having a choice is when you have money to buy any seed you want."* (PROFIT+ area female). *"We just plant whatever is found."* (PROFIT+ area female).

Who decides where to source the seed? Female respondents reported a mix of female, male, and joint decisionmaking with regard to where to source groundnut seed. Some stated that women decide where to source seed because the crop is important to them; therefore, they make sure the seed is procured one way or another. Several female respondents explained that women take on piece work in order to procure seed. *"When I have money, I can buy seed. When I don't have, I go and work at my friend's farm who may need hired labor and is offering seed as payment."* (BLA area female). Male respondents that reported women as decisionmakers explained that women often procure seed through their friends or other households.

Female respondents who reported deciding jointly with their husbands on where to source groundnut seed noted that they sometimes needed their help to acquire seed. *"When you do not have the money to buy seed, and he is the one who has to look for it [money], you have no option but to work together."* (PROFIT+ area female). Male respondents most frequently reported this decision as jointly made, emphasizing the need to work together.

Who decides how much seed to plant? Respondents in the PROFIT+ area most frequently reported that determining how much groundnut seed to plant was made by women or jointly, whereas in the BLA area, respondents most frequently reported that the decision was made by men. While this decision is impacted by the amount of seed held back from the previous season and/or the ability to procure seed, other factors were also mentioned by respondents. In both project areas, there were respondents who explained that the amount of groundnut planted was determined by default after deciding how much maize and/or cotton to plant. "*When he [husband] says we will grow this much groundnut seed, it is because he wants to use most of the field for other crops such as maize*." (PROFIT+ area female). A male respondent similarly explained, *"Groundnuts have no market here. We prioritize maize and cotton and whatever piece of land remains, that is where we put the groundnuts*." (BLA area male). Determining how much maize to grow (and by default how much groundnut) is also impacted by input availability. *"What we consider first is the availability of inputs for maize. If we have enough fertilizer, then we will grow a lot of maize, meaning the groundnut field will be smaller."* (BLA area male).

Who decides what method to use for land preparation for groundnuts? Respondents most frequently reported that deciding what method to use for land preparation was made by men or jointly. Female and male respondents who reported that men decide what method to use often noted that men have primary responsibility for land preparation. *"He is the one who ridges the land so it gives him the upper hand in deciding what method to use."* (PROFIT+ area female). Those who reported that this decision was jointly made often also reported that they prepared the land jointly.

In deciding what method to use, respondents reported that they considered which methods were best for groundnut production, and which made weeding and harvesting easiest. For most, ridging was the preferred method.

Labor-related decisions: Who decides who prepares land? Who weeds? Who harvests? Who decides which fields to prioritize for weeding? For harvesting? In both project areas, labor-related decisions were most frequently reported as made by men or jointly. In deciding who will prepare land, weed, and harvest, respondents reported that they consider the size of the workload (e.g., size of fields and number of fields), availability of family labor, and ability to hire laborers. Male respondents often reported that, as head of household, it was their job to show leadership and distribute labor.

Some female respondents intimated that they needed to agree with their husbands on these decisions, less they be left tending to the groundnut field alone. *"Deciding separately [for women] means working separately."* (BLA area female). "*If you did not agree in the beginning, he will refuse you when you need him*." (PROFIT+ area female).

Others explained that they sometimes go against labor decisions made by their husbands, but not always without cost. "*Most times, it happens that he says, 'Let us go to the cotton field,' but you insist that you want to go to the groundnut field, so he lets you. He says, 'Since you seem to have the authority, you go the groundnut field.' We go, but it does not mean the decision was made in peace. Such decisions are made in anger and may cause problems later*." (BLA area female).

'When' decisions: When to weed? When to harvest? Decisions on when to weed and harvest groundnuts were frequently reported as made by the person who checks the field. As one BLA area female respondent explained, *"For the crop to do well, you need to check on it. It means you are interested in the crop."*

Both male and female respondents most frequently reported women as the decisionmaker of when to weed the groundnut field. *"The order of the day is for us women to keep checking on our crop."* (PROFIT+ area female). With regard to harvesting, female respondents again most frequently reported themselves as decisionmakers. *"The men rarely go to the groundnut fields."* (PROFIT+ area female). Male respondents were somewhat more likely to report joint decisionmaking, though many also reported that women make the decision of when to harvest groundnuts.

Who decides how to process groundnuts? Of all the decisions addressed by the qualitative component, the decision of how to process groundnuts was the one most often reported as made by women, as they are ones who cook and know how to make groundnut flour, peanut butter, and other products. *"When the crop comes home, it is me to decide what to do with it. I am the one with authority over it then."* (PROFIT+ area female). This sentiment was echoed by several male respondents. *"After harvesting and groundnuts are brought home, it is the responsibility of the woman to take care. She is the one who controls usage*." (PROFIT+ area male).

5.4 Groundnut Production and Labor

This section examines groundnut production and labor at the field level. For each of their household's groundnut fields, respondents reported who provided most of the labor for land preparation, planting, weeding, and harvesting of groundnuts.

Table 5.4. Groundnut production and labor by domain[a]

	Project		Comparison	
	Female	Male	Female	Male
Provided Most of the Labor for Land Preparation				
Did not do this activity	0.2	0.1	0.2	0.0
Family labor – female adults	17.1	8.1	19.5	5.7
Family labor – male adults	28.5	31.3	27.2	32.7
Family labor – male and female adults	46.3	53.2	46.7	57.3
Family labor – children only (<12 years)	0.4	0.3	1.1	0.7
Hired labor	7.2	5.8	5.0	3.6
Mechanical power	0.1	1.1	0.2	0.0
Total	100.0	100.0	100.0	100.0
Provided Most of the Labor for Planting				
Did not do this activity	0.0	0.0	0.0	0.0
Family labor – female adults	37.3	24.4	37.4	22.9
Family labor – male adults	5.1	6.0	5.8	5.1
Family labor – male and female adults	53.9	67.5	53.6	70.7
Family labor – children only (<12 years)	0.3	0.2	1.2	0.2
Hired labor	3.3	1.9	2.1	1.2
Mechanical power	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0
Provided Most of the Labor for Weeding				
Did not do this activity	0.4	0.0	0.7	0.5
Family labor – female adults	21.6	8.8	20.6	8.2
Family labor – male adults	7.2	9.2	14.2	13.8
Family labor – male and female adults	62.3	76.0	58.5	71.8
Family labor – children only (<12 years)	0.5	0.0	1.4	0.9
Hired labor	7.8	6.0	4.5	4.8
Mechanical power	0.1	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0
Provided Most of the Labor for Harvesting				
Did not do this activity	0.6	0.2	0.8	0.3
Family labor – female adults	18.9	10.6	19.6	9.2
Family labor – male adults	9.7	7.4	11.4	5.5
Family labor – male and female adults	63.1	78.4	62.6	80.0
Family labor – children only (<12 years)	0.4	0.1	1.3	0.9
Hired labor	7.1	3.3	3.9	3.6
Mechanical power	0.0	0.0	0.2	0.3
Total	100.0	100.0	100.0	100.0
n	**2,059**	**734**	**1,990**	**701**

[a] In the 2012/2013 agricultural season.

DK/Refused ranges from 0.0 to 0.3 percent; Missing = 0.0 percent.

As shown in Table 5.4, respondents in both domains most frequently reported that both male and female adults provide most of the labor for land preparation, planting, weeding, and

harvesting of groundnuts. For all activities, females in both domains were more likely than males in their same domain to report that female adults provide most of the labor. These results are consistent with qualitative findings (presented in the next section) which revealed that while women often report that men contribute to groundnut production, they maintain that they themselves provide the bulk of the labor. This was especially true for planting, weeding, and harvesting.

For land preparation, females reported that both male and female adults provided most of the labor for 46.3 percent of households' groundnut fields in the project domain, and males reported the same for 53.2 percent of the fields. In the comparison domain, females reported that both male and female adults provided most of the labor for 46.7 percent of households' groundnut fields, and males reported the same for 57.3 percent of the fields. The second most frequently reported provider of labor for land preparation (by both male and female respondents) was male adults.

For planting, females reported that both male and female adults provided most of the labor for 53.9 percent of households' groundnut fields in the project domain, and males reported the same for 67.5 percent of the fields. In the comparison domain, females reported that both male and female adults provided most of the labor for 53.6 percent of households' groundnut fields and males reported the same for 70.7 percent of the fields. The second most frequently reported group (by both male and female respondents) was female adults.

For weeding, females reported that both male and female adults provided most of the labor for 62.3 percent of households' groundnut fields in the project domain, and males reported the same for 76.0 percent of the fields. In the comparison domain, females reported that both male and female adults provided most of the labor for 58.5 percent of households' groundnut fields, and males reported the same for 71.8 percent of the fields. The second most frequently reported group varied by sex of respondents. Among females, the second most commonly reported group was female adults; among males, the second most commonly reported group was male adults.

For harvesting, females reported that both male and female adults provided most of the labor for 63.1 percent of households' groundnut fields in the project, and males reported the same for 78.4 percent of the fields. In the comparison domain, females reported that both male and female adults provided most of the labor for 62.6 percent of households' groundnut fields, and males reported the same for 80.0 percent of the fields. The second most frequently group (by both male and female respondents) was female adults.

Groundnut Production and Labor: Qualitative Findings

Focus group participants developed groundnut seasonal activity calendars and discussed who primarily provided labor for land preparation, planting, weeding, and harvesting of groundnuts, as well as shelling for the purpose of sales. In depth interview respondents also discussed

division of labor around these activities, as well as processing of groundnuts. The synthesized findings are presented below.

Cross Cutting Themes

Two main cross cutting themes emerged regarding the division of labor for groundnut production.

Women and labor: ***"When it comes to producing groundnuts, we are the ones who suffer with almost all the hardships."*** (PROFIT+ area female). Though female qualitative respondents most frequently reported that both male and female adults provide labor for groundnut production, they maintained that the bulk of the work falls to women. Female respondents explained that they provide more labor for groundnut production because they value the crop more than men. *"The woman is the one who commits herself so a lot of the activities related to groundnut farming are the woman's responsibility."* (BLA area female).

Men and labor: ***"When we say it's men [who provide labor], we may be lying because women are the ones who work hard in farming groundnuts, we don't participate as much..."*** (PROFIT+ area male). Though male respondents most frequently reported that both male and female adults provide labor for groundnut production,[36] some conceded that women bear the brunt of the labor burden. *"We are usually busy in maize or cotton fields and that is why we don't help in the groundnuts fields. We make decisions on groundnuts together, but it's mostly the women who do it."* (BLA area male).

Activity-Specific Findings

Findings related to specific groundnut production activities are described below.

Land Preparation. Respondents reported that land preparation for groundnut production generally occurs sometime between October and December. Both male and female qualitative respondents most frequently reported that land preparation is carried out by both male and female adults.

Planting. Planting generally occurs in November or December. While male respondents reported that both male and female adults plant groundnuts, female respondents more frequently reported that planting was the job of women or women and children. In comparing planting of groundnuts to planting of maize, some female respondents explained that planting groundnuts is more difficult because it involves bending over and making holes with a small axe.

[36] As with joint decisionmaking, male interviewers (who were themselves Zambians local to Eastern Province) reported that they felt male respondents exaggerated their role in groundnut production, especially in the context of focus group discussions, because they did not want to admit their lack of involvement in front of their peers.

However, when planting maize, a stick can be used to stamp a hole in the ground from the standing position, after which the seed is dropped in and then covered with soil using one's foot.

Weeding. Respondents explained that weeding is generally done between December and February, and must be completed before the plants flower as the flowers cannot be disturbed. Though male and female respondents most often reported that both male and female adults (and children) provide labor for weeding, some female respondents reported that female adults and children provide most of the labor. Female respondents further explained that weeding groundnuts is more labor intensive than weeding maize, as weeding groundnuts involves both removing weeds and then bringing soil to the plant to ensure it is properly supported. In addition, female respondents explained that 'clean' weeding is very important for groundnuts as weeds can impede the plants' pegs (withered flowers) from penetrating the ground and growing into nuts. "You have to weed first with your hands. You pull out all the weeds one by one. With maize, you just dig, you remove the weeds with a hoe, but with groundnuts, you have to weed the field clean." (PROFIT+ area female).

Harvesting. Harvesting of groundnuts usually occurs between April and June. Both male and female respondents most frequently reported that harvesting is the job of both male and female adults (and children). In describing the process of harvesting groundnuts, five stages were identified. First the plants must be dug up. This was usually described as men's work. Second, the groundnuts are heaped for drying; this was most often described as women's work. In the third stage, the heaped groundnuts are left in the field to dry for approximately two to four weeks. In the fourth stage, the pods are removed from the vines (a process called 'stripping'). This stage was described as the most time-consuming, and was most frequently described as the work of women or women and children. As one PROFIT+ area female explained, "Men say this gives them a lot of back aches." Finally, in the fifth stage, the pods are packed into sacks and transported to the homestead. This final stage was usually reported as women's work, though men sometimes assist with transport.

When describing a typical day during harvest season, female respondents reported waking at dawn, washing up, and going directly to the groundnut field. Once there, they harvest (strip pods) until midday, when they break to cook and eat, having carried food and cookware to the field. After eating, harvesting begins again. Whatever has been stripped that day is packed into sacks and carried (or bicycled) back to the homestead at dusk. Once home, women attend to household chores, bathe, and cook dinner. Those with young children attend to their needs, while those with older children are often assisted by them.

As with weeding, harvesting of groundnuts was described by female respondents as more difficult than harvesting of maize. "*Stripping has to be done one by one . . . touching each and every pod. With maize the cobs are big so it is done quickly.*" (PROFIT+ area female).

Processing. Both male and female respondents reported that labor for processing of groundnuts was primarily provided by women. With regard to shelling, women and children were most frequently named by both male and female respondents as the persons who shelled groundnuts, whether for selling or for home consumption. "They [the men] say it is a boring job and it's for women." (PROFIT+ area female). Respondents explained that shelling is not done at any particular time of year, but rather on demand for both sale and home usage. Respondents further explained that groundnuts are stored unshelled to protect them from pests. A few respondents (both male and female) reported that men assist with shelling and roasting of groundnuts.

5.5 Groundnut Sales and Decisionmaking

Decisionmaker of Whether to Sell Groundnuts and Person Who Sold

This section examines groundnut sales at the field level. For each of their household's groundnut fields, respondents reported if any of the harvest was sold, who decided to sell, and who carried out the actual sale. There was a notable difference across domains with regard to the percentage of respondents who reported some portion of the harvest from their household's groundnut field(s) was sold from February 2013 to April 2014 (see Table 5.5-1). In the project domain, female respondents reported that groundnuts were sold from 45.9 percent of households' groundnut fields and male respondents reported the same for 49.1 percent of fields. In the comparison domain, females reported that groundnuts were sold from only 31.0 percent of households' groundnut fields and males reported the same for 29.6 percent of the fields.

Table 5.5-1. Decisionmaker of whether to sell groundnuts and person who sold by domain[a]

	Project		Comparison	
	Female	**Male**	**Female**	**Male**
Was Any of the Harvest from this Groundnut Field Sold				
Yes	45.9	49.1	31.0	29.6
No	53.9	50.6	68.7	70.2
n	**2,059**	**734**	**1,990**	**701**
If Yes, Who Decided to Sell the Groundnuts				
Self	28.9	34.6	32.9	30.1
Partner/spouse	37.5	19.6	34.4	22.4
Self and partner/spouse jointly	30.5	42.6	31.8	42.9
Other	3.1	3.2	0.9	4.5
n	**922**	**348**	**640**	**222**
If Yes, Who Sold the Groundnuts				
Self	38.9	47.9	42.2	43.4
Partner/spouse	39.1	30.5	34.4	34.0
Self and partner/spouse jointly	16.9	17.6	19.7	16.2
Other	5.0	4.0	3.6	6.3
n	**922**	**348**	**640**	**222**

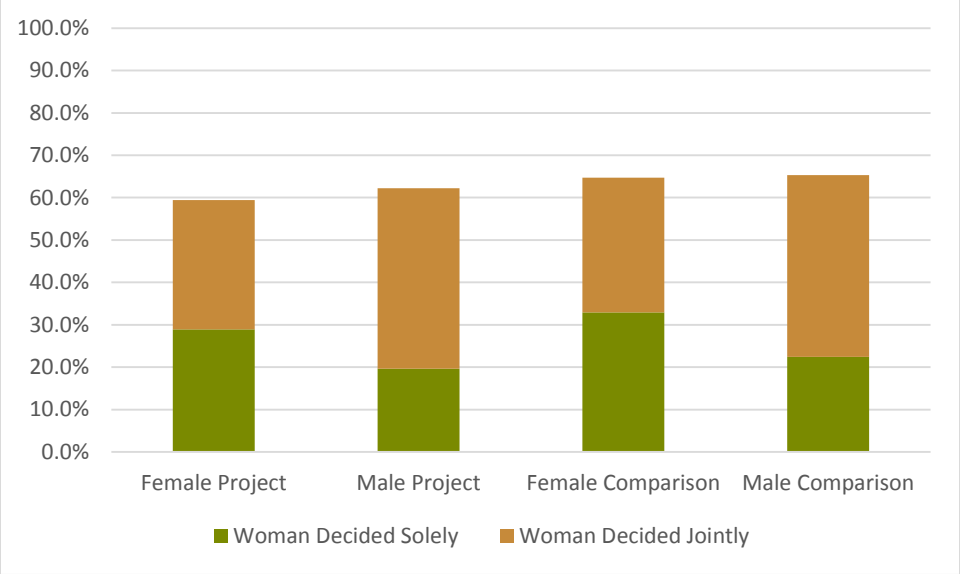
[a] From February 2013 to April 2014. Percentages are based on the number of groundnut fields.

DK/Refused ranges from 0.0 to 0.3 percent; Missing = 0.0 percent.

A primary outcome of interest to the evaluation is women's participation in groundnut sales, both in terms of deciding to sell and being involved in the actual sale. Figure 5.3 shows the percentage of households' groundnut fields where women solely or jointly decided to sell groundnuts from February 2013 to April 2014. A slightly higher proportion of respondents in the comparison domain than the project domain reported women solely or jointly decided to sell groundnuts. There was little variation by sex of respondent within the same domain.

Females reported that they solely or jointly decided to sell groundnuts for 59.4 percent of households' groundnut fields in the project domain, and males reported that their partner/wife solely or jointly made the decision to sell for 62.2 percent of the fields. In the comparison domain, females reported that they solely or jointly decided to sell groundnuts for 64.7 percent of households' groundnut fields, and males reported that their partner/wife solely or jointly made the decision to sell for 65.3 percent of fields.

