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ASSESSING THE IMPACT OF PROFIT ZAMBIA IN THE COTTON, BEEF CATTLE, AND RETAIL INPUT SERVICES VALUE CHAINS

BASELINE RESEARCH REPORT

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By Gary Woller

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INTRODUCTION

This report presents the findings from the baseline impact assessment of the Production, Finance, and Improved Technology (PROFIT) Program based in Lusaka, Zambia. PROFIT seeks to increase the long-term competitiveness and growth of rural economic activities in Zambia while assuring that a growing number of micro and small enterprises (MSEs) contribute to and benefit from the growth process. To achieve this goal, PROFIT uses a value chain approach that seeks, among other things, to create and strengthen links between micro and small enterprises (MSEs) and other actors at different levels of the value chain.¹ PROFIT currently works in five value chains: cotton, beef, honey, high value horticulture, and retail input services.

The PROFIT impact assessment uses a longitudinal, quasi-experimental design implemented through a mixed-method (quantitative and qualitative) approach. The quantitative part of the assessment includes a baseline survey of 919 program clients and 620 non-clients implemented during August-September 2006 and a follow-up survey of the same clients and non-clients after a two-year interval. The survey is complemented by qualitative research consisting primarily of in-depth key informant interviews and focus groups discussions with selected value chain actors in both the baseline and follow-up research.

The impact assessment focuses on PROFIT interventions in three of the five value chains in which the program is currently working: cotton, beef cattle, and retail input services. Impacts will be measured at the value chain, MSE, and household levels. The purpose of the baseline study is to establish conditions in both the treatment (client) and control (non-client) groups at the beginning of the impact assessment, so as to assess the level and direction of change in the follow-up study two years later. Program impact, or lack thereof, will be inferred from relative changes within and across the two study groups.

Besides being an important project for private sector development in Zambia and Africa more generally, PROFIT is a good example of the new generation of private sector development (PSD) programs currently being implemented by USAID and other donors in developing and transition countries. An impact assessment of PROFIT's effectiveness in achieving its goals will generate information that can be used by USAID/Zambia, other African missions, USAID generally, and other donors to gauge the effectiveness of this approach and to inform decisions about the design of future projects.

1. DEVELOPMENT IN ZAMBIA

Zambia is a landlocked low-income country in Southern Africa with a history of under-fulfilled development potential. The country has ample land for crops and livestock and a good endowment of water and other natural resources. With a population of 11.7 million people in 2005, Zambia has an area slightly larger than the state of Texas with less than half its population.

¹ This impact assessment of the PROFIT project is sponsored by USAID and jointly financed by PROFIT and the Washington-based Accelerated Microenterprise Advancement Project (AMAP). Responsibility for implementation of the study has been contracted to Development Alternatives, Inc. (DAI), a consulting company based in Bethesda, Maryland, USA. DAI in turn has sub-contracted part of the work to RuralNet, a Zambian research firm.

At independence in 1964, Zambia's per capita income was among the highest in Sub-Saharan Africa, owing largely to the development of copper mining since the 1920s. During the first three decades of independence, however, per capita income declined steadily as a result of falling copper prices, misguided public policies, poor resource management, drought, and heavy involvement in the freedom struggles of neighboring countries. According to World Bank figures, GDP per capita (expressed in 2000 \$US) dropped by nearly 50 percent—from \$613 in 1965 to \$318 in 1995.

Zambia's economy remains small and undiversified. GDP per capita in 2005 was \$910 in purchasing power parity equivalents. Agricultural productivity is extremely low, as reflected in the fact it employs 85 percent of the labor force but produced only 19 percent of GDP in 2005. Approximately 56 percent GDP originated in services and 25 percent in industry (including just 12 percent in manufacturing). Exports of goods and services amounted to 16 percent of GDP. After decades of socialism, the private sector is poorly developed and largely controlled by foreigners and ethnic minorities.

Poverty in Zambia is pervasive but inadequately measured. The UNDP ranks Zambia 165th out of 177 countries on its human development index. According to the UNDP's 2006 Human Development Report, 75 percent of the population lives below the national poverty line, 75 percent lives on less than \$1 a day, and 95 percent live on less than \$2 a day. Both the fertility and death rates are high with the latter rising because of HIV/AIDS, which is a major problem in Zambia. An estimated 17 percent of Zambians ages 15–49 are HIV-positive or have full-blown AIDS. According to official records, HIV/AIDS has killed about 700,000 people and orphaned more than 800,000 children since the first case was reported in 1985. Life expectancy, reported as 49 years in 1990, was 38.4 years in 2005. The infant mortality rate was estimated to have been 102 per thousand in 2005, down from 109 per thousand in 1970.

Economic growth has picked up in Zambia recently. Following the long-delayed privatization of the copper mines in 2000, which led to the upgrading of existing mines and the opening of new ones, and IMF-bolstered efforts to improve the government's control of its finances, economic growth exceeded 5 percent in 2003–2005 helped in part by strong copper prices and despite fuel shortages and industrial unrest in 2005. In 2005 agricultural growth slowed to 2.8 percent because of drought and disincentives to grow maize arising from plentiful provision of food aid.

A three-year poverty reduction and growth facility (PRGF) was agreed to with the IMF in 2004. It aims to improve fiscal discipline and management, curb inflation, and eventually cut interest rates, leading to increased private-sector borrowing. The PRGF also provides for improved governance, a better business environment, and completion of the privatization program.

Zambia is a large recipient of food and other foreign aid. According to World Bank data, aid amounted to 16 percent of GNP in 2005, or \$81 per capita. Zambia experts have expressed concern over the disincentive effects of aid on such a large scale, especially the discouraging effect of food aid on the cultivation of maize, the staple food crop. Low maize prices helped to shift farmers' incentives in the direction of cotton and other commercial crops. More generally, aid dependency is thought by many observers to weaken development efforts. On top of this, various factors have contributed to an over-valuation of Zambia's currency, the kwacha. This tendency, which has not been effectively dampened or offset by government policy, helps to make imports available at low prices but weakens incentives to export.

Other barriers to development include a lingering socialist mindset in some quarters and the high incidence of HIV/AIDS, which has reduced life expectancy and severely disrupted family life and

economic activities while discouraging education and skill acquisition. Private sector development of the sort promoted by PROFIT offers Zambia opportunities for raising productivity and competitiveness and thus improving welfare for the poor, who make up the great majority of the population. The expansion and upgrading of smallholder agriculture are feasible if technical and incentive problems can be solved and suitable market linkages developed.

2. THE PROFIT PROGRAM

PROFIT is a five-year project that began in June 2005. It is funded at the level of \$15 million, including \$5 million for local grants. The Cooperative League of USA (CLUSA) implements the project on behalf of the United States Agency for International Development (USAID). International Development Enterprises (IDE) and the Emerging Markets Group (EMG) participate as sub-contractors.

The overarching goal of PROFIT is to increase industry growth while assuring meaningful poverty reduction at the household level. To achieve this growth with poverty reduction goal, PROFIT uses a value chain approach that is driven by two components. The first component is a value chain analytical framework and the second component is market facilitation.

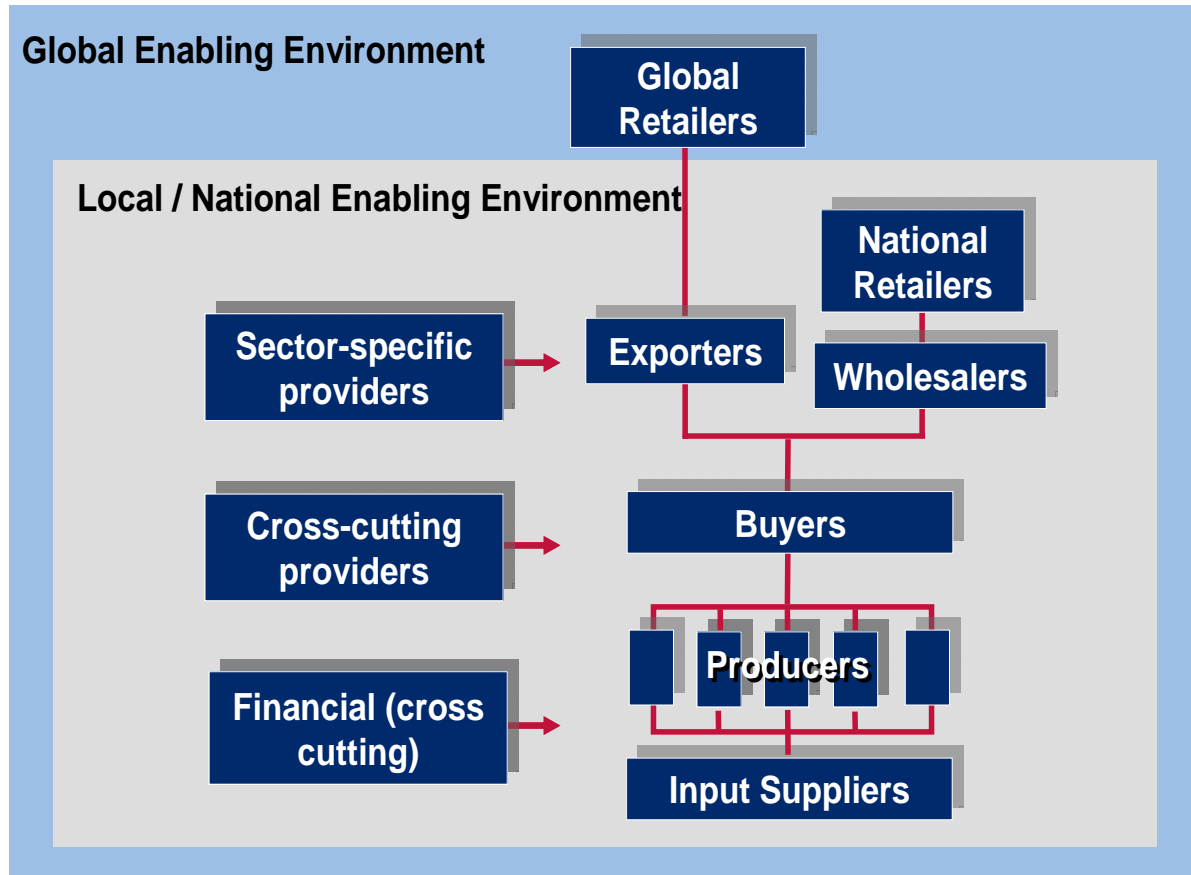
2.1. VALUE CHAIN ANALYTICAL FRAMEWORK

PROFIT's value chain analytical framework is based on two foundational principles and includes four main components. The first principle is targeting competitive, high potential industries that include large numbers of MSEs that can produce broad-based economic growth. The second principle is that achieving industry growth requires consideration of broader market systems in which industries operates. (See Figure 1 for a representation of PROFIT's value chain framework.)

The four main components include (1) subsector or industry selection, (2) identifying competitive advantage, (3) designing a commercial upgrading strategy, and (4) ensuring competitive sustainability. Each of these is described in greater depth below.

FIGURE 1

VALUE CHAIN FRAMEWORK



2.1.1. Subsector or Industry Selection

PROFIT uses three broad selection criteria in which numerous sub-criteria are defined to maximize returns from PROFIT investments.

- **Growth potential:** The ability to turn competitive advantage into competitiveness in the near, medium, and/or long term.
- **Scale of results/impact** (at firm and industry level): Defined by income gains, asset development, and sustainability.
- **Industry leadership:** Interested and committed leadership that understands the key role that MSEs play and who are willing to work together to address industry-wide constraints

2.1.2. Identifying Competitive Advantage

End market demand characteristics determine how or even whether an MSE-dominated industry can achieve competitive advantage. Preconditions for achieving competitive advantage include efficiency and differentiation. Differentiation is achieved through product, operations, and brand.

- **Product:** The uniqueness of the product or services in terms of its price/quality ratio.
- **Operations:** The uniqueness of the firm to meet buyers' expectations over time that creates a reliance on the firm's ability to deliver consistently.
- **Brand:** The uniqueness of the firm's image in the marketplace in terms of the firm itself and products or services that it produces.

2.1.3. Designing A Commercial Upgrading Strategy

So as to transform competitive advantage into competitiveness, PROFIT fosters commercially grounded mechanisms that can address critical constraints and take advantage of opportunities so that an industry will achieve the most appropriate combination of efficiency and differentiation for a given end market. PROFIT'S commercial upgrading strategy targets constraints and opportunities in four areas: enabling environment, vertical linkages, horizontal linkages, and supporting markets.

Vertical linkages areas are particularly relevant for the three sectors studied in the PROFIT impact assessment. Vertical linkages have to do with how firms at different levels in the value chain interact with each other; the extent to which actors share risk or push information, skills, and know-how from those that have it to those that need it; and whether and how they work together to respond to threats or take advantage of opportunities. Links exist up the value chain (e.g., between international buyers and national exporters) as well as down the value chain (e.g., in the form of backward linkages to small producers and/or producer groups).

Horizontal linkages have to do with how firms performing the same function within a value chain interact with each other and how this affects whether the industry can effectively address joint constraints (e.g., high transaction costs), improve efficiency, achieve differentiation, or push innovation and learning (e.g., firm upgrading).

Supporting markets refer to how markets for financial, sector specific and non-sector specific services/product function and how this affects the ability of all firms in the value chain to access required inputs, capital, know-how, and skill sets. For MSEs in particular it is often the key factor determining whether they will be able to contribute to and benefit from the competitiveness of an industry

2.1.4. Ensuring Competitive Sustainability

To remain competitive over time, an industry must be able to respond to changing market demands and remain focused on key strategic characteristics that define the industry's competitive advantage. Equally important is the ability of an industry to remain focused on constantly improving its capacity to meet demand characteristics that define its competitive advantage. For example, Zambian cotton is essentially an undifferentiated crop. As a result, the Zambian cotton industry has to remain focused on constantly increasing its efficiency if it is to compete in the long term.

Even in cases where externalities require the industry to respond, the industry has to deal with this immediate threat to the industry while maintaining its ability to meet its end clients' expectations.²

² This was case when the kwacha increased in value by 30 per cent against the US dollar, resulting in a close to 30 percent increase in the cost of production within one month

Achieving this duality of maintaining and improving current market relationships, while ensuring the capacity to respond effectively over time to opportunities and threats, requires improvements in the nature and types of relationships, the way in which learning and innovation are valued, and breadth and depth of benefit flows.

2.2. MARKET FACILITATION

PROFIT's market facilitation principles (Box 1) provide staff with the broad guidelines on how to intervene within a value chain without becoming part of the chain. The most important principle is that all interventions have to be tied back to PROFIT's purpose for intervening.

Two key intervention principles are initial sequencing and exit strategy. Sequencing refers to the intensity of interventions from light (i.e., very little resources or involvement of PROFIT staff) to more heavy handed (i.e., greater allocation of PROFIT resources) interventions. The default is light touch, unless there are compelling reasons that increased intensity is needed to achieve the objective. In all cases, a clear exit strategy has to be understood and articulated to value chain actors before starting an intervention.

In addition to framework analysis that identifies systemic and transactional weaknesses, PROFIT performs analysis to identify intervention targets. The analysis looks for organizational points in the value chain and within a social network, as well as competitive pressure points and cultural norms, where leverage can be gained resulting in an increased return on project investments. For example, within Zambia's relatively weak industries, PROFIT actively fosters the emergence of successful industry leaders as a means to drive growth and demonstrate industry potential and leadership models. By targeting a key leader, PROFIT can achieve broader industry objectives without having to work with each specific firm in the industry. Another example of where PROFIT leverages its resources is when it facilitates improved outgrower management by linking lead firms to farmers and farmers to production incentives that quicken the pace of upgrading and increase farmer benefits. PROFIT's ability to affect broader systemic change within an industry depends on its ability to target interventions that will result in greater impacts than the sum of the resources at PROFIT's disposal. As a result, this analysis is a core part of PROFIT's market facilitation component.

Box 1

PROFIT Intervention Principles

Why:

- To increase the competitiveness of the whole industry over time while assuring that growing numbers of MSEs contribute and benefit using a strategy that:
 - fosters increased industry and firm capacity to conduct and enter into more effective relationships, learn and innovate in order to upgrade, and accept and encourage rational flows of benefits; and
 - fosters a greater role for private sector and a more strategic role for government, donors, and project implementers—who should act as market 'facilitators' rather than players.

How:

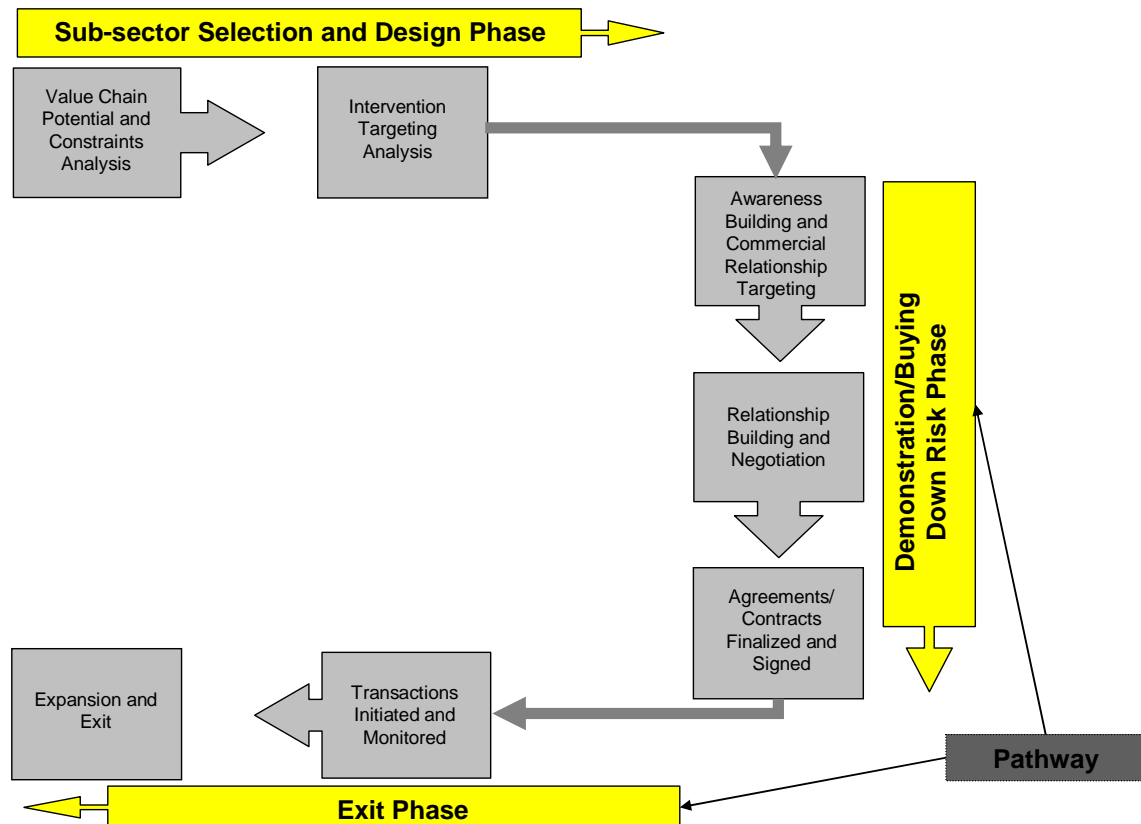
- Sequence intervention options that first looks for "light touch" and progressing to the last option of Profit funds used to buy-down excessive risks.
- Adhere to a carefully planned exit strategy, so that impacts are sustainable.

2.3. THE PROFIT IMPLEMENTATION PROCESS

PROFIT uses an implementation process that allows it to gauge progress against results and apply resources where needed to overcome obstacles or push momentum faster. The implementation process is broken into three phases—sub-sector selection and design, demonstrating/buying down risk, and exit—with an additional two to three stages in each phase. Figure 2 presents graphic summarizing the PFOFIT implementation process.

FIGURE 2

PROFIT Implementation Process



Sub-sector selection and design phase: This phase starts with a two stage value chain analysis. The first stage assesses the potential of an intervention in an industry based on growth prospects, scale/impact of MSE participation, and leadership characteristics of an industry. The second stage begins with an analysis of inter-firm cooperation and support market constraints within the value chain and follows with an intervention targeting analysis to determine intervention entry points, or key services and functional relationships where PROFIT can leverage systemic change.

Demonstration/buying down risk phase: Based on the intervention entry points identified in Phase 1, PROFIT engages with selected lead firms, retailers, service providers, communities, and/or support markets. This phase follows a process from initial engagement to establishment of new or improved commercial relationships that are mutually beneficial, more formal, longer-term and supportive of industry level requirements.

The first stage in this phase involves awareness building activities (e.g., meetings and events) that allow PROFIT staff to interact with commercial actors to discuss opportunities. The relevant value chain actors are encouraged to self-select as a participants into PROFIT interventions. PROFIT uses a range of

specific actions that value chain actors must perform to demonstrate interest and commitment to upgrading themselves and/or the industry.

Once actors have selected themselves into the program, PROFIT facilitates more direct and intensive interactions between participants, whether part of an out-grower scheme or between retailers and consumers, retailers and service providers, service providers and consumers, etc. PROFIT assists in moving these relationships from initial meeting to a more formal structure (e.g., agreement, structured buying mechanism, contract farming, etc.).

Stage 3 begins once the participants agree to move into a formal structure. In this stage, PROFIT assists in designing and mediating final negotiations and formalization.

Exit Phase: The process in the final phase depends on the monitoring of transactions and/or activities under contract. As transactions or contract performance reaches a sustainable level, PROFIT either exits completely or moves to the next stage of facilitating a scaling up or expanding process. Monitoring is critical during this phase as exiting is not clear cut and requires nuanced information.

During the first stage of the exit phase, PROFIT works to facilitate increasing volumes of transactions, establish effective dispute resolutions mechanisms, increase confidence in market mechanisms, and foster new entrants/services/products into the market place. Activities include technical assistance, mimicry, direct mediation, training, and linkages to third party mediation and upgrading services. In the second stage, PROFIT ceases interactions with value chain participants and takes on a solely monitoring role to assess responses and emerging problems.

3. BACKGROUND ON THE SECTORS EXAMINED IN THE IMPACT ASSESSMENT

Due to budget constraints, it was not possible to assess each of the five sectors in which PROFIT currently works. After discussion with PROFIT staff, three sectors were chosen for study: cotton, beef cattle, and retail input services. Cotton and beef were selected because they are activities that involve large numbers of smallholders (200,000–300,000 in each case) and because causal models for PROFIT's interventions in these sectors were relatively well defined. Retail services entail PROFIT's effort to build up the input supply network at the retail level for smallholders in a variety of sectors.

3.1. COTTON

Cotton production remains constrained by low productivity at the farm level. The sector suffers from poor infrastructure, high transaction costs, and relatively low yields that make it very inefficient. Notwithstanding, cotton could be solid earner for farmers—even with the exchange rate difficulties—with a potential to produce average yields in the range of 1,000 kilograms per hectare. Cotton, moreover, has good export potential, existing market linkages that can be further strengthened, and a strong lead firm (Dunavant) that contracts with farmers and provides inputs, finance, extension services, and market outlets. Cotton exports from Zambia remain economically viable at present, but further appreciation of the kwacha could threaten the industry's survival.

PROFIT works at multiple levels in the value chain. With farmers it works via the Conservation Farming Unit (CFU) providing training to farmers on improved cultivation methods aimed at raising productivity. With lead firms, PROFIT is working to with them to improve their management systems via information

communications technology so they can more effectively monitor and direct resources towards incentivizing productivity. With input providers, PROFIT is working with them to offer input services to cotton farmers via the lead firm's value chain financing mechanism. PROFIT further plans to initiate a range of new activities in the cotton sector, including injecting new forms of technology such as integrated pest management and irrigation into outgrower schemes; fostering the integration of third party services into value chain financing schemes of lead firms (such as tillage); and improving the communications between lead firms and smallholders.

3.2. BEEF CATTLE

The beef cattle sector competes based on a combination of efficiency and differentiation. Delivering consistently high quality products that range from low margin high volume raw meat to high-value processed products is critical to the industry's overall competitive position. The industry must form efficient channels for high volume products that maintain a basic level of quality, but it is also important for the industry to develop specialized channels for differentiated products, like certain processed meats. In this context, it is critical for firms and the sector to achieve effective and efficient linkages from inputs to production, transport, processing and retail distribution channels for the full range of products that are emerging.