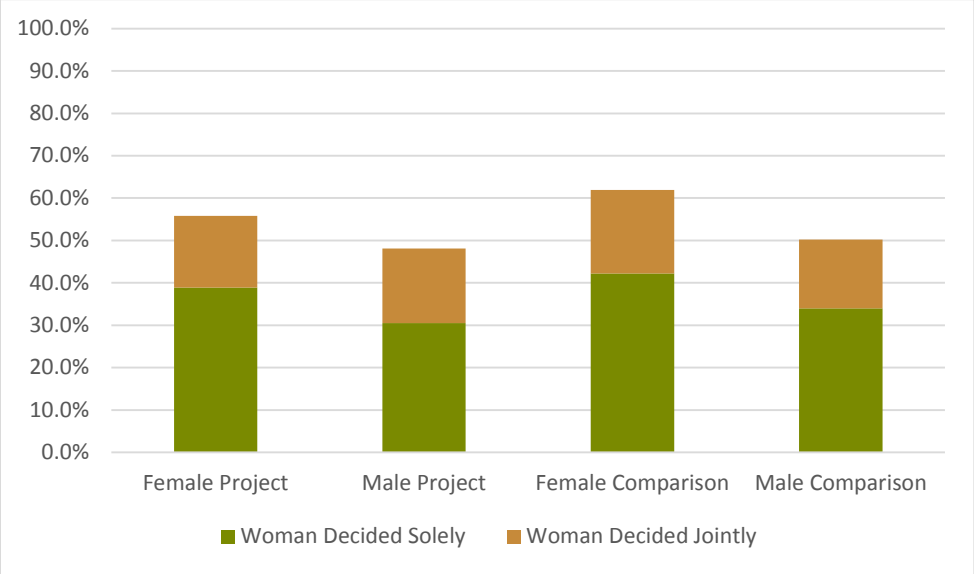
Figure 5.3. Percentage of households' groundnut fields where women solely or jointly decided to sell groundnuts[a]



[a] Among respondents who reported their household sold groundnuts from February 2013 to April 2014.

Figure 5.4 shows the percentage of households' groundnut fields where women solely or jointly sold groundnuts from February 2013 to April 2014. A slightly higher proportion of female respondents in the comparison domain reported women solely or jointly sold groundnuts compared to females in the project domain. There was little variation across domains among male respondents who reported their partner/wife solely or jointly sold groundnuts. In addition, a higher proportion of female respondents in both domains reported that they solely or jointly sold groundnuts compared to the proportion of males in the same domain that reported their partner/wife solely or jointly sold. Females reported that they solely or jointly sold groundnuts from 55.8 percent of households' groundnut fields in the project domain, and males reported that their partner/wife solely or jointly sold from 48.1 percent of the fields. In the comparison domain, females reported that they solely or jointly sold groundnuts from 61.9 percent of households' groundnut fields, and males reported that their partner/wife solely or jointly sold from 50.2 percent of the fields.

Figure 5.4. Percentage of households' groundnut fields where women solely or jointly sold groundnuts[a]



[a] Among respondents who reported their household sold groundnuts from February 2013 to April 2014.

Percentage of Households that Sold Groundnuts

This subsection, and the remaining subsections in Section 5.5, examine sales of groundnuts at the household level (i.e., total sales from all of a household's groundnut fields). In the project domain, 15.4 percent of females reported their household sold shelled groundnuts only, 26.9 percent reported sales of unshelled groundnuts only, and 4.5 percent reported sales of both shelled and unshelled groundnuts. In the comparison domain, 8.2 percent of females reported their household sold unshelled groundnuts only, 21.8 percent reported sales of shelled groundnuts only, and 1.0 percent reported sales of both. The percentage of males who reported their household sold shelled groundnuts only, unshelled groundnuts only, or both was 17.8 percent, 28.6 percent, and 4.8 percent respectively in the project domain, and 6.9 percent, 22.2 percent, and 1.1 percent respectively in the comparison domain.

Table 5.5-2. Percentage of households that sold groundnuts by domain[a]

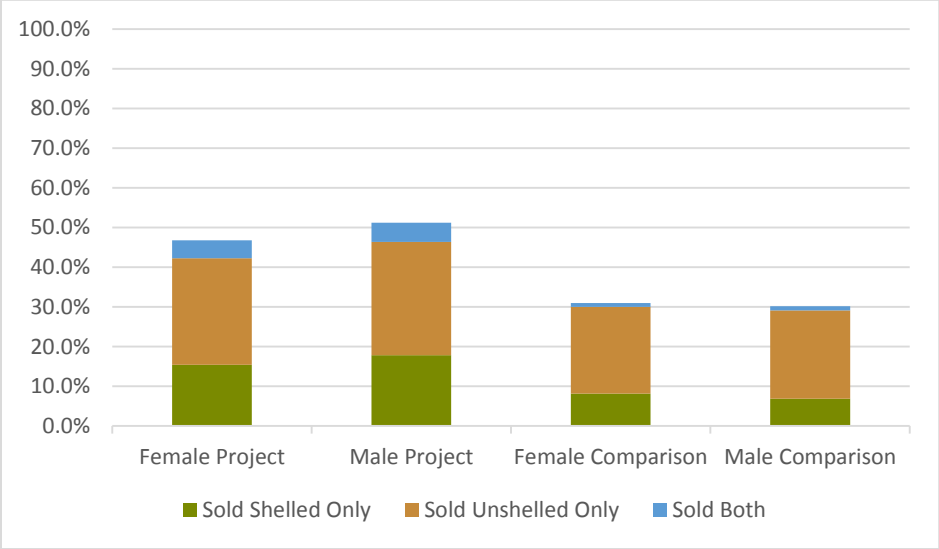
	Project		Comparison	
	Female	Male	Female	Male
Percent of Households that Sold Groundnuts				
Sold shelled groundnuts only	15.4	17.8	8.2	6.9
Sold unshelled groundnuts only	26.9	28.6	21.8	22.2
Sold both shelled and unshelled groundnuts	4.5	4.8	1.0	1.1
Did not sell any groundnuts	52.8	48.2	68.4	69.3
Total	100.0	100.0	100.0	100.0
n	**1,935**	**687**	**1,933**	**675**

[a] From February 2013 and April 2014.

DK/Refused ranges from 0.1 to 0.5 percent; Missing ranges from 0.0 to 0.3 percent.

The percentage of households selling groundnuts is a primary outcome of interest to the evaluation. As shown in Figure 5.5, the percentage of households selling groundnuts from February 2013 to April 2014 was notably higher in the project domain than the comparison domain. In the project domain, 46.8 percent of females and 51.2 percent of males reported their household sold groundnuts; in the comparison domain, only 31.0 percent of females and 30.2 percent of males reported the same.

Figure 5.5. Percentage of households that sold groundnuts[a]



[a] From February 2013 to April 2014.

Number of Sales and Kilograms Sold

Number of Sales[37]

Among respondents who reported their household sold shelled groundnuts, most reported selling only once. In the project domain, 79.1 percent of females and 79.0 percent of males reported one sale of shelled groundnuts, compared to 75.5 percent of females and 64.6 percent of males in the comparison domain (see Table 5.5-3).

Similar to shelled groundnuts, among respondents who reported their household sold unshelled groundnuts, most reported selling only once. In the project domain, 81.6 percent of females and 79.2 percent of males reported one sale of unshelled groundnuts, as did 80.0 percent of females and 77.2 percent of males in the comparison domain.

[37] For respondents who reported they sold groundnuts in small quantities (such as cups or gallons) numerous times, enumerators were instructed to determine the total amount sold and record the sale as one transaction. For example, if a household sold a 50 kg bag of groundnuts one gallon at a time, the number of sales was recorded as one, and the total amount sold was recorded as one 50 kg bag.

Table 5.5-3. Number of sales and total quantity sold by domain[a]

	Project		Comparison	
	Female	Male	Female	Male
Of Households that Sold Groundnuts, Number of Times Sold				
Shelled Groundnuts				
1	79.1	79.0	75.5	64.6
2+	20.9	21.0	24.5	35.4
Total	100.0	100.0	100.0	100.0
n	**374**	**151**	**177**	**52**
Unshelled Groundnuts				
1	81.6	79.2	80.0	77.2
2+	18.4	19.7	19.2	22.1
Total	100.0	100.0	100.0	100.0
n	**578**	**213**	**470**	**174**
Of Households that Sold Groundnuts, Total Quantity Sold				
Shelled Groundnuts				
0 to less than 50 kilograms	30.4	30.8	49.4	30.1
50 to less than 100 kilograms	30.2	22.0	21.5	30.5
100 kilograms or more	38.5	47.3	29.1	39.4
Total	100.0	100.0	100.0	100.0
Mean (kilograms)	**141.7**	**176.7**	**102.2**	**129.8**
n	**374**	**151**	**177**	**52**
Unshelled Groundnuts				
0 to less than 50 kilograms	41.3	30.5	45.0	35.7
50 to less than 100 kilograms	31.8	30.1	27.4	23.5
100 kilograms or more	26.5	38.9	27.5	40.7
Total	100.0	100.0	100.0	100.0
Mean (kilograms)	**101.0**	**124.1**	**92.2**	**116.9**
n	**577**	**213**	**470**	**174**

[a] From February 2013 to April 2014.

DK/Refused ranges from 0.0 to 1.1 percent; Missing ranges 0.0 to 0.8 percent.

Total Kilograms Sold[38]

Among respondents who reported their household sold shelled groundnuts from February 2013 to April 2014, higher proportions of females (38.5 percent) and males (47.3 percent) in the project domain reported total sales of 100 kilograms or more compared to respondents of the same sex (29.1 percent of females and 39.4 percent of males) in the comparison domain. In addition, higher proportions of males in both domains reported total household sales of shelled groundnuts of 100 kilograms or more compared to females in the same domain (see Table 5.5-3).

[38] Respondents could report sales in a variety of units, such as 50 kilogram bags and 75 kilogram bags, as well as other local units of measure such as tins. Conversion factors were obtained from IAPRI to convert all units to kilograms and are based on actual weights measured in the market place. These conversion factors are the same as those used in the RALS.

Among respondents who reported their household sold unshelled groundnuts from February 2013 to April 2014, higher proportions of males in both the project and comparison domains (38.9 percent and 40.7 percent, respectively) reported total household sales of unshelled groundnuts of 100 kilograms or more compared to females in the same domain (26.5 percent and 27.5 percent, respectively). There was little variation across domains among respondents of the same sex.

Mean total household sales of groundnuts are a primary outcome of interest to the evaluation. Figure 5.6 compares mean total household sales of shelled and unshelled groundnuts by domain. Mean total household sales of shelled groundnuts (among respondents who reported their household sold shelled groundnuts) from February 2013 to April 2014 were markedly higher in the project domain. In addition, males in both domains reported higher mean totals than females in their same domain. In the project domain, the mean total household sale of shelled groundnuts was 141.7 kilograms as reported by females and 176.7 kilograms as reported by males. In the comparison domain, it was 102.2 kilograms as reported by females and 129.8 kilograms as reported by males.

Figure 5.6. Mean total household sales (kilograms) of groundnuts[a]

[a] Among respondents who reported their household sold groundnuts from February 2013 to April 2014.

Mean total household sales of unshelled groundnuts (among respondents who reported their household sold unshelled groundnuts) from February 2013 to April 2014 were also higher in the project domain, though the difference was not as great as with shelled groundnuts. Again, males in both domains reported higher mean total sales than females in the same domain. In the project domain, the mean total household sale of unshelled groundnuts was 101.0 kilograms as reported by females and 124.1 kilograms as reported by males. In the comparison domain, it

was 92.2 kilograms as reported by females and 116.9 kilograms as reported by males (see Figure 5.6).

Largest Transaction of Groundnut Sales

Shelled Groundnuts

Among respondents who reported their household sold shelled groundnuts from February 2013 to April 2014, a higher proportion of respondents in the project domain (31.7 percent of females and 39.3 percent of males) reported the household's largest sale of shelled groundnuts was 100 kilograms or more, as compared to the proportion of respondents in the comparison domain (23.3 percent of females and 29.6 percent of males) that reported the same. The mean size of the largest sale of shelled groundnuts was reported as 124.2 kilograms by females and 159.8 kilograms by males in the project domain, and as 84.5 kilograms by females and 101.0 kilograms by males in the comparison domain (see Table 5.5-4).

Among respondents who reported their household sold shelled groundnuts from February 2013 to April 2014, females (45.3 percent) in the project domain, and both females (46.7 percent) and males (47.2 percent) in the comparison domain, most frequently reported that the buyer of the largest sale was retailers/marketers. However, males (40.4 percent) in the project domain most frequently reported the buyer was a small-scale trader or miller/processor through an agent or designated buying point. The second most frequently reported buyer of the largest sale, as reported by females (24.1 percent) in the project domain and both females (25.4 percent) and males (16.1 percent) in the comparison domain, was small-scale traders or millers/processors. For males (30.8 percent) in the project domain, it was retailers/marketers.

While the third most frequently reported buyer of the largest sale of shelled groundnuts in the project domain was reported as large-scale traders/wholesalers (19.9 percent of females and 18.0 percent of males), males and females in the comparison domain gave different reports. While females (13.4 percent) reported the buyer was other households, males (13.5 percent) reported the buyer was a large-scale trader/wholesaler.

Among respondents who reported their household sold shelled groundnuts from February 2013 to April 2014, the distance to the point of sale for the largest sale was most frequently reported as either 0 (sale occurred at the homestead) or 26 kilometers or more away from the homestead. Females in both domains most frequently reported sales occurred at the homestead (34.2 percent of females in the project domain and 34.7 percent in the comparison domain), whereas males in both domains most frequently reported that sales occurred 26 kilometers or more away from the homestead (36.9 percent of males in the project domain and 27.9 percent in the comparison domain).

Table 5.5-4. Largest transaction (shelled and unshelled) of groundnut sales by domain[a]

	Project				Comparison			
	Female		Male		Female		Male	
	Shelled	Unshelled	Shelled	Unshelled	Shelled	Unshelled	Shelled	Unshelled
Quantity Sold for Cash								
0 to less than 50 kilograms	36.1	46.7	37.3	34.2	59.3	50.2	41.3	42.7
50 to less than 100 kilograms	31.3	31.3	23.5	34.1	17.4	26.3	29.1	21.2
100 kilograms or more	31.7	21.5	39.3	30.7	23.3	22.7	29.6	35.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean (kilograms)	**124.2**	**90.9**	**159.8**	**107.9**	**84.5**	**79.9**	**101.0**	**96.9**
n	**374**	**578**	**151**	**213**	**177**	**470**	**52**	**174**
Sold to								
Small-scale trader or miller/processor	24.1	22.2	40.4	17.7	25.4	17.8	16.1	18.5
Large-scale trader/wholesaler	19.9	4.4	18.0	3.1	7.6	3.6	13.5	0.8
Retailer/marketer	45.3	61.2	30.8	58.8	46.7	65.9	47.2	68.2
Other households (for consumption)	5.1	6.6	5.0	13.9	13.4	8.5	11.5	8.2
Eastern Province Farmers Market	0.0	0.1	0.0	1.0	0.7	0.3	0.0	0.0
Other cooperative	0.6	0.0	0.5	0.0	0.6	0.5	0.0	0.0
NGO/faith based organization/church	0.3	0.0	0.0	0.0	0.0	0.3	2.2	0.0
Directly to miller/processor	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Out grower	0.7	0.2	1.5	0.8	0.0	0.2	0.0	0.0
COMACO	1.2	2.7	0.7	2.7	1.9	0.0	0.0	0.0
Schools, hospitals, or health centers	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Other	2.0	1.3	2.8	0.0	2.1	0.9	9.6	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
n	**374**	**578**	**151**	**213**	**177**	**470**	**52**	**174**

Table 5.5-4. Largest transaction (shelled and unshelled) of groundnut sales by domain[a] (continued)

	Project				Comparison			
	Female		Male		Female		Male	
	Shelled	Unshelled	Shelled	Unshelled	Shelled	Unshelled	Shelled	Unshelled
Distance to the Point of Sale from Homestead (Kilometers)								
0	34.2	84.3	29.0	84.6	34.7	88.9	24.2	89.8
1-5	14.6	6.5	9.4	7.2	10.2	4.1	17.8	6.5
6-10	5.1	2.3	6.1	1.1	11.5	2.6	17.2	0.7
11-15	4.9	1.5	3.5	1.5	10.8	0.8	2.3	0.0
16-20	5.2	1.2	7.8	1.3	5.8	0.4	6.4	0.8
21-25	4.3	1.0	4.6	1.4	3.8	0.5	4.2	0.9
26+	27.7	2.7	36.9	1.9	23.1	1.8	27.9	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
n	**374**	**578**	**151**	**213**	**177**	**470**	**52**	**174**
Primary Decisionmaker of How Money from Sale Was Used								
Self	22.5	27.8	26.5	29.3	29.2	30.3	25.9	29.0
Partner/spouse	33.4	32.4	8.2	14.2	33.7	29.6	19.2	14.3
Self and partner/spouse jointly	42.2	37.9	63.1	52.5	35.3	38.8	46.4	50.9
Other	1.4	1.2	2.1	2.0	1.7	0.3	8.5	3.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
n	**374**	**578**	**151**	**213**	**177**	**470**	**52**	**174**

[a] From February 2013 to April 2014.

[b] Households that sold groundnuts.

DK/Refused ranges from 0.0 to 3.9 percent; Missing ranges 0.0 to 1.1 percent.

Unshelled Groundnuts

Among respondents who reported their household sold unshelled groundnuts from February 2013 to April 2014, slightly higher proportions of female and male respondents in the comparison domain (22.7 and 35.4 percent, respectively) reported the household's largest sale of unshelled groundnuts was 100 kilograms or more compared to the proportion of respondents of the same sex in the project domain (21.5 and 30.7 percent, respectively). However, the mean size of the largest sale of unshelled groundnuts was higher in the project domain, where the mean was reported as 90.9 kilograms by females and 107.9 kilograms by males. In the comparison domain, the mean was reported as 79.9 kilograms by females and 96.9 kilograms by males.

Among respondents who reported their household sold unshelled groundnuts from February 2013 to April 2014, the most frequently reported buyer of the largest sale was retailers/ marketers (61.2 percent of females and 58.8 percent of males in the project domain and 65.9 percent of females and 68.2 percent of males in the comparison domain). The second largest buyer was reported as small-scale traders or millers/processors through an agent or designated buying point (22.2 percent of females and 17.7 percent of males in the project domain and 17.8 percent of females and 18.5 percent of males in the comparison domain). The third most frequently reported buyer of the largest sale of unshelled groundnuts was other households (6.6 percent of females and 13.9 percent of males in the project domain, and 8.5 percent of females and 8.2 percent of males in the comparison domain).

Among respondents who reported that their household sold unshelled groundnuts from February 2013 to April 2014, the distance to the point of sale for the largest sale of unshelled groundnuts was most frequently reported as 0 (occurred at homestead). In the project domain, 84.3 percent of females and 84.6 percent of males reported the largest sale of unshelled groundnuts occurred at home, as did 88.9 percent of females and 89.8 percent of males in the comparison domain.

Control of Proceeds

Female control of proceeds from groundnut sales is a primary outcome of interest to the evaluation. Figures 5.7 and 5.8 present the percentage of respondents that reported women solely or jointly decided how money was used from the largest sales of shelled and unshelled groundnuts, respectively.