At present, the beef sector is relatively disconnected with weak and ineffective linkages that are plaguing its ability to respond to critical threats, such as low productivity, drought, disease outbreak and competition from imports. Further, the disconnectedness in the sector has limited information flows and fostered a general lack of transparency that distorts commercial incentives, limits the adoption of better on-farm practices, and minimizes the demand for critical support products (e.g., veterinary services, financial products and services, and feed services and products).

A particularly important constraint to sector upgrading is the high rates of cattle morbidity and mortality. The beef sector will remain vulnerable until the issue of smallholder disease control can be effectively addressed. PROFIT has identified three critical needs in the vet service provision: vet lab services; a financing facility to get improved infrastructure into rural communities, including dip tanks and crash pens; and a recognized community-based professional position (i.e., community livestock worker, or CLW).

PROFIT has already identified a group of vets and industry leaders that are planning to invest in a vet lab (but who are, nonetheless, concerned about the risks of investing in a weak market). PROFIT will work with this group to buy down the risk and foster the decision to make the investment. It will take time to grow and upgrade the private vet supply to meet the needs of smallholder cattle farmers. In particular, marketing vet services will require some time as trust is a major factor in smallholder buying decisions. The limited supply presents a serious hurdle to establishing trust as vets cannot spend as much time in the community as may be necessary. PROFIT is adjusting its facilitation activities to foster greater interaction before pushing contract negotiation.

PROFIT will also work with vets and communities to develop a mechanism for farmers to access finance. In all likelihood farmers will have no immediate access to commercial finance, which would require PROFIT to establish a test fund to demonstrate the credibility of communities to pay back funds for dip tanks and crash pens. PROFIT will be working with dip tank buildings and local engineers to foster a range of building options that are consistent with the communities' ability to pay.

PROFIT will also further the institutionalization process of a CLW training standard. The foundation of such a standard will allow for individual vets to expand in an economically feasible manner.

Beyond the vet services market, PROFIT will foster feedlot services, outgrower models for cattle raising, and a range financial services targeting smallholders. There are two feedlots that PROFIT is talking with to facilitate an appropriate service offering for smallholders. PROFIT is also investigating commercial cattle ranches and abattoirs to assess interest in piloting outgrower schemes.

As a few of the contracts move along and results emerge, PROFIT will foster continued vet networking, including vet to vet upgrading and activities to grow the industry by getting more vets involved, expanding current vet clientele, and addressing key gaps in the industry.

3.3. RETAIL INPUT SUPPLY

PROFIT is working with input dealers to facilitate expansion and improvement of the agriculture input distribution network at the retail level. The retail inputs sector is tied directly to the cotton sector in that this sector's competitive position is dependent on the emergence of a robust and expanding sector specific support markets for input products and services.

PROFIT continues to modify its activities to push the evolution of the retail inputs sector. Key among the modifications is to target already available service providers, including commercial tillage, as a platform for marketing services to smallholders. PROFIT has learned and adopted from how the smallholder consumers purchase inputs and services. In particular, PROFIT is working with input providers to develop marketing strategies based on seasonal cash flows and not necessarily the time when the inputs are needed (also the time when farmers have the least cash).

PROFIT is working with input providers to foster bundling of products and services to decrease overall costs of needed inputs by increasing volume and decreasing the number of transactions. Part of the bundling process will be a stronger push to tie spraying providers directly to retailers and fostering private quality assurance certifications as part of a retailer's competitive strategy. Further, PROFIT will facilitate internal training capacity for strategic marketing and management skills within the larger multi-outlet retailers, including institutionalizing agent and retailer management training as a means to gain a competitive edge.

As retailers and service providers engage more smallholders, PROFIT will promote the integration of improved technology messages within the product and service offering. Promoting improved technology principles via input and service providers will increase adoption rates, drive innovation, and catalyze smallholder investment (i.e., irrigation, services, etc.). Conservation farming, irrigation, and integrated pest management are examples of the types of technologies PROFIT is promoting. PROFIT will also begin to work back through the supply chains to look for production opportunities of which smallholders could take advantage (e.g, seed outgrower, seedling outgrower, etc.).

4. DESIGN OF THE IMPACT ASSESSMENT

4.1. KEY QUESTIONS

The key questions to be addressed in the impact assessment derive from the project logic, or causal models, for the cotton, beef, and retail services sectors. They concern whether the activities being studied have the impacts hypothesized in the project logic. The impact assessment will also focus on expected

outcomes, combining information received from quantitative and qualitative impact assessment with data from the project's performance monitoring system.

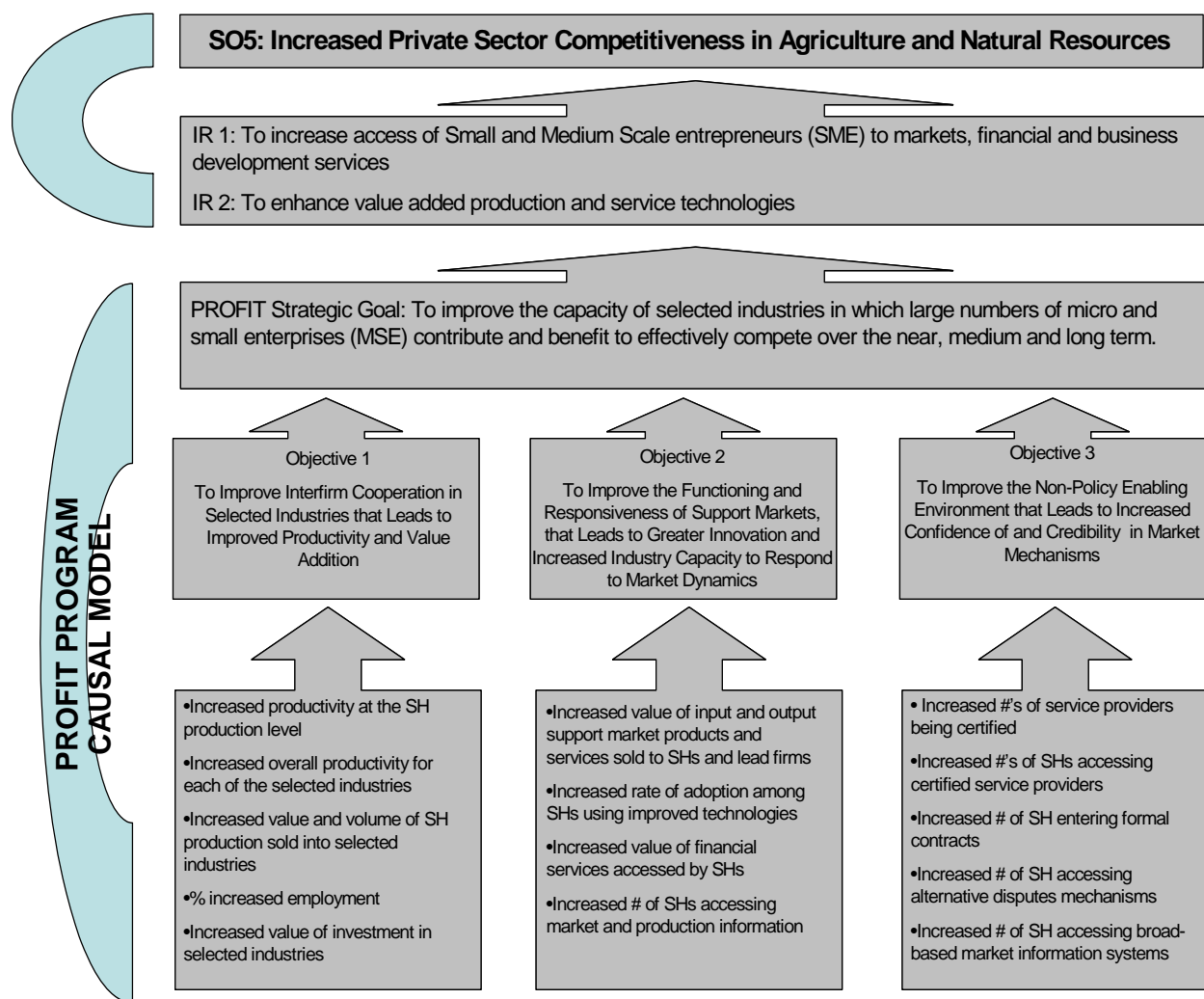
For the cotton and beef value chains, the study will try to measure impacts at three levels:

- The sector: Do PROFIT interventions promote the growth and development of the sector, as well as increased participation by MSEs in sector activities and increased benefits to MSEs as a result of their participation?
- Participating firms: Do MSEs served by the program succeed in upgrading themselves and deriving enhanced benefit from their productive activities?
- Associated households: Do the households associated with participating MSEs derive benefits from the project?

4.2. CAUSAL MODELS

The underlying project logic can be shown via formal causal models. A causal model details the causal (or logical) links between program activities and expected impacts. Underlying these links is a set of theorized causal relationships that program designers believe to be true. The impact assessment aims to prove the existence of these theorized relationships. A causal model for the entire PROFIT project developed by project staff is shown in Figure 3. Causal models for the cotton, beef cattle, and retail input sectors developed jointly by the impact assessment researchers and project staff are shown in Figures 4–6.

FIGURE 3. CAUSAL MODEL FOR PROFIT



The causal models jointly developed for the cotton, beef cattle, and retail services sectors in Figures 4–6 use a different format from the causal model developed by the project in Figure 3. This illustrates the point that the content and format of a causal model is a matter of personal preference. The important thing is that the causal model accurately captures the critical causal links in the program logic. These causal links are seen clearly in Figures 4–6. Each of the three sector causal models begins with program activities, the first link, and ends with program impacts, the last link. In between activities and impacts are two intermediate causal links: outputs and outcomes. Note that in Figures 4–6, outputs are associated with specific activities, whereas outcomes and impacts are assumed to be the combined result of multiple project activities and outputs.

Program activities include the actual activities implemented by the program in addition to the inputs (or resources) used to implement those activities. Impacts are the intended end results that can be attributed to program activities. Outputs are the direct and tangible results of program activities. Examples of outputs include the number of trainings given, the number of people trained, the number of agreements signed, the number of business member organizations (BMOs) created, and the like. Such indicators can be easily

quantified as well as aggregated.³ Outcomes are observed changes among program clients, among other value chain actors, or in the enabling environment. Outcomes differ from impacts in that the former are means to achieve the latter. In the cotton sector, for example, increased yields per hectare (outcome) are a means to achieve higher MSME sales and profits (impact).

FIGURE 4. CAUSAL MODEL FOR COTTON SECTOR

Activities	Outputs	Outcomes	Impacts
CFU Farmer Training <ul style="list-style-type: none"> • Training of trainings for lead farmers • Incentivized farmer extension • Demonstration plots 	<ul style="list-style-type: none"> • # of trainers trained • # of farmers trained • # of demonstration plots 	<ul style="list-style-type: none"> • Rising % of land under conservation farming practices • Rising yield/hectare in served areas • Rising % of land receiving proper early preparation 	Sector Level <ul style="list-style-type: none"> • Increased competitiveness • Improved ability to sustain competitiveness
Facilitated Commercial Delivery of Sector-Specific Fee Services <ul style="list-style-type: none"> • Identify potential suppliers • Promotion • Linkages 	<ul style="list-style-type: none"> • # of commercial service providers • # of linkages 	<ul style="list-style-type: none"> • Increased secondary cropping • Decreased production costs per hectare • Improved soil quality • Increase land sprayed 	Firm Level <ul style="list-style-type: none"> • Increased sales • Increased profits • Increased productivity
Sector-Specific Market Information and Training <ul style="list-style-type: none"> • SMS (cell phone) text messaging • Radio advertisement 	<ul style="list-style-type: none"> • # of services available • # of people using services • # of radio programs on farming practices • # of hours of radio programming on farming practices 	<ul style="list-style-type: none"> • Increased diversification of services • Increased revenue for service providers • Better farmer knowledge of market opportunities and cultivation practices • Increased use of appropriate tillage service 	Household Level <ul style="list-style-type: none"> • Increased income • Decreased poverty • Increased household assets

³ Unlike outcomes and impacts, outputs are typically objectively measurable, meaning they are capable of being independently observed, measured, and verified. For this reason, they are commonly used as indicators in program monitoring systems.

FIGURE 5. CAUSAL MODEL FOR BEEF CATTLE SECTOR

Activities	Outputs	Outcomes	Impacts
Vet Services <ul style="list-style-type: none"> Organize group payment mechanism for communities Facilitate service delivery structure based on herd plans Facilitate a vet networking Develop business expansion model (work with vet assistants) <p>Facilitate development of livestock insurance (packages with services)</p>	<ul style="list-style-type: none"> # of private vets providing services # of animals receiving health care (especially preventive) # of vets organized into networks # of vet assistants # of insurance policies established # of new bulls sold # of stud service transactions/AI Sales volume of drugs sold through vets & retail stores # of vets given business training 	<ul style="list-style-type: none"> Increased # of cattle under private vet schemes Decreased cattle mortality & morbidity Increased value/animal Increased # of vet services provided (growth of vet industry) Increased # of smallholders accessing financial sector (decreased risk of loss) Improved margins New entrants of vets & vet assistants Improved animal quality 	Sector Level <ul style="list-style-type: none"> Output growth by value & volume Growth (in volume & value) of output going through formal structure Access to high-quality market Growth in smallholder output share Increased smallholder price relative to commercial price Improved ability to withstand shocks Firm Level <ul style="list-style-type: none"> Increased sales Increased profits Increased productivity Household Level <ul style="list-style-type: none"> Increased income Decreased poverty Increased household assets
Market Transparency Activities <ul style="list-style-type: none"> Facilitate establishment of blind auctions with scales Facilitate grade & standard pricing at abattoirs Link smallholders to feed lot systems Develop artificial insemination (AI) & breeding services through vets Facilitate wholesale distribution of vet drugs Develop savings alternatives for smallholders Link tanneries to abattoirs 	<ul style="list-style-type: none"> # of auctions established # of scale services available Grades & standards pricing structure established # of feed lot outgrower systems established # of cattle sold at feed lots Use of savings instruments # of cattle sold through more transparent mechanisms 	<ul style="list-style-type: none"> Decreased mean age at slaughter (increased stock turnover) Differential pricing by quality Increased awareness of market requirements among vets Shift from cattle as a store of value New entrants into beef industry (more balanced market shares) 	

FIGURE 6. CAUSAL MODEL FOR RETAIL INPUT SERVICES SECTOR

Activities	Outputs	Outcomes	Impacts
<ul style="list-style-type: none"> • Expansion model development using wholly owned stores, agent networks, modified franchises (corner of store), buyer clubs • Create incentives to market inputs • Conduct market research with agents & retailers • Work with larger retailers on packaging and inventory management • Facilitate transparent contracts between wholesalers and retailers/franchises (clear responsibilities regarding payments & dispute resolution) • Work with Farmers' Union on dispute resolution • Work on marketing programs of retailers & agents • Facilitate or provide agents' access to training • Promote dealer networks; may help dealers access financial services • Work with seed, chemical, etc. producers & push them into the distribution network • Facilitate outgrower schemes for seeds • Add layers of services to input supply chains (e.g., sprayers linked to input providers) • Promote outgrower schemes for non-traditional crops 	<ul style="list-style-type: none"> • # of retailers signing MOUs • # of agents, franchise stores, wholly owned new stores & buyer clubs • Incentive scheme in place • Agreements signed between retailers & agents • Marketing/inventory plans completed • Market research conducted • New dispute resolution mechanism in place • # of dealers in networks • Linkages to wholesalers/ large producers established • # of outgrowers 	<ul style="list-style-type: none"> • Increased sales at wholesale & retail levels among clients and within the sector • Increased # of farmers accessing retail services • Marketing activity launched by retailers • Increase # of retail outlets • Decreased cost/unit of inventory • Increased access to finance from seed companies &/or banks • Smooth functioning of dispute resolution process • Increased knowledge about inputs and their uses • Increased used of inputs on farms • Increased production of inputs (seed, chemicals) • Reduced cost of inputs • Reduced transportation cost for farmers 	<p>Sector Level</p> <ul style="list-style-type: none"> • Increased farm productivity (multiple crops) • Increased farm income <p>Firm Level</p> <ul style="list-style-type: none"> • Increased sales • Increased profits • Increased productivity <p>Household Level</p> <ul style="list-style-type: none"> • Increased income • Decreased poverty • Increased household assets

4.3. HYPOTHESES

The outcomes and impact columns of Tables 4–6 form the set of hypotheses to be tested in the impact assessment. If the program has its intended impact, the following results are expected in each of the three sectors.

4.3.1. Cotton Sector Hypotheses

Hypothesis 1: Project activities will lead to increased and sustainable sector competitiveness in world markets. This means that the sector will be able to sell a growing volume of cotton, of adequate and improving quality, at prices that cover the cost of production and earn a profit for smallholders.

Unfortunately, it is not possible to assess the sustainability of sector-level impacts arising from the obvious fact that sustainability, if it is achieved, would have to be observed over a timeframe much longer than the life either of the impact assessment or of the project itself.

Hypothesis 2: Smallholder cotton farmers will benefit from project activity by increasing their productivity, sales, and profits. Improved firm performance is a necessary condition for achieving greater sector competitiveness.

Hypothesis 3: To the extent impacts are achieved at the firm level, there should be in turn measurable impacts on smallholder households, especially rising incomes and accumulation of household assets. Especially since the great majority of households concerned are most likely living below the poverty line, an important issue will be whether improved performance in cotton cultivation helps to boost household income and improve family welfare more generally.

Hypothesis 4: Improved sector and firm performance will be preceded by measurable firm-level outcomes, including better farmer knowledge, increased adoption of conservation farming and other productivity-enhancing methods, rising yields, improved soil quality, increased secondary cropping, decreased production costs, increased diversification of farming services offered to farmers, and increased revenue for service providers. If to the extent these positive outcomes are achieved, it strengthens the case for attributing any measured improvements in impact variables to project activities.

4.3.2. Beef Cattle Hypotheses

Hypothesis 1: Project activities will lead to increased sector output by value and volume, increased channeling of production through formal marketing structures, increased smallholder participation, increased access to higher-end markets, a higher producer price relative to the commercial price, and improved ability to withstand shocks on the part of the smallholders.

Hypothesis 2: Smallholder cattle farmers will benefit from higher productivity, increased sales, and higher profits for participating smallholders. Improved firm performance is a necessary condition for achieving greater sector competitiveness.

Hypothesis 3: If the firm-level impacts are achieved, they will result in improved welfare within smallholder households as indicated by higher household income, asset accumulation, and the ability of participating households that are poor to climb above the poverty line.

Hypothesis 4: Improved sector and firm performance will be preceded by measurable firm-level outcomes, including increased and improved veterinary services, greater utilization of veterinary services, better herd health, increased stock turnover, higher average stock value, improved margins, a shift to

cattle as a business rather than a store of value, increased smallholder access to financial services, increased quality and differential pricing by quality, and new entrants into the meat packing industry.

4.3.3. Retail Input Services Hypotheses

Hypotheses regarding the retail input sector have to do with the impact of access to retail services on farmers, farm

Hypothesis 1: Project activities will lead to increased sector productivity and increased on-farm income.

Hypothesis 2: Smallholder farmers will benefit from project activities in the form of increased productivity, sales, and profits.

Hypothesis 3: If the firm-level impacts are achieved, they will result in improved welfare within smallholder households as indicated by higher household income, asset accumulation, and the ability of participating households that are poor to climb above the poverty line.

Hypothesis 4: Improved sector and firm performance will be preceded by measurable firm-level outcomes, including reduced inventory, input, and transportation costs; increased number of retail outlets; increased availability and sales of inputs; increased number of farmers accessing retail services and using farm inputs; increased farmer knowledge about inputs and their use; and increased access to embedded or bank finance.

5. FRAMEWORK OF ANALYSIS

As indicated earlier, the impact assessments of cotton, beef cattle, and retail services sectors will assess three different levels of impact: the sector (or market/region in the case of retail input distribution), participating smallholder MSEs, and MSE households. It will also assess selected outcomes of the program's activities in the three areas chosen. These levels of analysis are shown in Figures 7–9, along with the variables to be measured and the sources of information that will be utilized to obtain information on each variable.

Impacts and outcomes at the MSME and household levels can be quantified and thus will be measured primarily through the longitudinal survey. In contrast, impact and outcomes at the sector level tend to be more qualitative and discoverable through the informed perception of key informants. Consequently, they will be measured primarily with qualitative research (interviews and focus group discussions).

FIGURE 7. OUTCOMES AND IMPACTS TO BE MEASURED IN COTTON SECTOR

Level of Analysis	Outcome/Impact	Indicator of Change	Source of Information
Sub-sector	Spread of conservation farming	% of land under CFU # of farmers under CFU Extent of crop diversification	Interview (CFU)
	Better farmer knowledge of market opportunities & cultivation practices	Farmers' knowledge & attitudes	Interviews FGDs
	Improved access to finance	# of financial providers	Interviews FGDs
	Increased use of appropriate tillage service	% of land served	Interviews FGDs
	Output growth	Volume produced	Secondary data
	Increased competitiveness	Quality of cotton # of farmers using Dunavant seed % of crop rejected	Interviews
	Increased market participation by smallholders	% of output from smallholders	Secondary data? Interviews
	Improved producer price	FOB price in kwacha Producer price as % of FOB price	Secondary data Interviews
Smallholder MSEs	Increased production		
	Increased sales	Value of sales	Survey
	Increased profits	Sales minus cash costs	Survey
	Higher productivity	Output per ha.	Survey
	Investment in farm	Farm implements owned Draft animals owned	Survey Survey
MSE households	Higher income	Annual income from cotton sales Household consumption expenditure per capita	Survey Survey
	Increasing assets	Stocks of selected household assets	Survey

FIGURE 8. OUTCOMES AND IMPACTS TO BE MEASURED IN BEEF CATTLE SECTOR

Level of Analysis	Outcome/Impact	Indicator of Change	Source of Information
Sub-sector	Improved animal health	Mortality & morbidity	Secondary data Interviews
	Improved quality	Value/animal or per kg.	Interviews FGDs
	Improved access to finance	# of financial providers	Interviews
	Development of vet industry	# of vet services provided Types of vet services provided	Interviews FGDs
	Growth of beef industry	Volume of production	Secondary data
	Increased participation of smallholders	% of output from smallholders	Secondary data? Interviews
	Improved quality of smallholder beef	# of animals sold at feed lots Mean weight at sale Calving rate Smallholder beef graded choice	Interviews
	Improved price for smallholders	Producer price for smallholder as a % of price received by commercial producers	Interviews
	Improved ability to withstand shocks	Savings (preferably monetary, but also cattle) Uptake of insurance products	Interviews
Smallholder MSEs	Increased sales	# of animals sold	Survey
	Increased profits	Value of sales minus cash costs	Survey
	Higher productivity	Herd size Mortality Mean weight at sale Calving rate Quality (do any move up from standard to choice?)	Survey
MSE households	Higher income	Annual income from beef sales Household consumption expenditure per capita	Survey
	Increasing assets	Stocks of selected household assets	Survey

FIGURE 9. OUTCOMES AND IMPACTS TO BE MEASURED IN RETAIL INPUT SECTOR

Level of Analysis	Outcome/Impact	Indicator of Change	Source of Information
Market/Region	Increased input sales at wholesale & retail levels	Wholesale sales value Retail sales value	Interviews
	# of farmers accessing retail services	# of customers	Interviews FGDs
	Increased knowledge among retailers	# of promotional techniques learned & used Establishment of direct links to spraying services	Interviews
	# of retail outlets	# of retail outlets	Interviews FGDs
	Reduced cost of inputs	Price trends for major inputs (retail and wholesale)	Interviews
	Increased access by retailers to finance from seed companies &/or banks	Volume of production	Interviews FGDs
Smallholder MSEs	Increased farmer income	Sales of top 4 crops/agricultural products	Survey
	Increased yields	Output per ha. for top 4 crops	Survey
	Increased production	Sales of top 4 crops/products minus cash costs	Survey
MSE households	Higher income	Annual income from sales of relevant agricultural products Household consumption expenditure per capita	Survey
	Increasing assets	Stocks of selected household assets	Survey

6. RESEARCH DESIGN

The PROFIT impact assessment is a mixed-method (quantitative and qualitative), quasi-experimental,⁴ panel study that examines the same group of program participants (treatment group) and non-participants (control group) over a two-year period. It consists of two rounds of research: a baseline and a follow-up. The baseline research took place during August-November 2006, and the follow-up research is scheduled for the same time period in 2008.