A slightly higher proportion of males in the project domain than those in the comparison domain reported that their partner/wife was involved (either solely or jointly) in the decision of how to use proceeds from the largest sale of shelled groundnuts from February 2013 to April 2014. There was little variation across domains among females who reported they were involved in the decision of how to use the proceeds. Among respondents who reported their

household sold shelled groundnuts from February 2013 to April 2014, 64.7 percent of females and 71.3 percent of males in the project domain reported women solely or jointly decided on use of proceeds from the largest sale. In the comparison domain, 64.5 percent of females and 65.6 percent of males reported the same.

Figure 5.7. Percentage of respondents that reported women solely or jointly decided how to use proceeds from the largest sale of shelled groundnuts[a]

[a] Among respondents who reported their household sold groundnuts from February 2013 to April 2014.

Figure 5.8. Percentage of respondents that reported women solely or jointly decided of how to use proceeds from the largest sale of unshelled groundnuts[a]

[a] Among respondents who reported their household sold groundnuts from February 2013 to April 2014.

A slightly higher proportion of females in the comparison domain than those in the project domain reported they were solely or jointly involved in the decision of how to use proceeds

from the largest sale of unshelled groundnuts. There was little variation across domains among males who reported their partner/wife was involved in the decision. Among respondents who reported their household sold unshelled groundnuts from February 2013 to April 2014, 65.7 percent of females and 66.7 percent of males in the project domain reported women solely or jointly decided on use of proceeds from the largest sale. In the comparison domain, 69.1 percent of females and 65.2 percent of males reported the same.

Groundnut Sales and Decisionmaking: Qualitative Findings

Focus group discussion participants and in depth interview respondents discussed household decisionmaking related to the sale of groundnuts. The synthesized findings are presented below.

Table 5.5-5. Groundnut sales decisions addressed by qualitative component

Activity	Decision
Sales	Who decides when to sell? Who decides whether to sell shelled or unshelled? Who decides how much to sell? Who decides where to sell? Who decides who will do the selling?

Cross Cutting Themes

Cross-cutting themes related to groundnut sales decisions were similar to those reported for production-related decisions. When respondents reported women as the decisionmaker for any given sales-related decision, they often stated it was because women care more about groundnuts, put more effort into producing groundnuts, and have 'ownership' over the crop. When joint decisionmaking was reported, respondents frequently emphasized the importance of deciding together to avoid conflict. Men's culturally accepted status as head of the household was often the reason given when respondents reported men as the decisionmaker for sales-related decisions. As with production-related decisions, households reported a mix of male, female, and joint decisionmaking around groundnut sales-related decisions.

Decision-Specific Themes

Findings related to specific groundnut production decisions are described below. Differences between project areas, as well as between male and female respondents, are noted where observed.

Who Decides When to Sell? Both male and female respondents reported that deciding when to sell groundnuts, though influenced by price, is largely dictated by household needs. Sometimes needs are urgent, for example, to pay for health care. "If the child gets sick, you definitely need money to take him or her to the hospital. If selling the groundnuts is the only way of finding money, you sell them." (PROFIT+ area female). Other needs are less urgent.

"We women tend to face a short supply of everyday groceries such as salt. So sometimes you say to yourself, if I can shell ten cups of groundnuts, I will be able buy the salt I want." (PROFIT+ area female).

Items that respondents reported buying with proceeds from groundnut sales included groceries (salt and soap), inputs such as fertilizer, school uniforms, clothes, blankets, and kitchen items in addition to paying school fees, milling fees, and paying for hired labor or draft power. Items purchased did not vary by sex of respondents or across project areas.

Female respondents most often reported they decided when to sell, though some reported that men make this decision. Male respondents more commonly reported joint decisionmaking. Some respondents (more commonly in the BLA area), reported that they cannot dictate when to sell as the market is poor and they must wait for a buyer to come to them.

Who Decides Whether to Sell Shelled or Unshelled? Respondents reported that they sold shelled or unshelled groundnuts based on the buyer's preference, price, and availability of household or hired labor for shelling. While some female respondents reported deciding whether or not to sell groundnuts shelled or unshelled was a woman's decision, others stated it was a man's. Most male respondents reported it as a decision that was usually made jointly.

Who Decides How Much of the Crop to Sell? In deciding how much of the harvest to sell, respondents reported that they considered the size of the harvest, the amount needed for home consumption, and the amount needed to be held back for seed. Other factors included the size of the problem or household need being addressed by the sale, as well as price.

Female respondents were mixed on reporting who made decisions on the quantity of groundnuts to sell. Some female respondents stated that deciding on quantity to sell was a woman's decision, as they have authority over the harvest. Others said women make this decision because they know best how to apportion the crop. *"Being the woman of the house, I'm the one who knows the challenges we face, so it is me who decides how many bags to sell and how much to keep considering how much we have."* (BLA area female). Female respondents emphasized the need to keep groundnuts for home consumption and for seed. *"How much to leave for home consumption can only be decided by us*." (PROFIT+ area female). *"It is difficult to look for money to buy seed. The best is to keep seed in advance."* (PROFIT+ area female).

Female respondents who reported joint decisionmaking emphasized the need to budget as a family, whereas those who reported men as decisionmakers emphasized that men, as household heads, are responsible for bringing money into the home.

While most male respondents reported joint decisionmaking (for the purpose of joint budgeting and to avoid conflict), a few maintained that women have authority over the harvest.

"To avoid confusion in the home, she decides so that she can be able to plan what we need for home use." (PROFIT+ area male). "*Once they are in the granary, it is the responsibility of my wife to decide when to sell and how much to sell, and she just shares with me*." (BLA area male).

Who Decides Where to Sell? In the PROFIT+ area, respondents reported that they sold groundnuts from home to traders that came to them, or that they sold in Chipata town, or at the boma in their district. In the BLA area, respondents frequently voiced concerns about the lack of market, stating they only sold to other households or the occasional trader who happened by, or did not sell at all. "We have noted that groundnuts have no market so we would rather grow maize and cotton because they have a ready market. We just grow groundnuts for home use." (BLA area male). At some sites in the BLA area, respondents reported selling to COMACO, though more frequently those who mentioned COMACO reported that COMACO only recovered seed (respondents' experience with both PROFIT+ and COMACO is discussed in Chapter 8).

In deciding where to sell, some respondents emphasized that they did not have a choice; they sold to whoever might come to buy. Those who reported they had a choice in who to sell to stated that they considered the price offered, the buyer's ability to pay cash, distance to market and ability to transport the crop, and whether or not the buyer's scales were considered fair. Distance to market and ability to transport the crop was a barrier to some. "*Carrying our crop to faraway places is usually difficult because we do not have means, so we just wait for someone to come and buy from here*." (PROFIT+ area female).

Female respondents were mixed on reporting who made decisions on where to sell groundnuts. Those who said women decided reported that women have authority over the harvest and/or are the ones who check prices. *"I usually get to know about markets because I mix with a lot of fellow women."* (BLA area female). Those who said decisionmaking was joint emphasized cooperation and avoiding problems in the household. Those who said men decide where to sell reported that men were the ones who checked prices, and were also the ones better able to transport the crop to market (many mentioned bicycles as the means of transport).

Male respondents most frequently reported deciding where to sell was a decision that was made jointly in order to maintain peace in the household and avoid conflict.

Who Decides Who Will do the Selling? Deciding who will do the selling is closely linked to where the sale takes place. Both male and female respondents reported that when selling is done from the homestead (to a trader or other households), women tend to handle the sale, as they are more often the person found at home. However, some female respondents reported that they decided who sold as 'owner' of the crop. "If you are the one who provided most of

the labor, the man is also afraid to do anything without your authorization . . . If the buyer comes here, only the owner of the crop can deal with him, but if the decision is to sell somewhere else, I just tell my husband to put the crop on his bicycle and go sell." (PROFIT+ area female).

For sales away from home, female and male respondents in both project areas reported that men often handle the sale, as transport to market is often done by bicycle. *"Depending on the quantity, he will use an oxcart or bicycle which is hard work for us women."* (BLA area female).

Who Decides How to Use Cash from the Sale of Groundnuts? Male and female respondents in both project areas most frequently reported that how to use cash from the sale of groundnuts was a decision made jointly by husbands and wives. While joint decisionmaking was more commonly reported by male respondents, both male and female respondents emphasized the importance of joint budgeting. "We sit down and talk about how we will use the money . . . We have to see what is required, what we were growing those groundnuts for in the first place." (BLA area female). "You cannot make a budget alone as a man, you need to involve your wife in order to maintain unity in the house." (PROFIT+ area male). Some respondents noted that budgeting was done before sales. "When the money comes in, it is already budgeted for." (PROFIT+ area female).

Some female respondents reported that they decided on how to use cash from sales. These respondents explained the need to ensure that money from the sale was used to benefit the household. "*Once we sell groundnuts, we collect the money and buy things we lack in our homes. For instance if we lack a blanket, we buy that blanket, and if we lack plates, we buy the plates. When they [husbands] come back from where they were drinking from, we inform that we have sold the groundnuts and bought the plates or the blanket. The good part is, they can't drink beer with plates*." (PROFIT+ area female). "*When we sell the groundnuts, we give him the money and just tell him what is needed, like when we have to pay school fees. But if we see he is misusing the money, then we will take on the responsibility*." (BLA area female).

5.6 Groundnut Bartering

The percentage of households bartering (unprocessed) groundnuts between February 2013 and April 2014 was slightly higher in the project domain than the comparison domain (see Table 5.6). In the project domain, 8.6 percent of female respondents and 10.6 percent of male respondents reported their household bartered groundnuts, as compared to 6.9 percent of female respondents and 8.9 percent of male respondents in the comparison domain.

Table 5.6. Percentage of households that bartered groundnuts by domain[a]

	Project		Comparison	
	Female	Male	Female	Male
Percent of Households that Bartered Groundnuts				
Bartered shelled groundnuts only	1.2	1.1	0.7	1.1
Bartered unshelled groundnuts only	7.3	9.5	6.2	7.7
Bartered both shelled and unshelled groundnuts	0.1	0.0	0.0	0.1
Did not barter any groundnuts	90.8	89.0	92.5	90.5
Total	100.0	100.0	100.0	100.0
n	**1,935**	**687**	**1,933**	**675**

[a] From February 2013 to April 2014.

DK/Refused ranges from 0.1 to 0.5 percent; Missing ranges 0.0 to 0.3 percent.

5.7 Groundnut Processing and Sale/Barter of Groundnut Products

While nearly all respondents (97.8 percent or more) reported their household processed groundnuts into products such as groundnut flour and peanut butter, the sale/barter of these products was very rare, with less than 1.5 percent of those who processed groundnuts reporting their household sold or bartered the products, as shown in Table 5.7.

Table 5.7. Processing of groundnuts by domain[a]

	Project		Comparison	
	Female	Male	Female	Male
Household Processed Groundnuts				
Yes	98.3	99.3	97.8	98.5
No	1.4	0.2	1.5	1.3
Total	100.0	100.0	100.0	0.0
n	**1,935**	**687**	**1,933**	**675**
If Processed, Household Sold or Bartered Any of the Processed Groundnuts				
Yes	1.4	0.8	1.4	0.2
No	98.4	98.5	97.9	99.1
Total	100.0%	100.0%	100.0%	100.0%
n	**1,908**	**682**	**1,893**	**666**

[a] Processing in the 2012/2013 agricultural season; sales/barter from February 2013 to April 2013.

DK/Refused/Missing ranges from 0.3 to 0.7 percent.

6. Access to Productive Capital, Household Decisionmaking, and Group Membership

6.1 Ownership of Productive Assets

As shown in Tables 6.1-1 and 6.1-2, nearly all respondents (over 96.0 percent) reported their household had agricultural fields and non-mechanized farm equipment. In addition, over half of respondents reported their household had a house(s), bicycle(s), chickens/ducks/turkeys, small consumer durables, and small livestock. In the project domain, approximately 60.0 percent of respondents also reported their household had a cell phone, while the percentage in the comparison domain was just under half. For most assets, males were slightly more likely than females to report their household had the asset. An exception was a house, which was reported as an asset by a notably higher proportion of males (92.3 percent and 93.0 percent in the project and comparison domains, respectively) than females (70.7 percent and 76.7 percent in the same domains, respectively).

For the most commonly owned assets listed above, female respondents in both domains were much more likely to report joint ownership than males in their same domain. An exception was cell phones, where a slightly higher percentage of males than females in the comparison domain reported joint ownership.

Ownership of Productive Assets: Qualitative Findings

Male and female in depth interview respondents (18 married couples, 36 total respondents) were interviewed separately and asked about ownership and decisionmaking over a variety of household assets related primarily to agriculture. For some assets, respondents were also asked who had the authority to sell the asset and decide how proceeds were used. The assets included land, hand tools (e.g., hoes, axes), ploughs, tractors, threshers, planters, wheelbarrows, small farm equipment (e.g., sprayers, grass cutters, weeders), irrigation equipment (e.g., watering cans, treadle pumps), processing equipment (e.g., millers, shellers), bicycles, motorcycles, cars, trucks, cell phones, and savings accounts.

Most respondents reported their household owned land, though in a few cases the land was owned by family members outside the household. All respondents reported their household owned small hand tools, usually hoes and/or axes. The next most commonly owned assets were bicycles and cell phones. Less commonly owned assets included what many respondents referred to as 'man's tools'—ploughs, sprayers, and watering cans. No respondents reported ownership of tractors, threshers, planters, wheelbarrows, processing equipment, cars, or trucks. Only one household reported ownership of a motorbike, and two had savings accounts.

Table 6.1-1. Ownership of productive assets: Project domain

	Female			Male		
	HH Has	Respondent owns[a]		HH Has	Respondent owns[a]	
		Solely	Jointly		Solely	Jointly
Asset						
Agricultural fields	99.7	11.3	45.4	100.0	60.9	26.1
Large livestock	43.7	6.3	51.3	44.2	60.9	28.6
Small livestock	52.6	19.8	47.9	56.8	44.0	29.9
Chickens, ducks, turkeys, etc.	71.6	37.2	41.6	75.6	23.7	29.3
Fish pond or fishing equip.	1.3	9.8	15.0	2.8	90.1	4.7
Farm equipment (non-mech.)	96.3	9.6	65.6	98.2	50.0	42.6
Farm equipment (mech.)	6.7	5.3	36.8	4.5	89.5	6.3
Nonfarm business equipment	11.2	45.5	21.6	12.2	64.7	12.7
House	70.7	10.9	62.4	92.3	57.1	33.9
Large consumer durables	23.2	4.4	69.5	23.4	48.3	45.2
Small consumer durables	68.2	24.6	42.2	74.2	50.6	32.1
Cell phone	58.7	8.6	29.7	61.3	52.6	27.3
Other land not used for agriculture	5.8	12.0	53.7	9.4	69.1	25.8
Bicycle	75.3	4.6	33.5	80.1	68.3	21.6
Motorcycle	2.3	0.0	28.2	2.2	91.1	2.4
Car/truck	2.5	0.0	53.1	3.3	73.8	26.2
n	**1,935**			**687**		

[a] Respondents in households that have the asset.

HH = Household.

DK/Refused ranges from 0.0 to 0.3 percent; Missing ranges from 0.0 to 0.3 percent.

Table 6.1-2. Ownership of productive assets: Comparison domain

	Female			Male		
	HH Has	Respondent owns[a]		HH Has	Respondent owns[a]	
		Solely	Jointly		Solely	Jointly
Asset						
Agricultural fields	99.9	13.5	45.1	99.8	59.4	27.4
Large livestock	40.5	9.4	43.3	45.0	61.8	25.2
Small livestock	52.0	20.2	47.3	52.4	43.3	31.7
Chickens, ducks, turkeys, etc.	76.4	37.2	39.8	80.3	25.4	31.6
Fish pond or fishing equipment	3.2	43.7	14.5	4.2	60.7	3.8
Farm equipment (non-mech.)	97.8	9.4	64.4	99.1	43.5	47.4
Farm equipment (mech.)	8.8	5.5	47.4	5.3	79.5	20.5
Nonfarm business equipment	9.4	40.4	23.5	9.3	56.9	23.2
House	76.7	13.3	56.8	93.0	58.0	32.3
Large consumer durables	18.7	7.2	62.3	20.3	51.0	39.9
Small consumer durables	64.9	20.5	38.7	69.1	58.3	26.0
Cell phone	48.5	8.0	27.4	49.3	45.3	30.7
Other land not used for agriculture	5.9	11.7	45.0	9.1	81.9	18.1
Bicycle	80.4	5.6	29.4	84.6	76.5	14.6
Motorcycle	4.3	2.1	31.3	3.9	81.2	15.1
Car/truck	1.8	3.3	38.7	1.8	77.0	23.0
n	**1,933**			**675**		

[a] Respondents in households that have the asset.

HH = Household.

DK/Refused ranges from 0.0 to 0.3 percent; Missing ranges from 0.0 to 0.3 percent.

Differences in Responses between Husbands and Wives

Husbands and wives more often than not gave differing accounts of who owned and had decisionmaking authority over household assets. For example, when discussing land, only five of the 18 married couples interviewed provided similar responses to both questions—'Who owns the land?' and 'Who decides who can use the land?' There were no instances where husbands and wives gave identical reports of who owned and who decided who used all the assets in their household. In several cases, couples even gave different accounts of whether or not certain assets existed in their household.

An example of the complexity around asset ownership and control is illustrated by a married couple who (separately) described the status of two bicycles in their home. The female respondent reported that she considered one bicycle, owned by her husband before marrying, as solely his. She considered the second bicycle, bought after marrying, jointly owned. She stated that her husband could loan out either bicycle for free, but that she only has the authority to loan out the jointly-owned bicycle—and only if she charges a fee. She further reported that her husband has sole authority to decide to sell either bicycle. However, she explained that while he could decide how to use the cash from the sale of the first bicycle on his own, he would have to decide jointly with her on the second. Her husband, on the other hand, reported that he owned both bicycles, decides who can use both bicycles, and can also decide on his own whether or not to sell either bicycle. However, he reported he and his wife would decide jointly on how to use the cash from the sale of either one.

Who Decides Who Can Use an Asset

The question 'Who decides who can use the asset?' almost always elicited responses about who had the authority to loan the asset to someone outside the home, rather than who decided which persons within the household could use the asset. Seemingly, anyone in the household who knew how to use the asset was free to use it.

In addition, while sole ownership was often equated with also being the person who decided who could use (loan out) an asset, joint ownership was less frequently equated with deciding jointly who could use the asset (decisionmaking authority often reverted to the husband).

Land: Male Owned and Controlled

Sole female ownership of land was rare, with only one female respondent in each project area reporting she owned land solely. Six female and six male respondents reported joint ownership of land. However, no females who reported joint ownership of land also reported that they had joint decisionmaking authority over land, instead reporting their husbands as sole decisionmakers. Of the six male respondents who reported joint ownership of land, only two reported joint decisionmaking authority with their wives.

Nearly all respondents reported that their land could not be sold by anyone in the household because it was traditional land and/or because selling land was something they simply would not contemplate doing. *"If we sold our land, where would we grow crops? No one has the authority to sell."* (PROFIT+ area female). *"We don't sell land. We are not allowed to sell land. Land is reserved for children's future use."* (PROFIT+ are male). *"We do not sell land but crops because selling land is disastrous."* (BLA area male).

Bicycles and 'Man's Tools': Male Owned and Controlled

Respondents who reported their households had bicycles most frequently reported them as male owned and controlled. Only a few respondents in each project area reported ownership of ploughs, sprayers, and watering cans. Husbands in the PROFIT+ area tended to report their households owned greater numbers of these assets than their wives, whereas asset reporting was more consistent among husbands and wives in the BLA area.

Female respondents frequently referred to ploughs, sprayers, and watering cans as 'man's tools.' Report of sole or joint female ownership or control of these assets by female respondents was uncommon. *"We follow our tradition, like the tools, I have no power to authorize anyone to use them."* (BLA area female). Others stated that men decide on these tools because they buy them and therefore own them. *"The tools belong to the man because he is the one who sources them."* (BLA area female). Other respondents explained that men have decisionmaking authority over these tools because if they are damaged, it will be up to them to repair or replace them. *"He decides because he is the one who fixes them if something goes wrong."* (PROFIT+ area female).

While males in the BLA area reported male ownership of 'man's tools', males in the PROFIT+ area most frequently reported joint ownership. However, males in both project areas reported male control over the assets. Men explained that the decision to loan out these assets belonged to them because they are responsible for their maintenance. *"It is me who makes the decision because I know where to get spare parts in case it is damaged."* (PROFIT+ area male).

While most female respondents reported they did not want to have decisionmaking authority over 'man's tools', two respondents said they would like to be able to loan out the tools. "*The [watering] can, say someone came and said, madam, lend me that can, I would want to be able to give them for them to go and use and they bring back*." (PROFIT+ area female). Some female respondents further explained that there are other household assets that they control and that their husband cannot lend out. *"There are also things that are under my care and I am the only one that can allow anyone to use them. Just like there are assets that only he can decide on."* (PROFIT+ area female).

Eight female respondents reported ever arguing with their husband over an asset. In all but one instance, either the husband or wife loaned out an asset they did not have decisionmaking authority over. Only two men reported ever arguing over an asset with their wives. In both cases, the disagreement was over land use.

Hand Tools: Jointly Owned and Controlled

All respondents reported their households owned small hand tools, usually hoes and axes. Sole female ownership of hand tools was rare. However, 12 male and 12 female respondents reported joint ownership of hand tools, with slightly less also reporting joint decisionmaking authority over the tools.

Cell Phones: Individually Owned and Controlled

Twenty-four of the 36 respondents reported their household had one or more cell phones. Eight women reported owning their own cell phone, and nine men reported their wife was the sole owner of a cell phone. Of the eight women who reported they owned a cell phone, all reported they had sole decisionmaking authority over who used the phone. Five also reported they could decide on their own to sell the phone and how to use cash from the sale.

Of the nine men who reported their wife as sole owner of a cell phone, seven reported that their wife had sole decisionmaking authority over who used the phone. Seven also reported their wives could decide on their own to sell the phone and could also decide how to use the cash from the sale on their own.

6.2 Ownership of Financial Assets

As shown in Tables 6.2-1 and 6.2-2, ownership of any of three financial assets (savings in a bank, savings in a group association, and cash/savings—not in a bank/group/association) was reported by 21.0 percent of females and 29.5 percent of males in the project domain, and by 19.0 percent of females and 30.8 percent of males in the comparison domain. The most frequently reported financial asset was cash/savings (not in a bank/group/association). Males in the comparison domain were more likely to report cash/savings (not in a bank/group/association) than those in the project domain, while there was little variation among females across domains. In addition, males were more likely to report cash/savings (not in a bank/group/association) than females in their same domain. In the project domain, 12.3 percent of females and 19.6 percent of males reported such cash/savings, as compared to 12.8 percent of females and 25.0 percent of males in the comparison domain.

Joint ownership of cash/savings (not in a bank/group/association) was more frequently reported by respondents in the comparison domain than the project domain. Females in the project domain more frequently reported joint ownership than males in their same domain, while there was little variation among males and females in the comparison domain. In the project domain, 56.0 percent of females and 47.7 percent of males reported joint ownership, while 61.1 percent of females and 60.2 percent of males in the comparison domain reported the same.

Savings in a bank was the second most commonly reported financial asset. Respondents in the project domain more frequently reported savings in bank. There was little variation by sex within domains. In the project domain, 10.1 percent of females and 11.6 percent of males reported their household had a savings account, as compared to only 6.5 percent of females and 6.7 percent of males in the comparison domain.

Joint ownership of savings in a bank was reported by a slightly higher proportion of respondents in the comparison domain. In both domains, females were notably more likely to report joint ownership of savings in a bank than males in their same domain. In the project domain, 45.4 percent of females and only 6.1 percent of males reported joint ownership of savings in a bank; in the comparison domain, 49.5 percent of females and only 11.6 percent of males reported the same.

Table 6.2-1. Ownership of financial assets: Project domain

	Female				Male			
	HH Has	Respondent owns[a] Solely	Respondent owns[a] Jointly	Can access by herself[a]	HH Has	Respondent owns[a] Solely	Respondent owns[a] Jointly	Can access by himself[a]
Asset								
Savings account in a bank	10.1	26.9	45.4	60.2	11.6	92.3	6.1	85.3
Savings in group/association	5.0	51.0	17.6	78.3	4.7	(46.5)	(33.1)	(41.3)
Cash and savings – not in bank/group/association	12.3	28.7	56.0	87.8	19.6	42.4	47.7	67.3
Any of the three[b]	21.0	NA	NA	NA	29.5	NA	NA	NA
n	**1,935**				**687**			

[a] Respondents in households that own asset.

[b] Percent of respondents that reported their HH had one or more of the three assets.

HH = Household; NA = Not applicable.

DK/Refused ranges from 0.0 to 0.8 percent; Missing ranges from 0.0 to 0.2 percent.

Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 6.2-2. Ownership of financial assets: Comparison domain

	Female				Male			
	HH Has	Respondent owns[a] Solely	Respondent owns[a] Jointly	Can access by herself[a]	HH Has	Respondent owns[a] Solely	Respondent owns[a] Jointly	Can access by himself[a]
Asset								
Savings account in a bank	6.5	15.7	49.5	52.5	6.7	78.3	11.6	82.9
Savings in group/association	3.8	67.5	13.7	73.4	1.7	*	*	*
Cash and savings – not In bank/group/association	12.8	28.7	61.1	89.7	25.0	31.4	60.2	87.2
Any of the three[b]	19.0	NA	NA	NA	30.8	NA	NA	NA
n	**1,933**				**675**			

[a] Respondents in households that own asset.

[b] Percent of respondents that reported their HH had one or more of the three assets.

HH = Household; NA = Not applicable.

DK/Refused ranges from 0.0 to 2.9 percent; Missing = 0.0 percent.

Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

6.3 Access to Credit

Tables 6.3-1 and 6.3-2 present findings on access to credit sources, such as friends or relatives, as well as other formal and informal lending sources. Also presented are findings on decisionmaking, including who made the decision to access credit, and who decided how to use the cash or in-kind item borrowed.

The most frequently reported credit source in both domains in the past 12 months was friends or relatives. In the project domain, 14.8 percent of females and 16.4 percent of males reporting that someone in their household borrowed from friends or relatives in the past12 months, and 11.1 percent of females and 15.1 percent of males in the comparison domain reported the same.

Respondents in the comparison domain were more likely to report that women were solely or jointly involved in the decision to borrow from friends or relatives than those in the project domain. In addition, the proportion of females that reported they were involved in the decision to borrow was notably higher than the proportion of males in the same domain that reported their partner/wife was involved in the decision. In the project domain, 50.9 percent of females and only 18.6 percent of males reported women were involved in the decision to borrow from friends or relatives; in the comparison domain, 61.2 percent of females and 34.0 percent of males reported the same.

Female respondents in the comparison domain more frequently reported they were involved in the decision of how to use the money borrowed from friends or relatives than females in the project domain. For males, the opposite was true, with a higher proportion of males in the project domain reporting their wife/partner was involved in deciding how to use the borrowed funds than those in the comparison domain. In both domains, a higher proportion of females reported being involved in the decision compared to the proportion of males in the same domain who reported their wife/partner was involved. In the project domain, 62.8 percent of females and 43.9 percent of males reported women were involved in how to use the borrowed funds; in the comparison domain, 67.3 percent of females and 39.9 percent of males reported the same.

Table 6.3-1. Access to credit: Project domain

	Female					Male				
	Any HH member borrowed	Decision to borrow made[a]		Decision how to use $ made[a]		Any HH member borrowed	Decision to borrow made[a]		Decision how to use $ made[a]	
		By self	Jointly	By self	Jointly		By partner	Jointly	By partner	Jointly
Credit Source										
NGO	4.7	33.9	23.1	30.2	28.6	7.2	6.4	53.4	7.8	56.2
Informal lender	**5.3**	**27.3**	**15.2**	**27.0**	**27.8**	**5.3**	**(5.8)**	**(36.9)**	**(9.2)**	**(56.5)**
Friends or relatives	14.8	33.8	17.1	30.5	32.3	16.4	7.0	11.6	9.9	34.0
Group based microfinance	**4.8**	**67.4**	**15.5**	**62.5**	**26.1**	**2.8**	*	*	*	*
n	**1,935**					**687**				

[a] Respondents in households that took loans or borrowed cash/in-kind in past 12 months.

HH = Household; NGO = Nongovernmental organization.

DK/Refused ranges from 0.0 to 0.3 percent; Missing from 0.0 to 0.2 percent.

Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Table 6.3-2. Access to Credit: Comparison domain

	Female					Male				
	Any HH member borrowed	Decision to borrow made[a]		Decision how to use $ made[a]		Any HH member borrowed	Decision to borrow made[a]		Decision how to use $ made[a]	
		By self	Jointly	By self	Jointly		By partner	Jointly	By partner	Jointly
Credit Source										
NGO	**3.0**	23.8	35.8	20.2	49.1	4.2	(9.5)	(30.2)	(4.7)	(49.9)
Informal lender	**3.3**	**34.0**	12.4	**27.7**	**24.8**	**2.5**	*	*	*	*
Friends or relatives	**11.1**	40.3	20.9	37.2	30.1	15.1	9.0	25.0	10.0	29.9
Group based microfinance	**2.8**	**69.4**	9.9	**65.1**	**10.9**	**1.8**	*	*	*	*
n	**1,933**					**675**				

[a] Respondents in households that took loans or borrowed cash/in-kind in past 12 months.

HH = Household; NGO = Nongovernmental organization.

DK/Refused ranges from 0.0 to 0.3 percent; Missing from 0.0 to 0.2 percent.

Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

6.4 Participation in Out-Grower Schemes

Just under half of respondents reported that a household member participated in an out-grower scheme—45.4 percent of females and 47.9 percent of males in the project domain, and 46.5 percent of females and 46.8 percent of males in the comparison domain (see Table 6.4).

Table 6.4. Participation in out-grower schemes[a] by domain

	Project		Comparison	
	Female	**Male**	**Female**	**Male**
Percent of Households Where a Household Member Participated in an Out-Grower Scheme				
Yes	45.4	47.9	46.5	46.8
No	54.2	52.1	53.4	53.2
Total	100.0	100.0	100.0	100.0
n	**1,935**	**687**	**1,933**	**675**
Made Decision to Participate[b]				
Self	17.0	62.8	20.3	57.8
Partner/spouse	57.2	8.7	58.3	7.0
Self and partner/spouse jointly	24.2	25.4	19.2	31.1
Other	1.7	3.1	2.1	4.0
Total	100.0	100.0	100.0	100.0
n	**877**	**320**	**872**	**297**
Decided How Inputs Were Used[b]				
Self	13.9	53.4	18.2	50.1
Partner/spouse	51.6	6.3	52.9	5.3
Self and partner/spouse jointly	32.3	36.6	27.0	40.6
Other	1.9	3.4	1.9	4.0
Total	100.0	100.0	100.0	100.0
n	**877**	**320**	**872**	**297**

[a] An out-grower scheme is a contractual partnership between growers or landholders and a company for the production of commercial agricultural products.

[b] Among households that participated in any out-grower scheme.

DK/Refused ranges from 0.0 to 0.3 percent; Missing ranges 0.0 to 0.2 percent.

Among those who reported their household participated in an out-grower scheme, most reported that a male member decided to participate. In the project domain, 57.2 percent of females reported that their partner/spouse made the decision to participate, and 62.8 percent of males similarly reported themselves as the person who decided to participate. In the comparison domain, 58.3 percent of females reported that their partner/spouse made the decision to participate, and 57.8 percent of males similarly reported themselves as the person who decided to participate.

A similar pattern was seen with decisionmaking regarding how to use inputs received through the out-grower scheme, with respondents most frequently reporting males as the decisionmakers.

6.5 Individual Leadership and Influence in the Community

Male respondents were more likely than female respondents to report they were fairly or very comfortable raising their opinion in a community meeting (see Table 6.5). In the project domain, 49.2 percent of females and 77.4 percent of males reported they were fairly or very comfortable, as did 49.1 percent of females and 82.5 percent of males in the compassion domain. Females in both domains more frequently reported they were not at all comfortable raising their opinion (32.8 percent project and 30.2 percent comparison) compared to males in the same domain (10.4 percent project and 7.4 percent comparison).

Table 6.5 Individual leadership and influence in the community by domain

	Project		Comparison	
	Female	Male	Female	Male
Percent of Respondents Comfortable Raising Their Opinion at a Community Meeting				
No, not at all comfortable	32.8	10.4	30.2	7.4
Yes, but with a great deal of difficulty	6.0	4.7	6.9	3.2
Yes, but with a little difficulty	10.2	6.9	12.8	6.7
Yes, fairly comfortable	22.2	30.3	24.2	35.4
Yes, very comfortable	27.0	47.1	24.9	47.1
Total	100.0	100.0	100.0	100.0
n	**1,935**	**687**	**1,933**	**675**

DK/Refused ranges from 0.2 to 1.9 percent; Missing = 0.0 percent.

6.6 Household Decisionmaking

Over 98.0 percent of respondents in both domains reported that decisions were made in their household related to minor household expenditures (see Tables 6.6-1 and 6.6-2). Males in the project domain were somewhat more likely than those in the comparison domain to report that their partner/wife was normally involved (either solely in jointly) in decisions related to minor household expenditures, while there was little variation across domains among females who reported they were normally involved in such decisions. A higher proportion of females in both domains reported they were normally involved in decisions related to minor household expenditures compared to the proportion of males in their same domain that reported their wife/partner was normally involved. Of those who reported decisions were made in their household regarding minor expenditures, 78.4 percent of females and 74.5 percent of males in the project domain reported women were normally involved; in the comparison domain, 80.2 percent of females and 69.5 percent of males reported the same.

Over 60.0 percent of respondents in both domains reported decisions were made in their household regarding whether or not to use family planning. While there was little variation across domains among females, males in the project domain more frequently reported that their wife/partner was normally involved in such decisions than those in the comparison domain. Of those who reported decisions were made in their household related to using family planning, 80.7 percent of females and 79.6 percent of males in the project domain reported women were normally involved; in the comparison domain, 82.7 percent of females and 70.1 percent of males reported the same.

Females were asked about decisionmaking related to spending their own money. Over 92.0 percent of females in both domains reported that such decisions were made in their household. Of those who reported decisions were made in their household related to spending their own money, 88.3 percent of females in the project domain reported they were normally involved, as did 89.5 percent of females in the comparison domain.

Respondents less frequently reported decisions were made in their household related to non-farm business activity, own wage/salary employment, and major household expenditures. With regard to non-farm business, there was little variation across domains among females, while males in the project domain more frequently reported that their wife/partner was normally involved in such decisions than those in the comparison domain. For own wage/salary employment, there was little variation across domains among males, while females in the comparison domain more frequently reported that they were normally involved in decisionmaking than females in the project domain. For decisionmaking related to major household expenditures, there was little variation across domains for either sex.

Table 6.6-1. Household decisionmaking: Project domain

	Female			Male		
	HH engages in activity	Decisions normally made[a]		HH engages in activity	Decisions normally made[a]	
		By self	Jointly with partner		By partner/spouse	Jointly with partner
Activity						
Non-farm business activity	48.1	33.7	24.5	41.2	11.7	29.2
Own wage/salary employment	54.3	54.2	22.8	44.5	3.7	37.0
Major household expenditures	53.0	17.5	37.9	48.9	6.7	52.9
Minor household expenditures	99.1	54.5	23.9	99.1	36.4	38.1
Whether or not use family planning	69.3	43.0	37.7	67.2	24.8	54.8
Spending own money	93.2	66.5	21.8	N/A	N/A	N/A
n	**1,935**			**687**		

[a] Of respondents that report their household engages in the activity.

DK/Refused ranges from 0.0 to 1.3 percent; Missing from 0.0 to 0.3 percent.

Table 6.6-2. Household decisionmaking: Comparison domain

	Female			Male		
	HH engages in activity	Decisions normally made[a]		HH engages in activity	Decisions normally made[a]	
		By self	Jointly with partner		By partner/spouse	Jointly with partner
Activity						
Non-farm business activity	37.9	32.5	25.2	31.6	9.3	23.4
Own wage/salary employment	54.7	60.4	22.7	38.1	1.9	37.8
Major household expenditures	50.7	19.1	39.3	39.0	5.0	52.8
Minor household expenditures	98.0	57.4	22.8	98.9	30.7	38.8
Whether or not use family planning	64.5	47.7	35.0	61.1	19.0	51.1
Spending own money	92.8	71.8	17.7	N/A	N/A	N/A
n	**1,933**			**675**		

[a] Of respondents that report their household engages in the activity.

DK/Refused ranges from 0.0 to 1.3 percent; Missing from 0.0 to 0.3 percent.

6.7 Group Membership

Table 6.7 presents results related to group membership. The groups of most interest to the impact evaluation include COMACO, EPFC, other agricultural producer's groups, and DWAs.

COMACO was reported as present in the community by approximately one-third of respondents in the project domain, but by less than one-sixth of those in the comparison domain (32.7 percent of females and 35.0 percent of males in the project domain and only 15.3 percent of females and 14.6 percent of males in the comparison domain). Among those who reported that COMACO was present in the community, similar proportions (approximately one-quarter) of females and males in both domains reported they were members.

EPFC was reported as present in the community by similar proportions of females across domains (29.1 percent in the project domain and 27.4 percent in the comparison domain). Males in both domains were notably less likely to report the presence of EPFC; this was especially true in the comparison domain, where only 12.8 percent of males stated EPFC was present as compared to 17.0 percent of males in the project domain. Among those who reported EPFC was present in the community, respondents in the comparison domain (42.3 percent of females and 33.6 percent of males) were more likely to report they were members than respondents of their same sex in the project domain (31.5 percent of females and 27.2 percent of males). Females were more likely to report being members of EFPC than males in their same domain.