The purpose of the baseline research is to establish the “original” conditions in the treatment and control groups in the three sectors studied as well as at the sector level. As such, the baseline focuses less on analysis and more on description of the two groups and sector conditions at the initiation of the assessment. The purpose of the follow-up is to determine whether and how conditions have changed among both groups and in the relevant sectors. In contrast to the baseline, the follow-up will focus more on analysis of change within and across treatment and control groups and less on description. The follow-

⁴ In contrast to experimental methods, quasi-experimental methods do not randomly assign persons to treatment or control groups but compare groups that already exist. Treatment group members are selected via random sampling of known program clients, while control group members are selected via random sampling of known non-clients.

up analysis will use a “difference-in-difference” approach meaning that changes in the values of target variables for program participants between the two surveys will be compared to similar changes for control group members to see whether impact can be inferred.

6.1. THE IMPACT SURVEY

The quantitative portion of the PROFIT impact assessment consists of a household-level survey of program participants and non-participants. (See Annexes 1–3 for copies of the surveys used in each of the three sectors.) The treatment group of program participants was selected randomly from lists of participants provided by PROFIT and its implementation partners. The control group of non-participants was selected randomly from separate districts selected using three criteria. First, they must reasonably match the treatment districts in terms of agricultural activities, size of land holdings, gender, and socio-economic status. Second, PROFIT must have no plans to expand to these districts over the next two years. Third, the districts must be sufficiently distant from the participant districts so as to minimize “spillover” of project benefits to control group members.

The follow-up survey two years hence will revisit as many of the respondents from the baseline round as possible. Accordingly, information was collected in the baseline that will facilitate finding and identifying respondents for the repeat interviews. Anticipating panel attrition (survey respondents die, move away, change their line of business, or decline to participate), the baseline survey over-sampled respondents in each sector so as to assure a sufficient number of respondents in the follow-up survey. So as obtain results at a meaningful level of significance, it was estimated that the final sample should include 1,200 smallholder MSEs. Assuming a panel attrition rate of 20 percent, the baseline, therefore, include 1,549 total respondents, including 919 respondents in the treatment group and 630 respondents in the control group.

To keep the logistics and costs of the impact assessment manageable, the research team decided to limit the study to selected districts and three local languages in the Central, Southern, and Northwest provinces. The three languages selected were English, Bemba, and Tonga. Survey questionnaires were originally written in English, translated into Bemba and Tonga, and then back-translated into English to ensure accuracy. In light of the above considerations, researchers settled on the sampling frame depicted in Table 1.

TABLE 1. IMPACT SURVEY SAMPLING FRAME

Sector/District	Participant	Control	Total
Cotton			
Choma	43	—	43
Sinazongwe	125	—	125
Pemba	141	—	141
Monze	—	222	222
Total Cotton	309	222	531
Beef Cattle			
Mazabuka	299	—	299
Choma	—	202	202
Total Beef Cattle	299	202	501
Retail Input			
Mkushi	311	—	311
Chibombo	—	206	206
Total Retail Input	311	206	517
Total	919	630	1,549

6.2. QUALITATIVE RESEARCH

The impact survey was complemented by qualitative research to improve understanding of: (1) the dynamics of smallholder participation in the cotton and beef value chains; (2) factors that affect the responsiveness of smallholders to changing demand; (3) how supporting markets (for inputs, services, and finance) support firm competitiveness; and (4) how PROFIT addresses these issues in the development of interventions intended to further the integration of smallholders into competitive value chains.

In light of these objectives, the qualitative research focused on answering the following research questions:

1. What are the incentives and risks for smallholders associated with upgrading and accessing new markets, specifically looking at incentives such as increased profitability or reduced transaction costs?
2. What are the incentives and constraints affecting affect smallholder participation in the value chains?
3. What are the incentives and risks for lead firms, input, and service providers and the extent to which the program is helping them develop and/or improve these activities?
4. What is the nature of cooperation and coordination among actors within the value chain as it relates to smallholder participation and competitiveness?

6.2.1. Qualitative Methodology

Qualitative data collection was conducted in three districts using semi-structured, key informant interviews and focus group discussions. Qualitative data was collected with a small sample of actors in the cotton and beef value chains as well as those involved with input distribution in the areas studied for that intervention. Discussion checklists of key issues were drawn up before implementation of the qualitative research. (See Annex 4 for copies of the discussion checklists.)

Qualitative data collection was undertaken during November 2006. The interviews and discussions were held with a number of stakeholders including smallholder MSE producers, leaders of producer groups, input suppliers, veterinarians, extension workers, lead firm buyers, and brokers (see Tables 2–3) in the three districts of Sinazongwe (cotton), Mazabuka (beef), and Mkushi (retail input supply). In all 44 persons participated in the qualitative research. Included in this number were 13 who participated in key informant interviews and 31 farmers who participated in focus group discussions.

TABLE 2. KEY INFORMANTS INTERVIEWED

Name	Position	Organisation and District
Peter Chikumba	Accountant	Landserve, Mkushi
Justin Mwaba	Assistant accountant	Landserve , Mkushi
Emmanuel Chisandi	Farmer	Mkushi
Tiby Chibala	Leader of producer group	Mazabuka
John Manyika	Agriculture extension officer	Mazabuka
Sidney Mweenda	Agent/broker	Mazabuka
Dominc Hachitema	Veterinarian	Mazabuka
Mr Morley Mujanse	Input supplies	Grey Hound Enterprises, Mazabuka
Dr Parsons	Veterinarian	Matobo clinic Mazabuka
Elijah Siapalanga	Distributor/agent broker	Sinazongwe
Danvah Sikuulu	Leader of producer group	Sinazongwe
Patrick Deenda	Farmer	Sinazongwe
George Barlow	Managing director - Lead firm	Great Lakes, Sinazongwe

TABLE 3. FOCUS GROUP PARTICIPANTS

Name	Position	District
Tiby Chibala	Livestock farmer	Mazabuka
Anorid Mwanamufumu	Livestock farmer	Mazabuka
Happy Hajauta	Livestock farmer	Mazabuka
David Moonga	Livestock farmer	Mazabuka
Louis Mweene	Livestock farmer	Mazabuka
Geoffrey Moonga	Livestock farmer	Mazabuka
Mwila Pardie	Livestock farmer	Mazabuka
Dombe Simaumbwe	Cotton farmer	Sinazongwe
Adam Sikabulo	Cotton farmer	Sinazongwe
Kelvin Musumbwani	Cotton farmer	Sinazongwe
Joseph Chiepshi	Assorted farmers	Sinazongwe
Derick Siakoli	Assorted farmers	Sinazongwe
Beatrice Sinzala	Contact farmer	Sinazongwe
Lloyd Siachunga	Cotton farmer	Sinazongwe
Stephen Siabbozya	Cotton farmer	Sinazongwe
Enock Siatwiinda	Cotton farmer	Sinazongwe
Ringson Zunga	Cotton farmer	Sinazongwe
Patrick Deenda	Cotton farmer	Sinazongwe
Japhet Mulenga	Cotton farmer	Sinazongwe
Queen Samboko	Cotton farmer	Sinazongwe
Danvah Sikuulu	Farmer coordinator	Sinazongwe
Spears Chinika	Cotton farmer	Sinazongwe
Shelly Chiyowela	Cotton farmer	Sinazongwe
Charity Shinka	Farmer	Mkushi
Loveness Chisandi	Farmer	Mkushi
Rosemary Walubita	Farmer	Mkushi
Ernest Chilale	Farmer	Mkushi
David Sinkala	Farmer	Mkushi
Enock Ngoma	Farmer	Mkushi
Emmanuel Chisandi	Farmer	Mkushi
Amos Kaputula	Farmer	Mkushi

BASELINE RESEARCH FINDINGS

7. DEMOGRAPHIC COMPARISONS OF TREATMENT AND CONTROL GROUPS

The validity of the participant and control farmer comparisons depends in large part on selecting participants in each group sharing similar demographic characteristics. The more similar the demographic characteristics the greater confidence we have comparing outcomes and impacts between the two groups.

In addition to providing clues as to the similarity (and comparability) of the treatment and control groups, certain demographic indicators (e.g., those related to quality of life, housing, access to services, and household assets) are also important impact indicators. To the extent the participant farmers' quality of life changes favorably over time relative to control farmers, the greater the evidence of program impact.

This section compares the treatment and control groups on six characteristics: demographic profile, quality of life, housing, access to services, and asset ownership.

7.1. DEMOGRAPHIC PROFILE

Cotton: Participant and control farmers in the cotton sector are predominantly male, approximately 40 years of age, from a household of eight persons, and with either an upper primary or junior secondary education (Table 4). Farming comprises the single largest source of income in both groups equaling nearly 90 percent among participant farmers and 80 percent among control farmers.

Beef: Both treatment and control farmers in the beef cattle sector are predominantly male, around 40 years of age on average, and tend to have an upper primary or junior secondary education. Farming constitutes the primary source of income for 89 percent of participant farmers and 77 percent of control farmers with gardening and business providing additional important sources of income. Overall, the demographic profiles for participant and control beef farmers are broadly similar with some minor to moderate variation in terms of gender, education, and sources of income.

Retail Services: Participant and control farmers in the retail sector are predominantly male, between 37–44 years of age, from a household of 7 persons, and have a primary education. Participant farmers tend to be older than control farmers, whereas a higher percentage of control farmer are male. Farming is the most important source of income for nearly 100 percent of both respondent groups. Approximately 95 percent of farmers interviewed about retail services grow maize as their primary crop followed to a lesser extent by groundnuts and soyabeans.

TABLE 4. DEMOGRAPHIC PROFILE⁵

	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total
	Cotton Farmers			Cattle Farmers			Retail		
Male	78.0	75.2	76.8	85.3	78.2	82.4	59.5	72.3	64.6
Female	22.0	24.8	23.2	14.7	11.8	17.6	40.5	27.7	34.5
Age	38.1	40.8	39.2	44.2	44.0	44.1	43.9	36.7	41.0
Household Size	8.4	7.6	8.1	9.1	9.6	9.4	7.1	6.9	7.0
Education									
Lower Primary	10.0	10.4	10.2	12.0	11.9	12.0	23.2	16.0	20.3
Upper Primary	45.3	45.0	45.2	42.1	50.5	45.5	33.4	46.1	38.5
Jr. Secondary	28.2	28.4	28.2	27.8	24.3	26.3	18.0	17.0	17.6
Sr. Secondary	9.7	10.8	10.2	6.7	6.9	6.8	9.3	9.7	9.5
Higher	0.3	0.9	0.6	1.0	2.5	1.6	1.6	1.5	1.5
Major Source of Household Income									
Business	4.9	6.8	5.6	5.0	4.5	4.8	1.3	0.5	1.0
Farming	89.3	77.0	84.2	73.2	61.4	68.5	97.7	98.1	97.9
Gardening	3.2	10.8	6.4	15.4	29.2	21.0	0.0	0.0	0.0
Other	2.6	5.4	3.8	5.7	5.0	5.4	1.0	1.5	1.2

7.2. QUALITY OF LIFE

Cotton: Participant and control farmer households spend an almost identical amount on both a daily and yearly basis (Table 5). A large majority of both groups consume nearly three meals per day. Food crops tend to last the whole year for only a minority of farmers in both groups, although crops are more likely to last the entire year among control than participant farmers. When food crops run out, approximately 80 percent in both groups rely on food purchased with their own money to make up the difference with another 10–15 percent relying on food gifts from food aid programs.

Beef: Participant farmer households spend more on average per year and per day than control farmers, but there is no difference in terms of the number of whole meals eaten per day. Food crops tend to last the whole year for a higher percentage of control farmers. When food crops do run out, both groups rely overwhelmingly on food purchased with their own money to make up the difference, although a much higher percentage of control farmers also rely on gifts from food aid programs.