'Other agricultural producer's groups' were reported by approximately one-third of respondents in the project domain, compared to approximately only one-quarter in the comparison domain (32.2 percent of females and 38.5 percent of males in the project domain and 27.9 percent of females and 24.4 percent of males in the comparison domain). Among those who reported other agricultural producer's groups were present in the community, respondents in the comparison domain (44.4 percent of females and 50.3 percent of males) were more likely to report they were members than were respondents of the same sex in the project domain (35.8 percent of females and 46.9 percent of males). Males were more likely to report being members of other agricultural producer's groups than were females in the same domain.

A DWA was reported as present in the community by a slightly higher proportion of females in the comparison domain (15.2 percent) than the project domain (11.7 percent). In both domains, approximately one-quarter of those who reported the presence of a DWA in their community similarly reported they were members.

Table 6.7. Group membership by domain

	Project				Comparison			
	Female		Male		Female		Male	
	Group is in community	Is an active member[a]	Group in the community	Is an active member[a]	Group is in community	Is an active member[a]	Group in the community	Is an active member[a]
Group								
EPFC	29.1	31.5	17.0	27.2	27.4	42.3	12.8	33.6
COMACO	32.7	22.2	35.0	24.9	15.3	24.2	14.6	22.1
Other agricultural producer's group	32.2	35.8	38.5	46.9	27.9	44.4	24.4	50.3
Livestock/fisheries producer's group	12.2	10.9	8.2	(19.0)	12.0	16.4	4.6	(14.0)
Water users' group	54.4	17.7	47.8	21.4	55.8	26.3	46.6	22.8
Forest users' group	15.1	8.2	10.3	18.9	13.4	7.7	5.6	(21.0)
Credit or microfinance group	27.4	24.8	14.2	7.6	23.0	20.1	16.5	7.9
Trade and business association	8.8	22.0	3.6	*	6.9	11.4	1.5	*
Civic groups	30.0	11.6	26.8	10.1	27.4	13.4	15.8	10.9
Religious group	84.1	67.5	81.1	53.3	80.9	68.0	84.9	57.2
DWA	11.7	25.5	N/A	N/A	15.2	25.7	N/A	N/A
Other women's group	15.0	40.3	N/A	N/A	17.7	49.0	N/A	N/A
Other	4.7	54.0	7.9	(49.6)	6.3	73.6	5.6	(36.2)
n	**1,935**		**687**		**1,933**		**675**	

[a] Respondents who have the group in the community.

DK/Refused ranges from 0.0 to 6.5 percent; Missing = 0.0 percent.

Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Group Membership: Qualitative Findings

IDI respondents were asked if they belonged to any agricultural groups such as cooperatives or clubs. Membership in an agricultural group was more common among BLA area respondents than PROFIT+ area respondents. In the BLA area, seven of nine women and seven of nine men reported they belonged to an agricultural group. In the PROFIT+ area, only two of nine women and four of nine men reported belonging to such a group.

Of respondents who were not in groups, lack of ability to pay for membership fees was cited as a primary reason. *"I have not participated in groups because groups require a fee so if you are poor or don't have, you can't join."* (PROFIT+ area female). Other reasons for not joining groups included the perception that leaders of groups keep inputs for themselves and/or are biased in how they select members (preference for relatives). *"Those that are in leadership positions just misuse your monies and they don't even give you fertilizer. They share the fertilizer among themselves."* (PROFIT+ area female). Others reported that groups become full and there is no room for new members. *"When those of us who do not have any relative in a top position go there, we are told the list is full."* (PROFIT+ area female).

Those who were in agricultural groups described the activities they carried out, which included conservation farming, poultry raising, goat rearing, obtaining seed and fertilizer at subsidized prices, and obtaining loans.

Men whose wives were not in groups were asked if they would support or oppose their wife joining a group. All men, regardless of project area, said they would support their wives joining groups if membership benefitted the household, for example, by teaching new farming methods or providing inputs. When asked if there were circumstances where they would not support their wife joining, one husband stated, "*What can make me not allow her to join some groups is if she comes home late and fails to do household chores*." (PROFIT+ area male). Two other husbands (BLA area) said they would not support their wives joining a group if they saw no benefit. *"All we want is to learn ways and means of improving our agriculture."*

7. Food Security, Dietary Diversity, and Alcohol

7.1 Food Security

January, February, and March 2014 were the months in the previous year[39] during which the greatest percentage of respondents reported that their household did not have enough food to meet its needs (see Table 7.1-1). A slightly higher proportion of males reported that their household did not have enough food during these months than female respondents in the same domain. February was the most frequently reported month, with 32.0 percent of females and 35.8 percent of males in the project domain reporting inadequate food provisions. In the comparison domain, 29.0 percent of females and 34.6 percent of males reported the same.

Table 7.1-1. Months of inadequate household food provisions by domain

	Project		Comparison	
	Female	**Male**	**Female**	**Male**
Months in Which the Household Did Not Have Enough Food to Meet its Family's Needs				
Aug-13	0.9	0.7	0.6	1.0
Sep-13	1.2	0.6	0.9	0.7
Oct-13	2.1	1.0	2.0	2.4
Nov-13	2.7	3.0	2.7	2.9
Dec-13	5.1	6.0	6.3	7.8
Jan-14	15.4	19.0	15.0	17.7
Feb-14	32.0	35.8	29.0	34.6
Mar-14	12.9	15.5	10.1	11.6
Apr-14	2.0	2.9	1.6	1.3
May-14	0.8	0.7	0.6	0.3
Jun-14	0.6	0.5	0.5	0.3
Jul-14	0.8	0.3	0.7	0.4
Percent of Households without Enough Food to Meet Family's Needs Any Month Between August 2013 and July 2014				
	38.9	43.3	35.4	40.0
n	**1,935**	**687**	**1,933**	**675**

DK/Refused ranges from 0.0 to 0.1 percent; Missing = 0.0 percent.

The household hunger scale[40] was used to calculate the prevalence of moderate or severe hunger in the last 30 days/4 weeks.[41] Females were more likely than males to report moderate or severe hunger in their household. Prevalence was also higher in the project domain where 7.5 percent of females and 2.9 percent of males reported moderate or severe hunger in their households, as compared to only 5.1 percent of females and 1.9 percent of males in the comparison domain (see Table 7.1-2).

[39] The previous year corresponds to the 12 months prior to data collection, i.e., August 2013 to July 2014.
[40] See http://www.fantaproject.org/monitoring-and-evaluation/household-hunger-scale-hhs.
[41] The last 30 days/4 weeks corresponds to a 30 day/4 week period between July 9 – October 1, 2014, as data collection occurred from August 9, 2014 – October 1, 2014.

Table 7.1-2. Prevalence of moderate or severe hunger in the household in the last 30 days/4 weeks by domain[a]

	Project		Comparison	
	Female	Male	Female	Male
	7.5	2.9	5.1	1.9
n	**1,935**	**687**	**1,933**	**675**

[a] Last 30 days/4 weeks corresponds to a 30 day/4 week period between July 9 – October 1, 2014 as data collection occurred from August 9, 2014 – October 1, 2014. Note that this time period (July 9 – October 1, 2014) does not fall during Zambia's hungry season.

DK/Refused ranges from 0.0 to 0.1 percent; Missing ranges from 0.1 to 0.8 percent.

7.2 Dietary Diversity

Table 7.2 presents the percentage of respondents that ate from various food groups in the previous day. Nearly all respondents reported eating grains, roots, or tubers in the previous day (98.6 percent of females and 99.1 percent of males in the project domain, and 98.6 percent of females and 99.7 percent of males in the comparison domain).

Vitamin A-rich dark green leafy vegetables were the next most frequently reported group by females; for males, other fruits and vegetables were more frequently reported. Whereas 62.5 percent and 64.8 percent of females in the project and comparison domains (respectively) reported eating vitamin A-rich dark green leafy vegetables, only 53.2 percent and 47.9 percent of males reported the same, respectively. Other fruits and vegetables were reported by 64.3 percent and 63.6 percent of males in the project and comparison domains (respectively), but only by 52.4 percent and 55.5 percent of females in the same domains, respectively.

Legumes and nuts were the fourth most frequently reported group for females; for males, flesh foods and other small animal proteins were more frequently reported. Whereas 40.5 percent and 40.7 percent of females in the project and comparison domains (respectively) reported eating legumes and nuts, only 31.8 percent and 31.4 percent of males reported the same, respectively. Flesh foods and other small animal proteins were reported by 41.3 percent and 48.1 percent of males in the project and comparison domains (respectively), but only by 35.2 percent and 35.7 percent of females in the same domains, respectively.

Table 7.2. Dietary diversity by domain

	Project		Comparison	
	Female	Male	Female	Male
Percent of Respondents Who Ate from Food Group in the Previous Day				
Grains, roots, and tubers	98.6	99.1	98.6	99.7
Legumes and nuts	40.5	31.8	40.7	31.4
Dairy products	11.8	9.9	6.9	8.0
Organ meat	2.9	2.4	2.3	2.1
Eggs	9.4	9.5	7.9	11.8
Flesh foods and other small animal proteins	35.2	41.3	35.7	48.1
Vitamin A-rich dark green leafy vegetables	62.6	53.2	64.7	47.9
Other Vitamin A-rich vegetables and fruits	22.2	22.8	21.1	24.2
Other fruits and vegetables	52.4	64.3	55.5	63.6
n	**1,935**	**687**	**1,933**	**675**

DK/Refused ranges from 0.0 to 0.2 percent; Missing = 0.0 percent.

7.3 Alcohol Consumption

As shown in Table 7.3, the proportion of female respondents (95.0 percent project and 93.3 percent comparison) who reported never getting drunk was much higher than the proportion of males (60.8 percent project and 58.0 percent comparison) who reported never getting drunk. In addition, the proportion of females who reported their partner never got drunk (56.9 percent project and 50.5 percent comparison) was lower than the proportion of males in the same domain who reported they themselves never got drunk. Average weekly spending on alcohol was higher for males than females in their same domain, and higher overall in the comparison domain.

Table 7.3. Alcohol consumption by domain

	Project		Comparison	
	Female	Male	Female	Male
Respondent's Frequency of Drinking Alcohol in the Past 12 Months				
Every day	0.7	1.6	0.3	2.3
3 to 6 times per week	0.8	5.5	0.8	8.7
1 to 2 times per week	1.6	18.8	1.9	20.1
<1 a week, and >1 a month	2.1	9.2	3.7	8.8
<1 a month	1.3	6.2	1.2	3.2
Never	93.2	58.4	91.9	57.0
Total	100.0	100.0	100.0	100.0
Respondent's Frequency of Getting Drunk				
Often	0.8	7.1	0.5	7.0
Sometimes	3.8	31.8	5.8	34.9
Never	95.0	60.8	93.3	58.0
Total	100.0	100.0	100.0	100.0
Respondent's Average Weekly Expenditure on Alcoholic Beverages				
Kwacha[a]	4.3	6.0	7.3	8.1
N to calculate the average	1,820	686	1,817	675
Husband's/Partner's Frequency of Getting Drunk (Female Respondents Only)				
Often	16.9	N/A	21.9	N/A
Sometimes	26.0	N/A	27.2	N/A
Never	56.9	N/A	50.5	N/A
Total	100.0	N/A	100.0	N/A
n	**1,935**	**687**	**1,933**	**675**

[a] 6 Kwacha = approximately $1.

DK/Refused ranges from 0.0 to 0.3 percent; Missing ranges from 0.0 to 0.2 percent.

8. Exposure to Information/Training

8.1 Access to Agricultural Extension Workers (AEWs) and Lead Farmers

Tables 8.1-1 and 8.1-2 report findings on access to AEWs and lead farmers. A slightly higher proportion of male and female respondents in the project domain met with an AEW in the past 12 months as compared to respondents of the same sex in the comparison domain. In addition, male respondents in both domains were more likely to report meeting with an AEW than female respondents in their same domain. In the project domain, 27.5 percent of females and 37.5 percent of males reported meeting with an AEW, as did 24.5 percent of females and 34.6 percent of males in the comparison domain.

Among those respondents that met with an AEW in the past 12 months, most met one or two times. A higher proportion of respondents in the comparison domain (34.7 percent of females and 38.3 percent of males) reported having met with an AEW three or more times in the last 12 months than those in the project domain (26.6 percent of females and 31.6 percent of males).

Table 8.1-1. Access to AEWs by domain

	Project		Comparison	
	Female	Male	Female	Male
Percent of Respondents Who Met with an AEW in the Past 12 Months				
Yes	27.5	37.5	24.5	34.6
If Met, Number of Times Met with an AEW in the Past 12 Months				
Respondent is AEW	0.2	0.0	0.2	0.4
1	43.3	35.0	33.4	30.9
2	29.3	33.4	31.1	30.4
3	14.5	13.6	20.2	17.7
4+	12.1	18.0	14.5	20.6
Total	100.0	100.0	100.0	100.0
If Met, Sex of AEW from Last Meeting				
Respondent is AEW	0.2	0.0	0.2	0.4
Male	67.3	79.6	74.3	82.7
Female	15.7	12.3	14.5	9.3
Both male and female	16.8	8.1	10.8	7.7
Total	100.0	100.0	100.0	100.0
n	**1,935**	**687**	**1,933**	**675**

DK/Refused ranges from 0.0 to 0.6 percent; Missing ranges from 0.0 to 0.1 percent.

Table 8.1-2. Access to lead farmers by domain

	Project		Comparison	
	Female	Male	Female	Male
Percent of Respondents Who Met with a Lead Farmer in the Past 12 Months[a]				
PROFIT+ lead farmer	3.1	4.4	0.4	0.3
BLA/COMACO lead farmer	5.9	8.2	1.9	2.7
Other lead farmer	12.7	20.8	14.2	17.8
Any lead farmer	20.6	30.2	16.3	20.6
If Met, Number of Times Met with a Lead Farmer in the Past 12 Months				
Respondent is lead farmer	1.7	2.6	4.8	7.8
1	38.5	34.2	29.8	31.3
2	28.6	33.8	28.9	29.0
3	14.9	17.5	15.8	14.4
4+	15.5	11.4	20.2	16.8
Total	100.0	100.0	100.0	100.0
If Met, Sex of Lead Farmer from Last Meeting				
Respondent is lead farmer	1.7	2.6	4.8	7.8
Male	66.5	78.2	57.9	55.4
Female	14.7	9.6	24.2	17.1
Both male and female	16.4	9.7	12.9	19.6
Total	100.0	100.0	100.0	100.0
n	**1,935**	**687**	**1,933**	**675**

[a] Percent of respondents that reported meeting with one or more types of lead farmers.

DK/Refused ranges from 0.0 to 0.7 percent; Missing = 0.0 percent.

Report of meeting with a female AEW was higher in the project domain than the comparison domain among respondents of the same sex. In addition, female respondents were more likely than male respondents in their same domain to report that at least one of the last AEWs they met with was female. In the project domain, 32.5 percent of females and 20.4 percent of males reported that at least one of the last AEWs they met with was female. In the comparison domain, 25.3 percent of females and 17.0 percent of males reported the same.

A higher proportion of male and female respondents in the project domain met with a lead farmer in the past 12 months as compared to respondents of the same sex in the comparison domain. In addition, male respondents in both domains were more likely to report meeting with a lead farmer than female respondents in their same domain. In the project domain, 20.6 percent of females and 30.2 percent of males reported meeting with a lead farmer, as did 16.3 percent of females and 20.6 percent of males in the comparison domain.

Respondents in the project domain were more likely to report meeting with a lead farmer from COMACO or PROFIT+ than those in the comparison domain. In the project domain, 5.9 percent of females and 8.2 percent of males reported meeting with a COMACO lead

farmer, and 3.1 percent of females and 4.4 percent of males reported meeting with a PROFIT+ lead farmer.[42]

Of those respondents who met with a lead farmer in the past 12 months, most met one or two times. A slightly to somewhat higher proportion of respondents in the comparison domain (36.0 percent of females and 31.2 percent of males) reported having met with a lead farmer three or more times in the last 12 months than those in the project domain (30.4 percent of females and 28.9 percent of males).

Report of meeting with a female lead farmer was higher in the comparison domain than the project domain. In addition, females in the project domain were more likely than males to report that at least one of the lead farmer(s) they met with was female, while there was little variation by sex of respondent in the comparison domain. In the project domain, 31.1 percent of females and 19.3 percent of males reported that at least one of the lead farmers they met with was female. In the comparison domain, 37.3 percent of females and 36.7 percent of males reported the same.

8.2 Information/Training Received

Table 8.2. Information/training ever received by domain

	Project		Comparison	
	Female	Male	Female	Male
Percent of Respondents Who Received Information/Training on				
Conservation farming	50.7	67.6	48.8	64.3
Problems associated with aflatoxin in groundnuts	19.5	20.0	13.3	11.6
Improved seed for groundnuts	15.3	22.1	10.8	15.0
Becoming a certified groundnut seed grower	8.6	12.7	4.8	5.5
Labor-saving methods for harvesting groundnuts	7.6	10.6	6.3	4.9
Processing options for groundnuts	16.9	29.3	13.5	25.5
Marketing of agricultural crops	16.1	19.5	16.8	15.0
Women's rights/roles in agriculture	19.9	25.5	16.8	17.2
Women's ability/right to own land	16.3	24.4	9.7	14.1
Women's rights/roles in the family	21.5	30.8	22.0	21.6
Budgeting as a household	18.0	30.7	18.8	23.9
Sharing profits from crops jointly with spouse	14.8	25.2	13.9	19.8
Financial management/and or business planning	8.3	14.1	8.2	8.9
Functional literacy	10.9	16.1	12.2	13.0
Making decisions with spouse on family planning	45.1	56.2	45.5	50.0
Nutrition	49.3	53.1	52.0	50.1
n	**1,935**	**687**	**1,933**	**675**

DK/Refused ranges from 0.0 to 1.7 percent; Missing ranges from 0.0 to 0.3 percent.

[42] As PROFIT+ works through local cooperatives, it possible that respondents could have met with a PROFIT+ lead farmer without being aware they were associated with PROFIT+.

Table 8.2 presents the percentage of respondents that ever received information or training on topics related to agriculture, gender, budgeting, family planning, and nutrition.

The most commonly reported types of information/training ever received in both domains were conservation farming, making decisions with one's spouse on family planning, and nutrition. Similar or slightly higher proportions of female and male respondents in the project domain reported receiving all types of information/training compared to respondents of their same sex in the comparison domain.

In the project domain, a higher proportion of males than females reported receiving each type of information/training. Differences were most pronounced for information/training on conservation farming, processing options for groundnuts, budgeting as a household, sharing profits from crops jointly with a spouse, and nutrition. In the comparison domain, while a higher proportion of males than females reported receiving information/training for most topics, there were some exceptions where the proportions were slightly higher for females. Differences that were most notable (higher proportion of males compared to females) included conservation farming and processing options for groundnuts.

8.3 Sources of Information/Training

The two most common sources of information/training were meetings and informal conversation (see Table 8.3). Meetings and informal conversation were reported by 57.1 percent and 34.9 percent of females (respectively) and 68.8 percent and 35.8 percent of males (respectively) in the project domain, and by 60.6 percent and 33.6 percent of females (respectively) and 61.7 percent and 33.8 percent of males (respectively) in the comparison domain. For females in both domains, the third and fourth most common sources of information/training were visits and radio; whereas for males, the order was reversed.

In the project domain, 7.3 percent of females and 16.6 percent of males reported BLA/COMACO as a source of information/training, as compared to only 3.9 percent of females and 8.3 percent of males in the comparison domain. While 3.1 percent of females and 4.8 percent of males in the project domain reported PROFIT+ as sources of information/training, less than 1.0 percent of respondents in the comparison domain reported the same.

Table 8.3. Source of information/training by domain

	Project domain		Comparison domain	
	Female	Male	Female	Male
Percent of Respondents[a] Who Received Information/Training from				
PROFIT+	3.1	4.8	0.4	0.6
COMACO/BLA	7.3	16.6	3.9	8.3
Informal conversation	34.9	35.8	33.6	33.8
Radio program	19.6	36.0	12.2	25.5
Pamphlet/newspaper	0.3	2.3	0.3	0.8
Workshop	2.0	5.6	1.8	3.8
Field day	3.5	5.4	2.1	1.8
Demonstration plot	6.8	7.9	5.1	5.2
Visit	23.7	13.7	23.7	16.4
Meeting	57.1	68.8	60.6	61.7
Training with Better Life Book	0.8	1.4	0.3	0.4
Other training	8.3	2.8	9.2	4.1
Seed Fair	0.1	0.0	0.6	0.0
Other	1.5	2.5	1.3	1.7
n	**1,935**	**687**	**1,933**	**675**

[a] Total percentage does not equal 100 percent as respondents were allowed to name up to two sources of information/training.

8.4 Main Source of Agricultural Commodity Prices

Nearly two-thirds of respondents reported that they accessed information about agricultural commodity prices (see Table 8.4). The most common source was radio, as reported by 64.0 percent of females and 65.1 percent of males in the project domain and 52.2 percent of females and 64.5 percent of males in the comparison domain. Farmers/neighbors were the second most commonly reported source for females (14.0 percent project and 17.8 percent comparison), while out-growers were the second most commonly reported source for males (10.9 percent project and 11.9 percent comparison).

Table 8.4. Main source of information on agricultural commodity prices by domain

	Project		Comparison	
	Female	Male	Female	Male
Percent of Respondents Who Access Information about Agricultural Commodity Prices				
	66.0	62.1	65.5	63.6
n	**1,935**	**687**	**1,933**	**675**
Of Respondents Who Accessed Information, Main Source of Agricultural Commodity Price				
PROFIT+	0.2	0.0	0.0	0.5
COMACO/BLA	1.0	0.4	0.0	0.6
Conservation Farming Unit	0.2	1.1	0.2	0.0
Eastern Province Farmer's Cooperative	0.7	0.0	1.1	0.0
Extension agent	2.1	4.4	2.3	2.0
Farmer/neighbor	14.0	8.7	17.8	8.7
Farmer's group/cooperative	3.1	3.5	7.8	2.3
Field day	0.1	0.0	0.0	0.1
Headman	1.4	0.5	1.0	1.0
Market place	5.2	1.8	5.6	3.8
NGO/faith-based organization/church	0.2	0.3	0.0	0.0
Pamphlet/newspaper	0.1	0.2	0.1	0.0
Out-growers	4.3	10.9	5.8	11.9
Radio program	64.0	65.1	52.2	64.5
Shops	0.2	0.0	0.5	0.0
Trader/marketer	1.7	1.2	3.5	1.9
Television	0.5	0.2	0.3	0.4
Workshop	0.1	0.5	0.0	0.0
ZNFU: SMS	0.1	0.3	0.1	0.0
ZNFU: Other sources	0.4	0.0	0.4	0.5
Other	0.5	0.6	1.1	2.0
Total	100.0	100.0	100.0	100.0
n	**1,300**	**444**	**1,295**	**457**

DK/Refused ranges from 0.1 to 0.5 percent; Missing = 0.0 percent.

8.5 Exposure to PROFIT+ and Better Life Alliance: Qualitative Findings

Focus group discussion participants and in depth interview respondents were asked about their knowledge of PROFIT+ and BLA/COMACO. The synthesized findings are presented below.

PROFIT+

Of respondents in the PROFIT+ area, only four of the nine female IDI respondents had heard of PROFIT+, and only participants in one of the three female FGDs had heard of PROFIT+. Those with knowledge of PROFIT+ reported that they teach conservation farming, have demonstration plots, give out seed and fertilizer, and sensitize farmers about aflatoxin.

Six of the nine male IDI respondents in the PROFIT+ area had heard of the project, as had participants in two of the three male FGDs. Those with knowledge of PROFIT+ explained that they teach conservation farming, give out seed and fertilizer, have demonstration plots, teach how to prevent aflatoxin, give out irrigation equipment, and had helped one community with the provision of a borehole. In addition, some male respondents reported concerns about PROFIT+, which included favoritism in how members are selected and how inputs are distributed by the local cooperative, and failure to deliver promised inputs.

BLA/COMACO

Eight of nine female IDI respondents in the BLA area had heard of BLA/COMACO, as had participants in all three female FGDs. Female respondents reported that BLA/COMACO teaches conservation farming, gives out seed and fertilizer, teaches how to make stoves, promotes beekeeping, and has brought the market closer. Some female respondents reported concerns about BLA/COMACO, which included favoritism in how beneficiaries are selected; late or no delivery of promised seed; delivery of expired seed that does not germinate; and failure to buy crops (only recovering seed).

All male IDI respondents in the BLA area reported they had heard of BLA/COMACO, as had participants in all three male FGDs. Male respondents reported that BLA/COMACO teaches conservation farming, gives out fertilizer and seed, recovers seed or buy crops, teaches beekeeping and buys honey, and teaches people how to make simple stoves. Male respondents also expressed concerns about BLA/COMACO, including not understanding the criteria for beneficiary selection; late or no delivery of promised inputs; only recovering seed and not buying crops; purchasing crops at a low price; and not visiting famers frequently enough.

9. Gender Norms, Gender-Based Violence, and Transactional Sex

9.1 Gender Norms and Attitudes

Respondents were presented with nine statements about norms and attitudes towards gender and asked if they agreed or disagreed with each statement. Table 9.1-1 presents the findings.

Table 9.1-1. Gender norms and attitudes by domain

	Project		Comparison	
	Female	Male	Female	Male
Percent of Respondents Who Agree				
A good wife obeys her husband even if she disagrees	62.5	50.4	64.6	57.2
It is important for a man to demonstrate to his wife/partner that he is the boss	52.9	54.4	61.3	51.4
A woman's most important role is to take care of her home and cook for her family	89.6	78.5	90.0	77.4
Taking care of the children is the mother's responsibility	80.7	50.2	78.4	35.1
A man should have the final word about decisions in the home	68.2	51.5	70.1	52.4
A married woman should be able to own land	68.8	36.3	72.1	31.5
The husband and wife should decide together how to spend money from crop harvests	97.4	97.6	96.7	98.3
Women should be able to travel alone to markets to sell crops	70.5	55.0	71.1	52.4
A married woman should be able to attend agricultural training	95.1	92.9	91.5	93.2
n	**1,935**	**687**	**1,933**	**675**

DK/Refused ranges from 0.7 to 1.7 percent; Missing ranges from 0.0 to 0.2 percent.

For two statements there was little variation across domains or by sex of respondent within the same domain. Over 96.0 percent of respondents of both sexes in both domains agreed with the statement, 'The husband and wife should decide together how to spend money from crop harvests.' Over 91.0 percent also agreed with the statement, 'A married woman should be able to attend agricultural training.'

For four statements, there was little variation across domains; however, within the same domain, the proportion of females who agreed with the statement was higher than the proportion of males who agreed. While over 70.0 percent of female respondents agreed with the statements, 'Women should be able to travel alone to markets to sell crops,' and 'A man should have the final word about decisions at home,' only a little over half of male respondents similarly agreed. Approximately 70.0 percent of female respondents also agreed with the statement, 'A married woman should be able to own land on her own,' while only about a third of male respondents similarly agreed. While 90.0 percent of female respondents agreed that, 'A

woman's most important role is to take care of her home and cook for her family,' less than 80.0 percent of male respondents reported agreement.

Variation was seen across domains for females on just one statement. In the project domain, 52.9 percent of females agreed with the statement, 'It is important for a man to demonstrate to his wife/partner that he is the boss;' in the comparison domain, 61.3 percent of females agreed.

Variation was seen across domains for males for two statements. While 57.2 percent of men in the comparison domain agreed with the statement, 'A good wife obeys her husband even if she disagrees,' only 50.4 percent of males in the project domain agreed. With regard to the statement, 'Taking care of the children is the mother's responsibility,' 50.2 percent of men in the project domain agreed, while only 35.1 percent of males it in the comparison domain agreed.

There was little variation across domains in acceptance of wife beating (see Table 9.1-2). In each of the six hypothetical scenarios described by the questionnaire (e.g., 'Wife goes out without telling her husband'), approximately 26.0 percent to 40.0 percent of female respondents agreed that the husband was justified in hitting or beating his wife.

Table 9.1-2. Female respondents' attitudes towards wife beating by domain

	Project	Comparison
Percent of Respondents Who Agree Husband is Justified in Hitting or Beating His Wife If She		
Goes out without telling him	32.2	35.8
Neglects the children	39.7	39.9
Argues with him	32.4	35.6
Refuses to have sex with him	29.5	34.1
Burns the food	25.8	28.2
Refuses to go to the field	34.7	36.9
n	**1,935**	**1,933**

DK/Refused ranges from 0.1 to 0.4 percent; Missing ranges from 0.0 to 0.1 percent.

9.2 Marital Control Exercised by Female Respondents' Current Partner

Female respondents' report of marital control exercised by their current partner did not vary considerably by domain. Compared to other statements on marital control, more women reported their current partner often or sometimes 'is jealous or angry if she talks to other men,' and 'insists on knowing where she is at all times.' As shown in Table 9.2, 47.9 percent of females in the project domain reported that their partners were often or sometimes jealous or angry when she talks with other men, as did 49.8 percent of females in the comparison domain.

Table 9.2. Marital control exercised by female respondents' current partner by domain[a]

	Project		Comparison	
	Often	Sometimes	Often	Sometimes
Percent of Women Whose Current Partner				
Is jealous or angry if she talks to other men	22.5	25.4	22.8	27.0
Frequently accuses her of being unfaithful	9.9	17.2	8.2	20.7
Does not permit her to meet her girlfriends	6.0	13.6	5.5	14.2
Tries to limit her contact with her family	5.5	7.5	3.7	9.1
Insists on knowing where she is at all times	26.9	22.4	27.4	25.7
Does not trust her with any money	11.8	8.6	7.3	9.3
n	**1,828**		**1,818**	

[a] Only includes female respondents with a current partner/spouse.

DK/Refused ranges from 0.0 to 0.5 percent; Missing = 0.0 percent.

Marital Control: Qualitative Findings

Female in depth interview respondents were asked if their husband ever tried to control them. Five of the nine respondents in the PROFIT+ project area and three of the nine respondents in the BLA project area reported that their husband had.

In the PROFIT+ project area, respondents reported that their husbands tried to control them by not allowing them to see certain people, requiring their permission to visit certain people, or by accusing them of being unfaithful when out visiting friends. "*If I say I want to go to my family's village, I have to ask, and when he allows me to go, he gives me the number of days I am allowed to be there.*" (PROFIT+ area female). In the BLA project area, respondents reported their husbands tried to control them by limiting contact with friends.

9.3 Violence Perpetrated by Current Partner Against Female Respondents

As shown in Table 9.3, reported levels of violence by their current partner/husband against female respondents in the last 12 months did not vary greatly by domain for most types of violence. In the project domain, 17.8 percent of female respondents reported one or more types of physical violence had been perpetrated against them in the last year; in the comparison domain, 14.6 percent of females reported the same. The most common form of physical violence reported in both domains was 'slapped her or twisted her arm.' In the project domain, the next most common forms of violence reported were 'pushed her, shook her, or threw something at her,' and 'punched her with his fist or something that could hurt her', both at approximately 7.0 percent. In the comparison domain, the second and third most common forms of violence reported were the same, with punching reported at 5.7 percent and pushing/shaking/throwing something at 5.3 percent.

Female respondents reported sexual violence more frequently than physical violence. Twenty-two percent of females in the project domain and 23.5 percent of females in the comparison domain reported any sexual violence in the last 12 months. The most frequently reported act of sexual violence was 'physically forced her to have sexual intercourse with him when she did not want to,' reported by 21.9 percent of females in the project domain and 22.2 percent in the comparison domain.

Approximately one-third of women in both domains reported having emotional violence perpetrated against them in the last 12 months. The specific types of emotional violence reported did not vary by domain. The most frequently reported was 'insulted her or made her feel bad about herself,' reported by 24.8 percent of females in the project domain and 23.1 percent in the comparison domain.

Female respondents' report of economic violence by their current partner was also similar across domains—17.2 percent in the project domain and 14.3 percent in the comparison domain in the last 12 months. The specific types of economic violence did not vary much by domain, with the exception of 'deprived her of accommodation/sent her away,' which was reported by 9.5 percent of female respondents in the project domain and 5.8 percent in the comparison domain.

Table 9.3. Violence perpetrated by current partner against female respondents in the past 12 months by domain[a]

In Past 12 Months, Percent of Women Whose Current Partner	Project	Comparison
Physical Violence		
Pushed her, shook her, or threw something at her	7.1	5.3
Slapped her or twisted her arm	14.5	12.5
Punched her with his fist or something that could hurt her	6.7	5.7
Kicked or dragged her	5.2	4.2
Tried to strangle or burn her	1.5	1.3
Threatened her with knife, gun, or other weapon	1.2	1.1
Attacked her with knife, gun, or other weapon	0.3	0.4
Any physical violence[b]	17.8	14.6
Sexual Violence		
Physically forced her to have sexual intercourse with him when she did not want to	21.9	22.2
Forced her to perform other sexual acts she did not want to	4.1	5.0
Any sexual violence[b]	22.4	23.5
Emotional Violence		
Insulted her or made her feel bad about herself	24.8	23.1
Said or did something to humiliate her in front of others	12.8	11.2
Did things to scare or intimidate her on purpose	14.2	12.4
Threatened her or someone close to her	4.3	3.7
Any emotional violence[b]	34.5	31.2
Economic Violence		
Deprived her of food	2.1	2.2
Deprived her of medical care	2.0	1.6
Deprived her of clothing	4.3	3.5
Deprived her of accommodation/sent her away	9.5	5.8
Kept her from working of having employment	1.9	1.3
Deprived her of school fees for the children	2.0	2.3
Deprived her of money	8.9	8.3
Any economic violence[b]	17.2	14.3
n	**1,828**	**1,818**

[a] Only includes female respondents with a current partner/spouse.

[b] Percent of respondents that reported one or more of this type of violence.

DF/Refused ranges from 0.0 to 0.5 percent; Missing ranges from 0.2 to 1.5 percent.

Violence Perpetrated by Current Partner: Qualitative Findings

Female IDI respondents were asked if their husband had ever hurt them physically. A higher number of respondents in the PROFIT+ project area reported experiencing intimate partner violence as compared to those in the BLA project area. Physical violence was associated with arguments over money, co-wives, household chores, and alcohol, as well as accusations of infidelity. Seven of the nine PROFIT+ project area respondents reported that they had been hit or beaten by their husbands. Five of these reported it had only happened one time.

Respondents were asked to describe the last instance. One respondent (who reported being beaten throughout her marriage) stated that her husband strangled her when she questioned

how he was spending funds from the sale of their crops after he married a second wife. She went to victim support and he was subsequently arrested; though still married, they have not lived together for two years. Two other respondents reported being hit or slapped for refusing to prepare bath water and not having dinner ready, respectively. In the latter case, the husband was reportedly drunk. Another respondent reported that when her husband took a second wife, she beat the wife. The husband subsequently beat her. One respondent reported that she made wine to sell but her husband drank most of it and then added water. They argued and the fight became physical. One respondent reported that her husband pushed her when she accused him of infidelity, while another stated that her husband slapped her because he had 'heard stories' about her.

In the BLA project area, three of nine respondents reported being hit or beaten by their husbands. Two reported that the violence had only happened once. In describing the last instance, one respondent reported that her husband denied being paid for a crop, but she found the money and spent it on the household. When he discovered she had spent the money, he beat her. Another respondent reported that when her husband took a second wife, she told him he was leaving, and he slapped her. In the third instance, the respondent reported that when her husband came home late, she hit him, and he subsequently beat her.

9.4 Violence Perpetrated by Female Respondents Against Current Partner

Female respondents reported lower levels of perpetrating violence themselves against their current partner/husband in the last 12 months as compared to the above (see Table 9.4). Only 4.1 percent of females in the project domain and 3.3 percent in the comparison domain reported their own perpetration of physical violence against their current partner. 'Slapped him or twisted his arm' was the most often noted specific act perpetrated, with 2.4 percent of females in both domains reporting perpetration of this act against their current partner/husband.

Only 3.4 percent of females in the project domain and 4.1 percent in the comparison domain reported having perpetrated any sexual violence against their current partner/husband in the last 12 months. Nearly all sexual violence acts perpetrated by female respondents were 'physically forced him to have sexual intercourse with her when he did not want to.'

Approximately 13.0 percent of female respondents in both domains reported perpetrating one or more types of emotional violence against their current partner/husband in the last 12 months. Female respondents most commonly reported that they had 'insulted him or made him feel bad about himself' (6.7 percent in project domain and 7.7 percent in comparison

domain) and 'did things to scare or intimidate him on purpose' (5.6 percent in the project domain and 6.1 percent in the comparison domain).

Four percent of female respondents in the project domain and 3.2 percent in the comparison domain reported that they had perpetrated one or more acts of economic violence in the last 12 months. The most commonly reported act perpetrated, although still infrequent, was 'deprived him of money,' at 1.7 percent in both domains.