Retail: Participant and control farmer households spend an almost identical amount on both a daily and yearly basis with control farmers spending slightly more in both cases. Curiously, retail survey respondents spend more on average than either cotton and cattle survey respondents, despite performing

⁵ Tables do not include the percentage of non-responses. For this reason, and due to rounding, column totals may not add up to 100 percent.

relatively worse on most other well-being indicators. No ready explanation exists for this finding. Further inquiry will be performed in the follow-up study to confirm and explain this finding.

Approximately one-half of participant and control farmers eat three meals a day with another one-third in each group eating two meals a day. Harvested food lasts 12 months in approximately 50 percent of participant and control households. When food crops run out, both groups rely predominantly on purchased food to make up the difference.

TABLE 5. QUALITY OF LIFE INDICATORS

	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total
	Cotton Farmers			Cattle Farmers			Retail		
Yearly per capita expenditures (000's kwacha)	216	216	216	297	201	258	283	297	289
Daily per capita expenditures (kwacha)	591	590	591	707	531	707	774	814	792
Number of whole meals eaten yesterday	2.8	2.9	2.8	2.8	2.7	2.7	2.5	2.6	2.5
Food crops harvested last year lasting 12 months (%)	80.6	67.1	75.0	75.9	82.7	79.4	52.7	58.3	54.9

7.3. HOUSING CONDITIONS

Cotton: Approximately one-third of participant homes are made from low-quality mud or cow dung compared to nearly two-thirds of control homes (Table 6). A large percentage of homes in both groups (including a majority of participant homes) are made from other materials. Nearly two-thirds to three-quarters of participant and control farmers have roofs made of grass/straw/thatch (Table 7). Most of the remaining farmers in both groups have roofs made from iron sheets.

Beef: Approximately one-third of both participant and control homes are made from mud or cow dung. The large majority in both groups have roofs made of grass, straw, or thatch followed in importance by iron sheets. Two-thirds to three-quarters of participant and control farmers have roofs made of grass/straw/thatch. Most of the remaining farmers in both groups have roofs made from iron sheets.

Retail: Eighty to 90 percent of homes in both groups are made of mud or cow dung. A similarly high percentage of roofs in both groups are made of grass, straw, or thatch with most of the balance in both groups consisting of iron sheet roofs. Overall, participant farmers report slightly better housing conditions as measured by wall and roof materials.

TABLE 6. MATERIAL OF HOUSE WALL

	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total
	Cotton Farmers			Cattle Farmers			Retail		
Mud or Cow Dung	32.0	66.2	46.3	34.8	33.7	34.3	83.0	93.7	87.2
Concrete Bricks	11.7	8.6	10.4	8.7	9.4	9.0	7.4	2.0	5.2
Iron Sheets	0.3	0.0	0.2	0.3	0.0	0.2	0.6	0.0	0.4
Stone	0.0	1.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Tiles	0.0	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.0
Wood	0.0	0.0	0.0	0.0	0.5	0.2	1.0	0.0	0.6
Grass	1.6	0.5	1.1	0.7	2.5	1.4	0.3	1.5	0.8
Other	54.4	23.0	41.2	33.4	50.5	40.3	7.7	2.9	5.8

TABLE 7. MATERIAL OF HOUSE ROOF

	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total
	Cotton Farmers			Cattle Farmers			Retail		
Grass/Straw/Thatch	62.8	74.3	67.6	66.9	78.2	71.5	82.6	88.8	85.1
Iron Sheets	35.3	24.8	30.9	30.1	19.3	25.7	16.7	10.7	14.3
Tiles	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.2
Slates/Concrete/Cement	0.6	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Wood/Planks	0.6	0.0	0.4	0.3	1.0	0.6	0.0	0.0	0.0
Other	0.6	0.9	0.8	1.0	1.0	1.0	0.3	0.5	0.4

7.4. ACCESS TO SERVICES

Cotton: Fewer than 5 percent of homes in both groups receive piped water either into the house or into the community during the dry season (Table 8). Rather, a majority in both groups rely on “other” sources of water during the dry season. Private wells are relatively more important to control households and ponds/rivers/canals are relatively more important to participant groups. A similar trend continues into the wet season during which time other sources decrease slightly in importance.

The majority of both groups use ordinary pit latrines, although this is more pronounced among participant farmers than control farmers (Table 9). Control farmers, on the other hand, are significantly more likely to lack access to any type of toilet facility.

Paraffin lamps are the most common type of lighting in both participant and control households, although more so in control than participant households (Table 10). Candles are the second, and only other important, source of lighting among respondent households.

Beef: Around 10–15 percent in each group receives piped water into their communities during the dry and wet seasons and another 5–12 percent has access to a private well. The majority of the remaining households get their water from a pond, river, canal, or other source.

The large majority in both groups use an ordinary pit toilet, although anywhere from 14–20 percent in either group have no access to a toilet or latrine.

Paraffin lamps are the most common type of lighting in both treatment and control households, although more so in control households followed in importance by candles.

Retail: Private or public wells are the primary source of drinking water during the dry and wet seasons among both groups, although more important among control than among participant farmers. Participant farmers are far more likely to rely on ponds, rivers, or canals for their drinking water during the dry season. A miniscule percentage of both groups receive piped water in their communities or homes. A near unanimity of both groups use ordinary pit latrines.

Paraffin lamps are the most common source of lighting in nearly three-quarters of households across both groups, although nearly 60 percent of control farmers use diesel lamps as a source of light compared to just over one-half who use paraffin lamps. By comparison, a relatively small percentage of participant farmers use diesel lamps. Candles are also used for light by between about one-quarter of control farmers and one-third of participant farmers.

TABLE 8. MAIN SOURCE OF DRINKING WATER IN THE DRY SEASON

	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total
	Cotton Farmers			Cattle Farmers			Retail		
Piped water within the community	3.2	0.5	2.1	15.1	10.4	15.1	1.0	0.5	0.8
Piped outside this community	1.0	0.9	0.9	0.0	0.5	0.0	0.6	0.0	0.4
A private well in the community	6.8	17.1	11.1	5.0	11.9	5.0	30.5	41.3	34.8
Water tank in the community	0.0	0.5	0.2	0.0	0.5	0.0	2.9	0.5	1.9
Pond/river/canal	19.4	3.6	12.8	29.1	25.2	29.1	37.9	0.5	23.0
Public well in the community	8.4	26.6	16.0	4.3	16.3	4.3	19.9	35.9	26.3
Other	61.2	50.9	56.9	46.5	35.1	46.5	7.1	21.4	12.8

TABLE 9. TYPE OF TOILET FACILITY

	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total
	Cotton Farmers			Cattle Farmers			Retail		
Flush latrine outside	0.3	0.0	0.2	0.0	1.0	0.4	0.0	0.0	0.0
Flush latrine inside the residence	0.6	0.5	0.6	0.7	0.5	0.6	0.6	1.5	1.0
Ordinary pit latrine	74.1	56.3	66.7	81.6	73.3	78.2	94.6	95.2	93.7
VIP (Ventilated improved pit latrine)	11.3	11.7	11.5	3.0	4.5	3.6	1.5	1.9	1.0
None	13.6	30.5	21.1	0.0	0.0	0.0	2.1	1.6	2.9

TABLE 10. TYPE OF LIGHTING IN HOUSE

	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total
	Cotton Farmers			Cattle Farmers			Retail		
Candle	35.0	28.8	32.4	34.8	13.9	26.3	34.7	27.2	31.7
Paraffin Lamp	68.9	85.6	75.9	71.2	89.6	78.6	83.9	54.9	72.3
Diesel Lamp	3.9	0.9	2.6	6.4	0.0	3.8	13.2	60.7	32.1

7.5. ASSET OWNERSHIP

Cotton: A large majority of households in both groups owns a bicycle, and a majority of control households and a near majority of participant households owns a radio (Table 11). Nearly 10 percent of both groups own a TV, while a small to negligible percentage own stoves, cell phones, telephones, sewing machines, or motor vehicles. Radio ownership is the only asset category in which there is a significant different between participant and control farmers.

Beef: A majority of households in both groups owns a bicycle. Less than a majority, although still a significant percentage, owns radios. Fewer own televisions and even fewer still own cell phones. Ownership of stoves, land-line telephones, sewing machines, and motor vehicles is negligible in both groups. Participant farmers are more likely to own radios and televisions but less likely to own bicycles, although the differences are not overly large. Ownership of the remaining assets is similar across the remaining asset categories.

Retail Services: A large majority of households in both groups own a bicycle, a majority in both households owns a radio, and approximately 20 percent own a TV. Nearly 10 percent of both groups own a cell phone while another 10 percent of participant farmers own a sewing machine. Ownership of sewing

machines is higher among participant farmers, whereas ownership of bicycles is higher among control farmers.

TABLE 11. OWNERSHIP OF ASSETS

	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total
	Cotton Farmers			Cattle Farmers			Retail		
Gas/Electric Stove	0.3	0.0	0.2	0.3	0.5	0.4	0.0	1.0	0.4
TV	10.7	11.3	10.9	21.7	14.4	18.8	19.6	17.5	18.8
Radio	47.9	70.7	57.4	48.5	37.6	44.1	58.2	55.3	57.1
Cell Phone	6.5	6.3	6.4	13.7	7.4	11.2	8.7	9.2	8.9
Telephone	0.3	0.0	0.2	0.0	1.0	0.4	0.0	0.0	0.0
Sewing Machine	5.5	3.6	4.7	4.0	5.4	4.6	11.9	3.9	8.7
Car/Pickup	0.6	0.5	0.6	3.0	1.5	2.4	0.3	0.0	0.2
Motorcycle	1.0	0.5	0.8	0.7	1.0	0.8	1.0	0.0	0.6
Bicycle	69.6	70.3	69.9	57.9	75.2	64.9	69.8	83.0	75.0
Truck/Lorry	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.4	1.5

7.6. SUMMARY OF DEMOGRAPHIC CHARACTERISTICS

Overall, participant and control farmers in all three sectors share similar demographic and socio-economic profiles. There is some variation across the groups in each sector, but this level variation appears well within the range of normal variation one might have expected ahead of time of groups selected in this fashion. In other words, the amount of variation across groups is not of the magnitude that would raise significant concerns about the similarity and comparability of the treatment and control groups.

8. BASELINE FINDINGS IN COTTON SECTOR

8.1. COTTON PRODUCTION

A majority of cotton farmers in both participant and control groups plant 1 hectare or less of land with the mean land dedicated to cotton equal to approximately 1.5 hectares for both groups (Table 12). Farmers cite the lack of access to credit as a constraint in their ability to expand the hectareage of cotton production.

On these relatively small plots of land, participant and control farmers harvested on average 1,000 kilograms of cotton in the most recently completed growing season. According to the farmers interviewed, however, the level of cotton production fluctuates from season to season owing to erratic rainfall patterns; poor management practices during planting, tillage, spraying, weeding and harvesting (e.g., inappropriate spraying practices led to infected cotton and consequently low yields); the high cost of production and inputs,⁶ especially chemicals; and resistance to adopting new farming practices. (Some

⁶ With regards to production costs, farmers estimate the productions costs for a single hectare of land to be as follows: plowing at K90,000, weeding at K150,000, spraying at K40,000, picking at K60,000, cutting at K70,000, and delivery (oxcart 10 bags) at K50,000.

farmers felt that conservation farming was labor intensive and the use of animal draft power was quicker in terms of land preparation.) According to farmers and other value chain participants, cotton production during the 2005/2006 season was higher than then 2004/2005 season due to good rains and improved farming practices.

The majority of participant and control farmers sold cotton valued at between K450,000 and K2,000,000 in the previous year for a mean sales value of approximately K1,200,000 in each group. Cotton farmers in the two groups command an approximately equal price for their cotton at K1,250 per kilogram with the sales price typically between K1,101-K1,500 per kilogram. Farmers interviewed generally felt that most of their earnings from cotton were utilized to purchase livestock (cattle, goats and chicken) and other household assets, such as roofing sheets.

Over two-thirds of cotton farmers used between 10–30 kilograms of seed last year. The mean volume of cotton seed used ranged from 22 kilograms among participant farmers to 26 kilograms for control farmers.