Table 9.4. Violence perpetrated by female respondents against current partner in the past 12 months by domain[a]

In Past 12 Months, Percent of Women Who	Project	Comparison
Physical Violence		
Pushed her partner, shook him, or threw something at him	1.7	1.2
Slapped him or twisted him arm	2.4	2.4
Punched him with her fist or with something that could hurt him	0.8	0.8
Kicked or dragged him	0.1	0.1
Tried to strangle or burn him	0.1	0.2
Threatened him with knife, gun, or other weapon	0.0	0.2
Attacked him with knife, gun, or other weapon	0.0	0.3
Any physical violence[b]	4.1	3.3
Sexual Violence		
Physically forced him to have sexual intercourse with her when he did not want to	3.1	4.0
Forced him to perform other sexual acts he did not want to	0.9	0.4
Any sexual violence[b]	3.4	4.1
Emotional Violence		
Insulted him or made him feel bad about herself	6.7	7.7
Said or did something to humiliate him in front of others	2.5	1.8
Did things to scare or intimidate him on purpose	5.6	6.1
Threatened him or someone close to him	0.8	0.8
Any emotional violence[b]	13.3	12.7
Economic Violence		
Deprived him of food	1.5	1.2
Deprived him of medical care	0.0	0.1
Deprived him of clothing	0.1	0.0
Deprived him of accommodation/sent him away	1.2	0.6
Kept him from working of having employment	0.1	0.0
Deprived him of school fees for the children	0.0	0.1
Deprived him of money	1.7	1.7
Any economic violence[b]	3.9	3.2
n	**1,828**	**1,818**

[a] Only includes female respondents with a current partner/spouse.

[b] Percent of respondents that reported one or more of this type of violence.

DK/Refused ranges from 0.0 to 0.1 percent; Missing ranges from 0.1 to 2.2 percent.

Violence Perpetrated by Female Respondents: Qualitative Findings

Female IDI respondents were asked if they had ever hurt their husband physically. Four of nine respondents in the PROFIT+ area reported that they had hit their husbands. One reported that she hit her husband because he misused money from the sale of a crop. Two other instances involved suspected infidelity—one respondent reported slapping her husband because she thought he had been unfaithful, while another stated that when her husband came home drunk and accused her of infidelity, she hit him with a stick. The fourth respondent described an argument after her husband drank wine she planned to sell. The fight became physical with the couple hitting each other. Only one respondent in the BLA project area reported ever physically hurting her husband, saying that he came home late and she hit him.

9.5 Violence Perpetrated by Someone Other than Current Partner Against Female Respondents

Report of violence perpetrated by someone other than the current partner/husband against female respondents in the last 12 months was extremely rare for physical and sexual violence (see Table 9.5). Only 1.0 percent of female respondents in the project domain and 1.3 percent in the comparison domain reported one or more physical acts against them, and only 1.1 percent (project) and 0.8 percent (comparison) reported sexual violence acts against them by someone other than their current partner/husband.

Report of emotional violence perpetrated against female respondents by someone other than their current partner/husband in the last 12 months was higher than report of sexual and physical violence—22.9 percent in the project domain and 19.4 percent in the comparison domain. The most frequently reported act of emotional violence against female respondents by someone other than current partner was, 'insulted her or made her feel bad about herself,' reported by 18.4 percent of females in the project domain and 16.7 percent in the comparison domain.

Table 9.5. Violence perpetrated by someone other than current partner against female respondents in the past 12 month by domain

In Past 12 Months, Percent of Women Who Others	Project	Comparison
Physical Violence		
Pushed shook her, or threw something at her	0.2	0.5
Slapped her or twisted her arm	0.6	0.7
Punched her with his fist or with something that could hurt her	0.4	0.3
Kicked or dragged her	0.1	0.3
Tried to strangle or burn her	0.1	0.0
Threatened her with knife, gun, or other weapon	0.0	0.1
Attacked her with knife, gun, or other weapon	0.1	0.1
Any physical violence[a]	1.0	1.3
Sexual Violence		
Physically forced her to have sexual intercourse with him when she did not want to	1.0	0.8
Forced her to perform other sexual acts she did not want to	0.1	0.1
Any sexual violence[a]	1.1	0.8
Emotional Violence		
Insulted her or made her feel bad about herself	18.4	16.7
Said or done something to humiliate her in front of others	8.2	6.9
Done things to scare or intimidate her on purpose	3.4	2.1
Threatened her or someone close to her	1.0	0.9
Any emotional violence[a]	22.9	19.4
n	**1,935**	**1,933**

[a] Percent of respondents that reported one or more of this type of violence.

DK/Refused ranges from 0.1 to 0.6 percent; Missing ranges from 0.1 to 1.4 percent.

Violence Perpetrated by Others: Qualitative Findings

Female IDI respondents were asked if they had ever personally suffered physical violence or had heard of other women experiencing violence on the way to/from or at markets or agricultural trading centers.

In both project areas, female respondents reported that women transport crops (generally maize) to markets or agricultural trading centers using a variety of methods depending on distance to market. When it is close, they walk (carrying a bag on their head), bicycle, or use oxcarts. When it is far, they use hired vehicles or taxis. Only one respondent (PROFIT+ area) reported ever hearing of physical violence against women when traveling to/from markets, stating that friends warned her that, *"There are people who attack on the way…so that they can get whatever the person has for themselves."* No respondents in either project area reported that they had personally experienced violence traveling to/from markets.

Once at the market, a woman might sell her crop the same day; however, when there is a long queue (as occurs with maize), a woman might stay a week or even longer. In this case, the woman generally sleeps outside next to her crop. As one respondent explained, *"They sleep right where they put their bags of maize . . . they carry their food from the village and carry pots and*

pans and cook right at the markets." (BLA area female respondent). Only one respondent (PROFIT+ area) had heard of women experiencing violence at a market place, saying she had had been told that some women commit adultery at the market and are beaten by the wives of the men they have sex with. No respondents in either project area had personally suffered physical violence at a market place or agricultural trading center.

9.6 Transactional Sex

Approximately 80.0 percent or more of respondents in both domains reported that they thought a woman having transactional sex was wrong morally (see Table 9.6-1). There was little variation by sex of respondent or across domain.

Table 9.6-1. Attitudes toward transactional sex by domain

	Project		Comparison	
	Female	**Male**	**Female**	**Male**
Percent of Respondents Who Think a Woman Having Transactional Sex				
Is wrong morally	83.5	81.3	82.1	79.8
Violates her rights	8.7	10.7	8.2	11.2
Is her own choice	3.5	3.7	4.7	5.5
Is wrong but there is nothing that can be done about it	2.6	2.8	3.4	1.8
Is nothing wrong	1.0	1.3	1.0	1.6
Total	100	100	100	100
n	**1,935**	**687**	**1,933**	**675**

DK/Refused ranges from 0.0 to 0.6 percent; Missing ranges from 0.0 to 0.2 percent.

Less than one percent of female respondents reported engaging in any of the transactional sex scenarios presented in the survey. The most commonly reported scenario (reported by 0.8 percent of females in the project domain and 0.9 percent in the comparison domain) was transactional sex because she expected the man to 'give her cash or money to pay her bills' (see Table 9.6-2).

Table 9.6-2. Female respondents' experience of transactional sex in the last 12 months by domain

	Project	Comparison
Percent of Female Respondents Who Had Sex with a Man One or More Times in the Past 12 Months Who Was Not Her Main Partner Because She Expected Him to or Because He Did		
Provide her with transportation	0.5	0.4
Provide her with somewhere to stay	0.4	0.3
Provide her with food	0.4	0.5
Give her cash or money to pay her bills	0.8	0.9
Purchase an agricultural crop from her	0.2	0.1
Provide her anything else that she could not afford by herself	0.7	0.5
n	**1,935**	**1,933**

Men more commonly reported engaging in transactional sex in specific contexts, with a range from 0.0 to 9.2 percent. Similar to female respondents' report, the most commonly reported scenario among men was engaging in sex with a woman who was not his main partner because she expected him to or he did 'give her cash or money to pay her bills', reported by 8.0 percent of males in the project domain and 9.2 percent in the comparison domain (see Table 9.6-3). The next most commonly reported scenario (reported by 6.2 percent of males in the project domain and 6.3 percent in the comparison domain) was transactional sex because the woman who was not his main partner expected him to or because he did 'provide her anything else that she could not afford by herself.'

Table 9.6-3. Male respondents' experience of transactional sex in the last 12 months by domain

	Project	Comparison
Percent of Male Respondents Who Had Sex with a Woman One or More Times in the Past 12 Months Who Was Not His Main Partner Because She Expected Him to or Because He Did		
Provide her with transportation	2.5	3.0
Provide her with somewhere to stay	0.6	0.8
Provide her with food	3.4	2.6
Give her cash or money to pay her bills	8.0	9.2
Purchase an agricultural crop from her	0.0	0.1
Provide her anything else that she could not afford by herself	6.2	6.3
n	**687**	**675**

10. Conclusions

The Zambia GNVC impact evaluation seeks to test the hypothesis that the gender interventions implemented by PROFIT+ and BLA will assist in maintaining or increasing women's control over production, marketing/sales, and proceeds from groundnuts as groundnut commercialization increases.

The quantitative survey conducted in late 2014 as part of the Zambia GNVC impact evaluation established baseline indicators for background characteristics, primary and secondary outcomes, and exposure to project or similar interventions in both the project and comparison domains. Similarities and differences in these indicators and outcomes across domains are summarized below (see also Annex A). A separate section discusses differences in responses by male and female respondents within the same domain.

10.1 Summary of Findings and Differences Across Domains

Background Characteristics

For most household characteristics, there was little variation across domains. Over 95.0 percent of study households were headed by a male member and the mean household size was 6.1 members in both domains. While less than one-quarter of households in either domain had electricity and nearly all relied on firewood for cooking fuel, over 70.0 percent had private pit latrines and access to an improved water source.

Similarly, for most individual respondent characteristics, there was little variation across domains. The majority of individual respondents were under 40 years old and almost all were married or cohabitating. A somewhat higher proportion of respondents in the comparison domain were in a polygamous marriage/cohabitation. While females in the project domain had slightly higher educational attainment than those in the comparison domain, there was little variation in education across domains for males.

A notable difference between project and comparison domains was distance to key services. A lower proportion of households in the comparison domain reported they were within five kilometers of key services, suggesting that these households reside in somewhat more remote locations than those in the project domain. Another variation between domains was the mean total area of households' cropped/cultivated fields, which was 8.6 percent larger in the project than comparison domain, suggesting greater wealth in the project domain. In addition, the mean total area of households' groundnut fields was 35.5 percent higher in the project domain than the comparison domain.

Primary Outcomes

Table 10.1 summarizes the baseline values for all indicators associated with the primary outcomes of interest in the evaluation.

Table 10.1. Summary of primary outcomes by domain

Primary outcome	Project		Comparison	
	Female	Male	Female	Male
Women's Participation in Production				
Percentage of households' groundnut fields where women solely or jointly decided to groundnuts in the 2012/2013 season	55.8	43.9	61.3	42.4
Percentage of households' groundnut fields where women solely or jointly decided which groundnut seed variety to plant in the 2012/2013 season	66.3	55.1	71.9	56.6
Women's Participation in Groundnut Sales				
Percentage of households' groundnut fields where women solely or jointly decided to sell groundnuts from February 2013-April 2014	59.4	62.2	64.7	65.3
Percentage of households' groundnut fields where women solely or jointly sold groundnuts from February 2013-April 2014	55.8	48.1	61.9	50.2
Commercialization of Groundnuts				
Percentage of households that sold groundnuts from February 2013-April 2014	46.8	51.2	31.0	30.2
Mean Total Household Sales of Groundnuts				
Mean total household sales (kilograms) of shelled groundnuts from February 2013-April 2014	141.7 kg	176.7 kg	102.2 kg	129.8 kg
Mean total household sales (kilograms) of unshelled groundnuts from February 2013-April 2014	101.0 kg	124.1kg	92.2 kg	116.9 kg
Women's Control Over Proceeds from Groundnut Sales				
Percentage of respondents that reported women solely or jointly decided how to use proceeds from the household's largest sale of shelled groundnuts from February 2013-April 2014	64.7	71.3	64.5	65.6
Percentage of respondents that reported women solely or jointly decided how to use proceeds from the household's largest sale of unshelled groundnuts from February 2013-April 2014	65.7	66.7	69.1	65.2

Reports of both male and female respondents suggest that there is more commercialization of groundnuts in the project domain than in the comparison domain at baseline; around half of the respondents in the project domain reported their household sold groundnuts from February 2013 – April 2014, compared to just under a third of respondents in the comparison domain. Both male and female respondents also reported a greater volume of sales in the project domain than in the comparison domain.

Reports of female respondents suggest that women in the comparison domain are somewhat more likely to be involved in all aspects of decisionmaking related to groundnuts examined than are women in the project domain. Differences are modest, however, and around 55-72 percent of women in both domains report being involved in most of the decisions examined. Reports of male respondents do not show large or consistent differences in female involvement in groundnut-related decisionmaking between the project and comparison domains.

Secondary Outcomes

There was less variation across domains for the secondary outcomes of interest to the evaluation.

Access to Productive Capital and Household Decisionmaking

Ownership of most productive assets was reported by relatively similar proportions of respondents in both domains, with the exception of cell phones, which were more frequently reported by respondents in the project domain. Cash savings (not in a bank/group/association) and credit through friends and relatives were the most frequently reported financial asset and credit source (respectively) in both domains.

Female respondents in the project domain were somewhat more likely to report that their household made decisions related to non-farm business and family planning than women in the comparison domain. There were no other notable differences in decisions made by households reported by women, and female involvement in household decisionmaking varied little across domains for female respondents. Men in the project domain were more likely to report that their household made all decisions asked about than men in the comparison domain (except for decisions related to minor household expenditures, which nearly all households reported making), and were generally more likely than men in the comparison domain to report that women were involved in making these decisions.

Food Security, Dietary Diversity, and Alcohol Use

Over one-third of respondents in both domains reported their household did not have enough food to meet their family's needs for at least one month in the previous year. The most commonly reported months of food scarcity were January, February, and March. There was little variation across domains with regard to dietary diversity. Nearly all respondents reported eating grains, roots, or tubers in the previous day. Over half of respondents in both domains also reported eating Vitamin A-rich dark green leafy vegetables and other fruits and vegetables. Report of alcohol use also varied little by domain, though average weekly spending on alcohol was slightly higher in the comparison domain.

Gender Norms, Gender-Based Violence, and Transactional Sex

There were no notable differences across domains with regard to gender norms as reported by men and women. Among female respondents, the percentage who agreed with the various gender norm statements ranged from 52.9 percent in the project domain for the statement 'It is important for a man to demonstrate to his wife/partner that he is the boss' to 96.7 percent in the comparison domain for the statement 'The husband and wife should decide together how to spend money from crop harvests.' The percentage of male respondents who agreed with the gender norm statements ranged from 31.5 percent in the comparison domain for the statement 'A married woman should be able to own land' to 98.3 percent in the comparison domain for the statement 'The husband and wife should decide together how to spend money from crop harvests.'

Reported levels of violence by current partner/husband against female respondents in the last 12 months did not vary greatly by domain for most types of violence. A little under one in five women reported experiencing physical or economic violence, just under one in four reported experiencing sexual violence, and around a third reported experiencing emotional violence in the past year. There was also little variation in reported levels of female respondents themselves perpetrating violence against their current partner/husband. Report of physical or sexual violence perpetrated by someone other than current partner/husband against female respondents in the last 12 months was extremely rare in both domains.

Less than 1.0 percent of female respondents in both domains reported engaging in any of the transactional sex scenarios presented in the survey. While men more frequently reported engaging in transactional sex in specific contexts, there was little variation by domain.

10.2 Differences in Reporting by Men and Women

When reporting on behalf of their household (but in separate individual interviews) males and females in the same domain often gave different reports. The main differences between male and female reports for selected key indicators are:

- Male respondents tended to report somewhat higher volume of groundnut sales in both domains than female respondents.
- Overall, female respondents tended to report somewhat higher involvement in groundnut production and marketing decisions than males reported that their partner/wife had. Differences between male and female respondents with regard to report of women's involvement in decisionmaking related to use of money from sales of groundnuts were somewhat smaller and less consistent than the differences in involvement in decisionmaking related to production and marketing.

- Female respondents were more likely to report they were involved in all of the household decisions asked about than male respondents were to report that their partner/wife was involved.
- The difference between male and female respondents' report of women's involvement in decisionmaking is usually (but not always) accounted for by markedly higher proportions of females that reported themselves as sole decisionmaker compared to the proportion of male respondents in the same domain that reported their partner/wife as sole decisionmaker. (Males' report of joint decisionmaking was often, though not always, higher than females' report of joint decisionmaking.)

There were also individual level indicators where there were differences between male and female respondents' reports in the same domain. Most notable was access to agricultural extension workers and lead farmers and receipt of information/training related to agriculture, gender, budgeting, family planning, and nutrition. Higher proportions of males than females in the same domain reported access to agricultural workers and lead farmers, and receipt of information/training was similar or higher among men than women for each type of information/training addressed by the survey. Male respondents were also less likely to agree with statements supporting more restrictive gender norms than female respondents.

10.3 Exposure to Interventions

PROFIT+ and BLA began operating prior to the implementation of the baseline survey. In addition, there are other organizations and initiatives that aim to provide various agriculture and related behavior change communication interventions operating in the communities included in the evaluation. The baseline survey therefore collected data on exposure to selected types of information and training to assess the extent of potential exposure to project interventions at the time of the baseline survey, and the extent of exposure to similar interventions implemented by other organizations in both the project and comparison domains.

Presence of Community Groups

Findings on the presence of community groups varied by domain for four groups of high interest to the evaluation. COMACO was reported as present in the community by approximately one-third of respondents in the project domain, but also by one-sixth of those in the comparison domain. EPFC, which is involved with the groundnut value chain, was reported by just over a quarter of female respondents across domains. 'Other agricultural producer's groups' were reported by around one third of respondents in the project domain and by around one quarter of respondents in the comparison domain. In addition, a slightly higher proportion of females in the comparison domain (15.2 percent) reported the presence of a DWA in their community than did females in the project domain (11.7 percent).

Exposure to Information/Training

Access to Extension Workers and Lead Farmers

Exposure to agriculture extension workers and lead farmers was slightly higher in the project domain than the comparison domain. Around a quarter of female respondents and around a third of male respondents in both domains reported that they had met with an agricultural extension workers in the last 12 months. In the project domain, 20.6 percent of females and 30.2 percent of males reported they had met with a lead farmer in the past 12 months compared to 16.3 percent of females and 20.7 percent of males in the comparison domain. Respondents in the project domain were more likely to report meeting with a lead farmer from COMACO or PROFIT+ than those in the comparison domain. However, reported contact with these lead farmers was low in the project domain (less than 10 percent) and very low in the comparison domain (less than 3.0 percent for COMACO and less than 0.5 percent for PROFIT+).

Information/Training Ever Received and Most Common Sources

Exposure to information and training was relatively common in both the project and comparison domains. The most commonly reported types of information/training ever received in both domains was conservation farming (approximately half of female respondents and two-thirds of male respondents), making decisions with one's spouse on family planning (approximately half of all respondents), and nutrition (approximately half of all respondents). PROFIT+ was rarely directly reported as the source of information/training (less than 5 percent of respondents in the project domain and less than 1.0 percent in the comparison domain). COMACO was reported more often, by 16.6 percent of males in the project domain and 8.3 percent of males in the comparison domain.