TABLE 12. CHARACTERISTICS OF COTTON PRODUCTION

	Participant	Control	Total
Area planted with cotton (hectares)	1.5	1.3	1.4
Total farm area (hectares)	6.8	7.7	7.2
Volume of cotton harvested (kgs)	990.6	999.2	994.1
Value of cotton sales (kwacha)	1,240,935	1,239,409	1,240,312
Sale price per kg of cotton	1254.63	1235.33	1246.64
Amount of cotton seed used (kgs)	26.4	22.1	24.1
Amount of fertilizer used (kgs)	2.8	2.7	2.8

8.2. INPUT PURCHASES

Cotton production depends on the purchase and use of production inputs. It is expected that over time, cotton producers participating in or benefiting from PROFIT activities will increase their purchases and use of key production inputs.

Along these lines, cotton farmers in both participant and control groups purchased a variety of inputs over the last growing cycle (Table 13). Approximately 90 percent or more in both groups purchased fertilizer and draft animals, slightly less than one-half in both groups purchased labor, and another 40 percent purchased farm implements and equipment. A large percentage in both groups, although a significantly higher percentage of control farmers, purchased seeds. Other inputs purchased by between 10–30 percent of farmers in both groups include tillage services, harvesting services, repair services, and crop spraying.

TABLE 13. COTTON INPUTS PURCHASED

	Participant	Control	Total
Fertilizer	97.1	94.6	96.0
Cotton Seed	42.4	70.7	54.2
Tillage Services	29.8	29.3	29.6
Crop Spraying	10.0	11.3	10.5
Weeding Services	35.0	27.5	31.8
Harvesting Services	23.9	18.0	21.5
Banking Services	0.3	0.5	0.4
Insurance Services	0.0	0.0	0.0
Farm Implements and Equipment	39.9	40.1	38.2
Repair Services	18.1	23.4	20.3
Draft Animals	91.9	89.6	91.0
Hired Labor	47.2	46.4	46.9

In terms of cash purchases, participant farmers who purchased inputs tended to spend more on all inputs than control farmers who purchased inputs, with the exception of repair services (Table 14).

TABLE 14. MEAN PURCHASES FOR COTTON INPUTS (KWACHA)

	Participant	Control	Total
Fertilizer	205,943	149,856	184,061
Cotton Seed	80,376	44,398	61,537
Tillage Services	153,847	118,000	139,415
Crop Spraying	75,068	54,431	66,166
Weeding Services	159,014	78,355	130,172
Harvesting Services	154,838	69,976	124,750
Farm Implements and Equipment	297,222	261,608	281,802
Repair Services	49,943	73,948	61,475

The major input suppliers providing seeds and chemicals to the cotton farmers are Dunavant and Great Lakes, though the latter is relatively new to the market. A good number of farmers preferred Dunavant to Great Lakes when accessing inputs, because Dunavant has been in the cotton business for more than five years.

The choice of where to purchase production inputs depends not only on the price of inputs but also, in the case of PROFIT clients, on the price paid by the lead firm for final product. Depending on the market forces, input suppliers determine input prices, which in the case of lead firms is fixed at headquarters and passed down to the distributors' depots in the relevant communities. For instance, a Dunavant manager said that it sells both basic and commercial seed for K36,000 per 15 kg bag of seed and a 1 hectare chemical pack is sold at K130,000. He also confirmed that cotton farmers had no right to negotiate for better prices of inputs but had to buy inputs at the set prices. (The Zambian Parliament is in the process of implementing a law that will regulate the sales price of cotton and impose parameters on input suppliers selling to smallholder farmers.) Farmers did cite variation in input prices from supplier to supplier, although they tended to believe that sales prices were very low compared to input prices.

8.3. EMPLOYMENT

Smallholder cotton farmers hire on average about 12 individuals with participant farmers hiring on average 13 individuals and control farmers hiring on average 10 individuals (Table 15). Notwithstanding double digit number of persons hired each year by farmers in both groups, hired laborers work on average only between 7–9 days in each group. Less than 3 percent of hired laborers in each group work more than one month during the year. Of farmers who hire labor, participant farmers spend significantly more on average than control farmers by K202,000 to K127,000.

TABLE 15. NUMBER OF INDIVIDUALS HIRED

	Participant	Control	Total
Number of individuals hired	13.0	10.0	11.8
Total days worked	8.59	7.35	8.06
Total amount paid (kwacha)	202,424	126,520	170,665

8.4. COTTON MARKET

Nearly all of the participant farmers sold their cotton to the lead firm Dunavant (Table 16). In contrast, control farmers sold approximately two-thirds of their cotton to processors and another one-third to a lead firm. In nearly 95 percent of sales by both groups of farmers the buyer did not pay on delivery but at some time after delivery. Only 3 percent of sales were paid for at the time of delivery.

TABLE 16. TYPES OF COTTON BUYERS

	Participant	Control	Total
The Lead Firm	98.4	37.8	73.1
A Processor	0.3	60.4	25.4

There are three lead firms in the cotton value chain that purchase from smallholders: Dunavant, Great Lakes and a recently established firm called Zambia Alliance. Despite having a ready market, smallholder cotton producers typically receive low prices that are set only after the harvest is completed. In the recent past, the price of cotton has been adversely affected by changes in market forces, in particular the appreciation of the Kwacha. Cotton farmers interviewed felt cheated by the lead firms and expressed reluctance to grow cotton this farming season.

Cotton farmers interviewed also felt that cotton production was not very profitable due to the high costs of production, including land preparation; high input costs; and labor costs for weeding, picking, and harvesting. Some farmers complained that the actual cost of inputs received on credit was not transparent. Farmers also complained about the lack of financial institutions offering credit facilities that would enable them to buy inputs on cash basis. This, they felt, would allow them to sell their cotton to firms offering the best selling price as opposed to the firms that were willing to offer them embedded credit for inputs.

Farmers were negatively affected by the lower sales price of cotton. This left many farmers thinking that Dunavant had been dishonest with them since it did not provide information about the sales price of cotton prior to the harvest. Great Lakes, on the other hand, paid farmers for the cotton before the cotton was delivered. (Great Lakes apparently incurred high transaction costs particularly in terms of transportation—it lacked transport capability and had to outsource transportation of product—and overhead.) In contrast, farmers generally rated the level of trust with input distributors to be high.

The dissatisfaction with cotton buyers expressed in interviews was reflected in the survey in which over one-third and nearly one-half of participant and control farmers said that they were not satisfied with cotton buyers (Table 17). Still, nearly one-third of participant farmers, most of who sold to lead firms including Dunavant, said that they were very satisfied with cotton buyers, compared to an approximately equal percentage of control farmers.

TABLE 17. SATISFACTION WITH COTTON BUYERS

	Participant	Control	Total
Very Satisfied	30.1	28.8	29.6
Moderately Satisfied	29.1	23.9	26.9
Not Satisfied	39.2	45.0	41.6

Lead firms are not able to reach as many farmers as they would like as a result of poor road infrastructure in certain communities. Most farmers in turn cannot afford to hire vehicles to transport cotton. The poor state of the roads raises transaction costs and producers and lead firms alike. In the farmers' case, the high cost of transport adversely affects profit margins. In the lead firms' case, the cost of the wear and tear on their vehicles from transport is recouped in the prices charged for inputs.

Lead firms have few or no storage facilities in the farming communities. The lack of storage facilities results in lower grades of cotton and lower sales prices. Notwithstanding, less than 4 percent of cotton brought to market by either participant or control farmers was rejected by buyers.

The lack of proper storage facilities poses a greater challenge to the lead firms to improve such infrastructure, as this will have benefits for their business in terms of better delivery of cotton, improved communications with farmers, and higher loan recovery. A manager from Great Lakes confirmed, for example, that the lack of transport and storage facilities negatively affected the recovery of inputs sold on credit.

8.5. HORIZONTAL LINKAGES

Horizontal linkages exist within the cotton sector, although they are few. Fewer than 15 percent of participant and control farmers belong to a producer groups (Table 18). Four percent in each group belong to a second farmers' group. Control farmers are much more likely to attend producer group meetings regularly.

In terms of benefits, approximately one half of members in each group cite easy access to inputs as a primary benefit. The second most mentioned benefit by nearly one-third of participant farmers and one-quarter of control farmers is that producer groups are an important source of production and market information. Control farmers also cite easy access to credit as an important benefit, while participant farmers cite easy access to extension services.

TABLE 18. MEMBERSHIP IN PRODUCER GROUPS AND BENEFITS OF GROUP MEMBERSHIP

	Farmer Group 1			Farmer Group 2		
	Participant	Control	Total	Participant	Control	Total
Group Membership	14.9	11.3	13.4	4.2	3.6	4.0
Benefits						
Easy Access to Inputs	47.8	52.0	49.3	46.2	12.5	33.3
Easy Access to Credit	6.5	12.0	8.5	7.7	0.0	4.8
Easy Access to Extension Services	10.9	4.0	8.5	7.7	12.5	9.5
Easier to Sell Farm Produce	2.2	16.0	7.0	0.0	12.5	4.8
Source of Production and Market Information	32.6	24.0	29.6	30.8	25.0	28.6
Easier to Negotiate for Good Price	0.0	0.0	0.0	0.0	12.5	4.8
Easier to Organize Transport	0.0	0.0	0.0	0.0	0.0	0.0
Frequency of Attendance						
Always	58.7	76.0	64.8	46.2	100.0	65.0
Sometimes	26.1	24.0	25.4	23.1	0.0	15.0
Rarely	13.0	0.0	8.5	30.8	0.0	20.0

8.6. VERTICAL LINKAGES

Important actors in the cotton value chain include lead firms and agents. Agents offer a variety of services to smallholders, including input supply, extension services, and cotton purchases. The level of trust between farmers and agents appears to be high due to the existence of solid communication and information sharing channels between the two.

By comparison, the relationship between the smallholders and lead firms is weaker. Trust between the two value chain actors is low for a few reasons, including a high default rate on embedded loans, inadequate communication, and non-transparent information on the pricing of inputs and cotton. Smallholder cotton farmers have little contact with lead firms and thus lack information regarding cotton grading and cotton prices after harvest. If farmers have any grievances, moreover, there is no channel by which they can express their concerns. Almost all dealings between smallholders and the lead firms in terms of cotton production are conducted through the agents.

Notwithstanding, both Dunavant and Great Lakes have taken steps to strengthen links with smallholders via extension and other outreach programs. Dunavant has recently introduced a yields improvement program that involves training in the five stages of cotton growing, which include land preparation, planting, plant population, weeding, and spraying. One female cotton farmer interviewed identified this as an encouraging program that had given her the necessary knowledge to increase the area of cultivation from 1 lima to 1 hectare.⁷ Similarly, Great Lakes, with the help of PROFIT, established a spraying program in which a community member has been trained to provide spraying services to farmers.

⁷ A lima is equal to about a quarter of a hectare or slightly more than half an acre of land.

Private extension services are mainly offered through agents who work on contract with cotton lead firms, especially Dunavant. Through the agents, Dunavant has created depots located in places easily accessible to all smallholder cotton farmers. Services that agents provide to smallholders include weekly field visitations and other meetings. During field visits, agents inspect and observe production, note any problems, and give advice and instructions. (For example the agent may provide advice on which chemicals to spray for specific diseases.) In addition, agents hold meetings with farmers at all stages from seed provision to planting, management and harvesting. These meetings are typically held at the agent's house.

8.7. FARMING PRACTICES

Successful upgrading of smallholder cotton production will require participant farmers to adopt a variety of cotton farming practices, including conservation farming and horizontal collaboration. A majority of control farmers already use conservation farming practices compared to 40 percent of participant farmers (Table 19). Of the specific conservation farming practices, the most commonly adopted is early land preparation by 20–30 percent in the two groups. Over 20 percent of control farmers also practice minimum tillage with animal power and crop rotation, and between 14–18 percent practice improved fallow or minimum tillage with hand hoes. Among participant farmers, between 13–17 percent practice crop rotation, minimum tillage with animal power or hand hoes, and improve fallow.

Control farmers are more likely to engage in horizontal cooperation than participant farmers. Approximately one-quarter of control farmer collaborate to share the purchase of inputs or jointly sell products, and another one-fifth acquire services from other farmers. By comparison, 16 percent of participant farmers acquire services from other farmers or jointly sell products, and only 10 percent coordinate with other farmers to purchase inputs.