10.4 Implications for the Impact Evaluation

Comparability of Project and Comparison Areas

The finding that there are some systematic differences between the project and comparison domains, most notably that the comparison domain is more remote and has lower groundnut commercialization at baseline, is not unexpected. The program areas for PROFIT+ and BLA were purposively selected based on a number of criteria, and given the system-wide nature of PROFIT+ interventions, all farming households in the four districts in which PROFIT+ is working are potential beneficiaries of the project. This left relatively few options for the comparison domain that were culturally similar and accessed the same agriculture markets. The estimation strategy for the evaluation is a DID approach that will control for both observed and unobserved time invariant differences between households in the project and comparison domains. This estimation strategy rests on the assumption that the trend in key outcomes in

the project domain would be the same as that observed in the comparison domain in the absence of interventions. One option that can be explored during endline analysis is to test the robustness of the findings of the DID model by re-running it on a subset of project areas that are more similar in terms of remoteness and initial market conditions.

Differences in Reporting by Men and Women

One of the reasons for including a subsample of men in the study was the expectation that males and females would give different responses to several of the key questions of interest in this evaluation. The impact evaluation sample was powered based on the sample of females; therefore, the main impact evaluation analyses will be based on females' responses. However, some of the final analyses can be conducted on the male sample to see whether the magnitude and direction of effects are affected by who reports on the outcomes as a test of the robustness of the main findings from the female sample (although the power to detect significant differences will be much lower in the male sample). The difference between the responses of males and females to these types of questions has implications for future data collection related to gender and agriculture and warrants further analysis.

Contamination and Spillover

Complex interventions operating at some degree of scale in the real world raise a number of well-documented evaluation challenges, including the presence of other similar interventions implemented by other organizations.[43] The data suggest relatively little directly reported exposure to PROFIT+ interventions in the project domain at baseline and virtually no reported exposure in the comparison domain. Exposure to BLA/COMACO interventions is somewhat higher at baseline, and there is some exposure to COMACO in the comparison domain, but it is relatively low. Of more concern is fairly widespread exposure in both the project and comparison domains to information and training relevant to the project interventions and outcomes of interest. Analysis of this exposure will need to be included in the endline analysis to explore its potential implications for the evaluations findings.

10.5 Next Steps

Endline data collection is planned for 2017. The same respondents will be interviewed in order to evaluate the impact of PROFIT+ and BLA on the outcomes of interest. A DID approach will be used to compare pre and post intervention differences in outcomes between the project and comparison domains. Qualitative analysis will aim to describe and understand differences in gender dynamics as groundnut commercialization increases. In particular, qualitative analysis will focus on identifying which components of the PROFIT+ and BLA interventions appear to be

[43] Victora CG, Black RE, Boerma JT, Bryce J. "Measuring impact in the millennium development goal era and beyond: A new approach to large-scale effectiveness evaluations," *Lancet* 2011, 377: 85-95.

most and least effective (and why) in helping women maintain or increase control over groundnut production and marketing/sales as commercialization increases. Endline analysis will also include an exploration of whether increased groundnut commercialization results in changes in intimate partner and gender-based violence, and if so, what these changes are and why they occurred.

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Annex A. Balance between Project and Comparison Domains

Quantitative data analysis included balance testing to examine comparability between the project and comparison domains. Sixty-two indicators (all primary indicators along with selected background, secondary, and exposure indicators) were tested to determine statistically significant differences between the project and comparison domains.

A.1. Methods

The differences in the estimated values of the selected indicators between the project and comparison domains were examined through statistical hypothesis testing. Specifically, adjusted Wald tests with correction and adjustment for stratification, clustering, and sampling weights were performed to evaluate the similarities between the two domains for 62 indicators, including primary and secondary outcomes and background characteristics with a statistical significance at the level of 0.05 (two-sided). Only data collected from women were used for the balance testing. The analysis was conducted in Stata 14.0 (Stata Corp LP, College Station, Texas).

A.2. Results

Overall, the project domain is statistically similar to the comparison domain for 43 of the 62 (69.4 percent) indicators tested. Results for primary outcomes, background characteristics, secondary outcomes, and exposure outcomes are presented below.

Primary Outcomes

The comparison domain is statistically similar to the project domain for 5 of the 9 (55.6 percent) primary outcomes of interest (see Table A.1). There were statistically significant differences between the two domains for:

- Percentage of households' groundnut fields where women solely or jointly decided to grow groundnuts in the last agricultural season;
- Percentage of households' groundnut fields where woman solely or jointly decided which groundnut seed variety to plant in the last agricultural season;
- Percentage of households that sold groundnuts in the last marketing season;
- Mean total household sales (kilograms) of shelled groundnuts in the last agricultural season.

Table A.1. Primary outcomes

	Project		Comparison			
	Mean[a]	SE[b]	Mean[a]	SE[b]	p value	
Participation in Groundnut Production by Women						
Percentage of households' groundnut fields where women solely or jointly decided to grow groundnuts in the last agricultural season	55.8	1.78	61.3	1.72	0.027	*
Percentage of households' groundnut fields where woman solely or jointly decided which groundnut seed variety to plant in the last agricultural season	66.3	1.75	71.9	1.39	0.014	*
Participation in Groundnut Marketing/Sales by Women						
Percentage of households' groundnut fields where women solely or jointly decided to sell groundnuts in the last marketing season	59.4	2.44	64.7	2.31	0.116	
Percentage of households' groundnut fields where women solely or jointly sold groundnuts in the last marketing season	55.8	2.65	61.9	2.50	0.092	
Commercialization of Groundnuts						
Percentage of households that sold groundnuts in the last marketing season	46.8	2.00	31.0	1.94	0.000	***
Mean Total Household Sales of Groundnuts						
Mean total household sales (kilograms) of shelled groundnuts in the last agricultural season	141.7	11.36	102.2	10.36	0.011	*
Mean total household sales (kilograms) of unshelled groundnuts in the last agricultural season	101.0	7.39	92.2	6.72	0.380	
Women's Control over Proceeds from Groundnut Sales						
Percentage of female respondents that reported they solely or jointly decided how to use proceeds from the largest sale of shelled groundnuts in the last agricultural season	64.7	3.18	64.5	3.51	0.971	
Percentage of female respondents that reported they solely or jointly decided how to use proceeds from the largest sale of unshelled groundnuts in the last agricultural season	65.7	3.12	69.1	2.10	0.362	

[a] Percentages and means are weighted using the sampling weights.

[b] SE accounts for stratification and clustering from the sample design.

* p <.05; **: p<.01; ***: p<.001. The p values are based on the adjusted Wald tests of no difference between the project and comparison domains.

Background Characteristics

The comparison domain is statistically similar to the project domain for 8 of the 12 (66.7 percent) background characteristic indicators tested (see Table A.2). There were statistically significant differences between the two domains for:

- Percentage of households within 5 kilometers of a tarmac/tarred road;
- Mean total area of household's cropped/cultivated fields;
- Percentage of female respondents with no education;
- Percentage of currently married female respondents that are in a polygamous marriage/cohabitation.

Table A.2. Background characteristics

	Project		Comparison			
	Mean[a]	SE[b]	Mean[a]	SE[b]	p value	
Household Characteristics						
Percentage of households headed by a male member	95.2	0.62	95.1	0.59	0.852	
Mean household size (number of usual members)	6.1	.09	6.1	.07	0.672	
Percentage of households that have electricity	21.3	1.62	23.0	1.58	0.444	
Percentage of households within 5 kilometers of a tarmac/tarred road	32.1	4.15	9.1	2.28	0.000	***
Percentage of households within 5 kilometers of a feeder road	85.2	1.92	80.9	1.96	0.124	
Percentage of households within 5 kilometers of a bulking station	57.6	2.69	51.9	2.78	0.138	
Percentage of households within 5 kilometers of an established market place	41.7	3.03	36.8	2.42	0.208	
Mean total area of household's cropped/cultivated fields	2.4	0.07	2.2	0.04	0.031	*
Individual Characteristics						
Mean age of female respondents	38.2	0.40	38.3	0.35	0.850	
Percentage of female respondents with no education	23.0	1.51	30.3	1.57	0.000	***
Percentage of female respondents that are currently married	94.7	0.65	93.9	0.64	0.407	
Percentage of currently married female respondents that are in a polygamous marriage/cohabitation	18.1	1.43	23.0	1.38	0.009	**

[a] Percentages and means are weighted using the sampling weights.

[b] SE accounts for stratification and clustering from the sample design.

* p <.05; **: p<.01; ***: p<.001. The p values are based on the adjusted Wald tests of no difference between the project and comparison domains.

Secondary Outcomes

The comparison domain is similar to the project domain for 25 of the 34 (73.5 percent) secondary outcomes tested.

Groundnut Production and Sales

The comparison domain is statistically similar to the project domain for 3 of the 6 (50.0 percent) secondary outcomes related to groundnut production and sales that were tested (see Table A.3). There were statistically significant differences between the two domains for:

- Mean total area of households' groundnut fields in the last agricultural season;
- Percentage of female respondents that reported the largest sale of shelled groundnuts in the last agricultural season was to a large-scale trader;
- Percentage of female respondents that reported the largest sale of shelled groundnuts in last agricultural season was to another household.

Table A.3. Groundnut production and sales

	Project		Comparison			
	Mean[a]	SE[b]	Mean[a]	SE[b]	p value	
Mean total area of households' groundnut fields in the last agricultural season	0.4	0.02	0.3	0.01	0.000	***
Percentage of households' groundnut fields where women (only) provide most of the labor for weeding groundnuts	21.6	1.32	20.6	1.35	0.610	
Percentage of households' groundnut fields where women (only) provide most of the labor for harvesting groundnuts	18.9	1.24	19.6	1.27	0.705	
Percentage of female respondents that reported the largest sale of shelled groundnuts in the last agricultural season was to a large-scale trader	19.9	2.75	7.6	2.32	0.001	***
Percentage of female respondents that reported the largest sale of shelled groundnuts in last agricultural season was to another household	5.1	1.73	13.4	3.37	0.029	*
Percentage of female respondents that reported the largest sale of shelled groundnuts occurred at the homestead (0 kilometers)	34.2	4.01	34.7	5.09	0.936	

[a] Percentages and means are weighted using the sampling weights.

[b] SE accounts for stratification and clustering from the sample design.

* p <.05; **: p<.01; ***: p<.001. The p values are based on the adjusted Wald tests of no difference between the project and comparison domains.

Access to Productive Capital, Household Decisionmaking, and Group Membership

The comparison domain is statistically similar to the project domain for 10 of the 14 (71.4 percent) secondary outcomes related to access to productive capital, household decisionmaking, and group membership that were tested (see Table A.4). There were statistically significant differences between the two domains for:

- Percentage of female respondents that reported their household had a cell phone;
- Percentage of female respondents that reported their household had a bicycle;
- Percentage of female respondents that reported COMACO is in the community;
- Percentage of female respondents that reported 'other agricultural producer's groups' are in the community.

Table A.4. Access to productive capital, household decisionmaking, and group membership

	Project		Comparison			
	Mean[a]	SE[b]	Mean[a]	SE[b]	p value	
Access to Productive Capital						
Percentage of female respondents that reported their household had small livestock	52.6	2.02	52.0	1.79	0.833	
Percentage of female respondents that reported their household had mechanized farm equipment	6.7	0.94	8.8	1.04	0.135	
Percentage of female respondents that reported their household had a cell phone	58.7	1.97	48.5	1.77	0.000	***
Percentage of female respondents that reported their household had a bicycle	75.3	1.22	80.4	1.07	0.002	**
Percentage of female respondents that reported their household had any financial assets	21.0	1.86	19.0	1.47	0.397	
Percentage of female respondents that reported someone in their household participated in an out-grower scheme	45.4	2.79	46.5	2.57	0.772	
Of those whose household participated in an out-grower scheme, the percentage of female respondents that reported they solely or jointly decided to participate	41.2	2.07	39.5	2.35	0.600	
Household Decisionmaking						
Percentage of female respondents that reported they normally make household decisions (solely or jointly) related to major household expenditures	41.8	2.21	45.4	1.94	0.224	
Percentage of female respondents that reported they normally make household decisions (solely or jointly) related to own wage/salary employment	29.4	1.85	29.6	1.81	0.947	
Percentage of female respondents that reported they normally make household decisions (solely or jointly) related to spending their own money	82.2	1.31	83.1	1.21	0.642	
Group Membership						
Percentage of female respondents that reported EPFC is present in their community	29.1	2.33	27.4	2.24	0.590	
Percentage of female respondents that reported COMACO is present in their community	32.7	3.16	15.3	1.72	0.000	***
Percentage of female respondents that reported 'other agricultural producer's groups' are present in their community	32.2	1.67	27.9	1.73	0.075	***
Percentage of female respondents that reported a DWA is present in their community	11.7	1.64	15.2	1.64	0.131	
Percentage of female respondents that reported a credit or microfinance group is present in their community	27.4	2.21	23.0	1.82	0.124	

[a] Percentages and means are weighted using the sampling weights.

[b] SE accounts for stratification and clustering from the sample design.

* p <.05; **: p<.01; ***: p<.001. The p values are based on the adjusted Wald tests of no difference between the project and comparison domains.

Food Security

One food security outcome was tested and a statistically significant difference between the two domains was found (see Table A.5).

Table A.5. Food security

	Project		Comparison			
	Mean[a]	SE[b]	Mean[a]	SE[b]	p value	
Prevalence of moderate or severe hunger in the household in the last 30 days/4 weeks	7.5	0.94	5.1	0.73	0.041	*

[a] Percentages and means are weighted using the sampling weights.

[b] SE accounts for stratification and clustering from the sample design.

* p <.05; **: p<.01; ***: p<.001. The p values are based on the adjusted Wald tests of no difference between the project and comparison domains.

Gender Norms and Gender-Based Violence

The comparison domain is statistically similar to the project domain for 11 of the 12 (91.7 percent) secondary outcomes related to gender norms and gender-based violence that were tested (see Table A.6). There were statistically significant differences between the two domains for:

- Percentage of female respondents that reported their current partner perpetrated physical violence against them in past 12 months.

Table A.6. Gender norms and gender-based violence

	Project		Comparison		
	Mean[a]	SE[b]	Mean[a]	SE[b]	p value
Gender Norms					
Percentage of female respondents that agreed with the statement, 'A man should have the final word about decisions in the home.'	68.2	2.11	70.1	1.76	0.481
Percentage of female respondents that agreed with the statement, 'The husband and wife should decide together how to spend money from crop harvests.'	97.4	0.44	96.7	0.43	0.236
Percentage of female respondents that agreed with the statement, 'Women should be able to travel alone to markets to sell crops.'	70.5	1.56	71.1	1.81	0.802
Percentage of female respondents that agreed a husband is justified in beating his wife if she engages in one or more of six scenarios presented in the survey (e.g., 'argues with him')	58.8	1.75	59.8	1.72	0.679

Table A.6. Gender norms and gender-based violence (continued)

	Project		Comparison			
	Mean[a]	SE[b]	Mean[a]	SE[b]	p value	
Gender-Based Violence						
Percentage of female respondents that reported their current partner perpetrated physical violence against them in past 12 months	17.8	1.16	14.6	0.94	0.039	*
Percentage of female respondents that reported their current partner perpetrated sexual violence against them in past 12 months	22.4	1.39	23.5	1.21	0.541	
Percentage of female respondents that reported their current partner perpetrated emotional violence against them in past 12 months	34.5	1.57	31.2	1.48	0.135	
Percentage of female respondents that reported their current partner perpetrated economic violence against them in past 12 months	17.2	1.26	14.3	1.17	0.093	
Percentage of female respondents that reported they perpetrated physical violence against their current partner in past 12 months	4.1	0.48	3.3	0.51	0.231	
Percentage of female respondents that reported they perpetrated sexual violence against their current partner in past 12 months	3.4	0.54	4.1	0.59	0.388	
Percentage of female respondents that reported they perpetrated emotional violence against their current partner in past 12 months	13.3	1.20	12.7	1.18	0.720	
Percentage of female respondents that reported they perpetrated economic violence against their current partner in past 12 months	3.9	0.68	3.2	0.53	0.416	

[a] Percentages and means are weighted using the sampling weights.

[b] SE accounts for stratification and clustering from the sample design.

* p <.05; **: p<.01; ***: p<.001. The p values are based on the adjusted Wald tests of no difference between the project and comparison domains.

Exposure Outcomes

The comparison domain is statistically similar to the project domain for 5 of the 7 (71.4 percent) exposure outcomes tested (see Table A.7). There were statistically significant differences between the two domains for:

- Percentage of female respondents that reported they received information/training on improved groundnut seed;
- Percentage of female respondents that reported they met with a lead farmer in past 12 months.

Table A.7. Exposure outcomes

	Project		Comparison			
	Mean[a]	SE[b]	Mean[a]	SE[b]	p value	
Information/Training Received						
Percentage of female respondents that reported they received information/training on conservation farming	50.7	2.13	48.8	1.79	0.516	
Percentage of female respondents that reported they received information/training on improved groundnut seed	15.3	1.29	10.8	0.95	0.006	**
Percentage of female respondents that reported they received information/training on marketing of agricultural crops	16.1	1.25	16.8	1.36	0.710	
Percentage of female respondents that reported they received information/training on budgeting as a household	18.0	1.47	18.8	1.44	0.686	
Percentage of female respondents that reported they received information/training on sharing profits from crops jointly with spouse	14.8	1.47	13.9	1.26	0.626	
Access to Agricultural Extension Workers/Lead Farmers						
Percentage of female respondents that reported they met with an agricultural extension worker in last 12 months	27.5	1.47	24.5	1.51	0.157	
Percentage of female respondents that reported they met with a lead farmer in past 12 months	20.6	1.52	16.3	1.39	0.039	*

[a] Percentages and means are weighted using the sampling weights.

[b] SE accounts for stratification and clustering from the sample design.

* p <.05; **: p<.01; ***: p<.001. The p values are based on the adjusted Wald tests of no difference between the project and comparison domains.

A.3. Discussion

Differences between the project and comparison domains for some indicators—most notably those that relate to the degree of groundnut commercialization—is not unexpected. PROFIT+ and BLA purposively selected their project areas based on a number of criteria, some of which were related to higher potential for groundnut production. In addition, the system-wide nature of PROFIT+ interventions meant that all farming households in the four districts in which PROFIT+ is working are potential beneficiaries of the project. This left relatively few options for the comparison domain that were culturally similar and accessed the same agriculture markets and these areas were expected to be more remote than the project areas.

However, the results of the balance testing overall are encouraging as they establish a good level of similarity between the project and comparison domains. At the same time, the results indicate that there are statistically significant differences for some of the primary and secondary outcome indicators between the two domains. The difference-in-differences (DID) analysis that will be performed to evaluate project impact from the combined baseline and endline data will control for time-invariant observed and unobserved differences between project and non-project areas and will include individual level observed background characteristics in the statistical models to account for their potential impact on the outcome indicators. The DID

analysis also allows for differences in outcome indicators at baseline when estimating project impact.