TABLE 19. COTTON FARMING PRACTICES

	Participant	Control	Total
Conservation Farming Practices			
Conservation Farming Practices	40.1	55.9	46.7
Early Land Preparation	22.3	29.7	25.4
Minimum Tillage w/ Hand Hoes	14.6	14.4	14.5
Minimum Tillage w/ Animal Power	14.9	21.6	17.7
Minimum Tillage w/ Mechanized Means	1.6	1.3	1.5
Crop Rotation	16.2	23.4	19.2
Green Manuring	4.9	9.9	7.0
Improved Fallow	13.6	17.6	15.3
Horizontal Cooperation			
Shared Purchases of Agricultural Inputs	10.4	25.2	16.6
Acquisition of Service from Other Farmers	16.2	18.0	16.9
Shared Sales of Produce	15.9	26.1	20.2

Various stakeholders interviewed felt that farming practices have changed overtime among smallholder cotton farmers. In the past, smallholders used animals for plowing, but after receiving training in conservation farming techniques such as potholing, the use of animals is slowly fading (although a

shortage of draft animals might also have contributed to this change). Conservation farming has helped smallholders to increase yields even when there is little rain as compared to cases when they used traditional forms of plowing. However some farmers still prefer to use animal draft power as potholing is considered to be labor intensive.

8.8. SOURCES AND USE OF MARKET INFORMATION

Nearly two-thirds of cotton farmers in both participant and control groups access and use information on cotton farming (Table 20). Participant farmers are significantly more likely than control farmers to access information via cell phone (26 percent to 15 percent), while control farmers are moderately more likely to access information via the radio (56 percent to 66 percent). Almost no farmers in either group use the internet to get information on cotton farming. Approximately 60 percent of farmers in both groups also say that there is an information center in their community where they can get information on cotton farming.

TABLE 20. SOURCES AND USE OF INFORMATION ON COTTON PRODUCTION

	Participant	Control	Total
Access and Use Information	68.9	64.9	67.2
Cell Phone	26.2	14.9	21.5
Internet	0.7	1.0	0.4
Radio Programs	56.3	66.2	60.5
Information Center	61.2	64.9	62.7

When asked about specific sources of information accessed, nearly 90 percent of participant farmers identified Dunavant or other agribusiness companies compared to 40 percent of control farmers (Table 21). The only other important specific source of information identified is unspecified “other” sources by around one-third of control farmers.

TABLE 21. SOURCES OF INFORMATION USED

	Participant	Control	Total
Dunavant/Agribusiness Company	86.9	40.3	68.1
Ministry of Ag. Extension Officers	3.3	10.4	6.2
PROFIT	4.2	0.0	2.5
Radio, TV	0.5	4.9	2.2
Other Extension Officers	0.0	2.8	1.1
Seminars and Meetings	0.0	2.8	1.1
Input Suppliers	0.0	1.4	0.6
Shops Supplying Inputs	0.0	0.7	0.3
Posters	0.0	0.0	0.0
Newspapers, Magazines	0.0	0.0	0.0
Producer Association	0.0	3.5	1.4
Buyers of Crops	0.0	2.1	0.8
Other	10.8	36.8	21.3

Nearly two-thirds of participant farmers find information on cotton farming very useful compared to approximately one-half of control farmers, whereas control farmers are significantly more likely to rate information on cotton farming as not useful (Table 22).

TABLE 22. SATISFACTION WITH ADVICE, TRAINING, AND/OR INFORMATION RECEIVED FROM DUNAVANT AND OTHER AGRIBUSINESS COMPANIES

	Participant	Control	Total
Very Useful	75.1	58.6	71.2
Moderately Useful	19.5	24.1	20.6
Not Useful	5.4	17.2	8.2

9. BASELINE FINDINGS BEEF SECTOR

9.1. THE BUSINESS

Among smallholder farmers, livestock farming is widely practiced. The most common livestock reared are cattle and goats. Cattle production is relatively low across all smallholder farmers. As seen in Table 23, participant and control farmers manage small herds of cattle totaling an average of 0.9 heifers, 1.6 bulls, 2.1 steers, and 4.0 cows among participant farmers compared to 1.2 heifers, 1.2 bulls, 1.7 steers, and 3.5 cows among control farmers. The majority of both groups own 0 heifers, 0 bulls, and 1–5 cows. Nearly one-half of each group own 1–5 steers, although another 40 percent in both groups own 0 steers.

Taking into account births, deaths, and purchases over the past 12 months, the average herd size shrank by 0.35 cattle among participant farmers compared to .33 cattle among control farmers. When thefts are considered, the average herd size shrank even further by .42 cattle among participant farmers and .49 cattle among control farmers.

Over 90 percent of both participant and control farmers did not sell any beef cattle in the past year. Cattle farmers interviewed perceived that the high costs of production and accompanying operational costs generally outweighed the benefits from cattle production and sales.

Of the 39 participant farmers and 48 control farmers who sold cattle during the past year, 90 percent of the former and 70 percent of the latter sold to local traders. The remainder either sold to processors or to cattle brokers. In only one of these cases did the buyers reject the cattle due to poor quality. Just over 90 percent of sales were made at the spot price with the remaining 10 percent sold on contract. Eighty percent of cattle sales in both groups took place at the farm via a trader or agent with another 10 percent taking place at the abattoir, 5–8 percent at the butchery, and 2–3 percent at the market. No cattle sales took place at a feed lot or at an auction.

In terms of overall farm land, approximately one-third of both participant and control group members operate farms totaling from 0–5 hectares of land, and slightly over one-half of both groups operate farms totaling from 0–19 hectares of land. The mean land holdings for the two groups are 16.9 and 17.4 hectares respectively.

TABLE 23. BUSINESS CHARACTERISTICS OF BEEF PRODUCERS

	Participant	Control	Total
Total farm area (hectares)	16.9	17.4	17.1
Number of heifers	0.9	1.2	1.0
Number of bulls	1.6	1.2	1.4
Number of steers	2.1	1.7	2.0
Number of cows	4.0	3.5	3.8
Number of heifers sold	.09	.06	.08
Number of bulls sold	.06	.08	.07
Number of steers sold	.04	.09	.06
Number of cows sold	.06	.19	.11

There are several reasons for low production rates among cattle farmers. Among the major factors that affect cattle production levels, farmers cited diseases, especially corridor disease, poor extension and veterinary services, high input costs, the lack of financial resources, and breed type.

In addition to the factors inhibiting smallholder farmers from increasing cattle productivity, the private veterinarians interviewed identified other constraints to production. According to a government veterinarian, smallholder cattle producers lack the interest in investing financially in livestock as a business, lack relevant knowledge and management skills, and lack access to technology that can be used to improve cattle breeding and productivity. The embedded traditional practices and poor resource base of the smallholder livestock farmers are perceived by the government veterinarian as having had a negative impact on the adoption rate of good cattle management and feeding practices. Overall, the adoption rate of “good” cattle rearing practices is low.

Cattle production and management, with respect to feeding and health care, have not changed with time among smallholder farmers. Cattle production is generally perceived as a store of value kept for security. Only a few emergent smallholders keep cattle for cash, in addition to draft power and security. More commonly, cattle are only sold when the household needs money to pay for children’s school fees or other educational requirements or for buying essential household commodities, especially during the hunger months.

This said, farmers interviewed did identify some benefits of cattle rearing, including the use of draft power when cultivating large areas, transportation, and the hiring out of draft power. Those who were engaged in cash-crop production used manure from their cattle to supplement chemical fertilizers. Lack of sound government policies as well as rules, regulations and procedures to maintain standards have also contributed to the low beef production levels among the smallholder cattle farmers.

Both participant and control group farmers graze their cattle primarily on communal land, although members of the control group are significantly more likely to graze on their own land than members of the participant group (Table 24). Among both groups, land area devoted to grazing tends to be less than 5 hectares with one-third of grazing among control farmers taking place on land exceeding 10 hectares.

TABLE 24. TYPE OF GRAZING AREA

Type of land	Participant	Control	Total
Own farm	3.7	18.3	9.6
Communal land	90.0	74.8	83.8
Both	4.7	6.9	5.6
No Response	1.7	0.0	1.0

9.2. CATTLE SALES

Overall, 80 percent of farmers in the participant and control groups sell their cattle at the farm to a trader or agent (Table 25). Another 10 percent or so sell directly to the abattoir. Slightly fewer than 10 percent of participant farmers sell to butchers compared to 5 percent of control farmers. Cattle sales made in the market, to feed lots, or at auction are negligible

According to the farmers interviewed, the market for cattle is characterized by bulk buyers, and this discourages most farmers from investing in upgrading cattle production. The farmers felt that if they were organized into viable groups or market interest groups, it would be easier to sell cattle in bulk.

Farmers are free to sell to whom they wish. The majority of the farmers interviewed sold their cattle to butchers located at abattoirs, to local people within the community, or private buyers. Others have sold their cattle to beef producers like PAMA and ZAMBEEF, although this has included no more than a small handful of transactions. Generally, the farmers sold to buyers who are readily accessible, depending on how much they were willing to pay for the cattle.

TABLE 25. LOCATION OF CATTLE SALES

	Participant	Control	Total
At the Farm Trader/Agent	79.4	81.4	80.5
At Abattoir	8.8	11.6	10.4
At Feed Lot	0.0	0.0	0.0
At Auction	0.0	0.0	0.0
Butchery	8.8	4.7	6.5
Market	2.9	2.3	2.6

Approximately one-third of farmers who sold cattle in both groups did so to raise money for school fees, another 10 percent sold to cover emergency expenditures, around 2 percent each sold cattle to cover medical expenses or to raise cash for a dowry, and the remaining sold cattle for other reasons (Table 26). Only about 2 percent in each group sold cattle for commercial purposes. The average sales price was K841,591 among treatment farmers and K1,082,292 among control farmers. Visual inspection was used to determine sales price in just over 70 percent of sales in both groups followed by weighing in another 16 percent of sales among participant farmers and 20 percent of sales among control farmers.

TABLE 26. MAJOR REASONS FOR SELLING CATTLE

	Participant	Control	Total
Commercial	2.6	2.1	2.3
Emergency	12.8	10.4	11.5
Raise Cash for School Fees	38.5	35.4	36.8
Raise Cash for Medicals	2.6	2.1	2.3
Raise Cash for Dowry	2.6	4.2	3.4
Other	41.0	45.8	43.7

Depending on market forces, buyers may determine the price of the cattle, especially in cases where supply is high or when an animal is perceived to be unhealthy. Prices for cattle vary depending on the type of buyer. For instance, cattle sold to locals sell at a lower price than those sold to the butchers. A cow sold at K1,500,000 to locals is sold at K2,000,000 to the butchers. It is not known what portion of the price difference is accounted for by quality differences. This is a question that will need further investigation in the follow-up study.

The type of cattle breed was also cited as a major factor in determining market price. Cattle reared in the area are predominantly of a local breed that does not fetch as good a price as other breeds. Prices for crossbred cattle were beyond the reach of most smallholder farmers, partly because of their low capital base but also because services in getting improved breeding stock for cattle among the smallholder livestock farmers were not available.

Other market forces cited by the farmers that affect cattle prices include diseases and currency instability. Also in many cases households sold the cattle during periods of food insecurity or to cope with other shocks, or they attempted to sell old or sick animals, both of which translated into lower cattle prices. Current market regulations impose a council levy of K10,000 per head sold, which also discourages smallholders from selling cattle at higher prices to other value chain actors, whereas cattle sold to the local people avoid the levy.

Farmers noted that although lead firms such as PAMA and ZAMBEEF have created markets for the smallholders, their perception was that neither was taking meaningful steps to help farmers upgrade production. On the contrary, one of the lead firms, PAMA, saw the smallholders more as potential buyers than sellers. PAMA's perception of the smallholders is that they have potential to produce cattle on a commercial basis; however, their major constraint is lack of finances and the capacity to supply a large volume of cattle. PAMA's concern was that smallholders do not provide good quality and higher grades of beef, and it attributed this to the lack of disease control facilities. Because of the low quality of beef, one of the risks PAMA identified in dealing with smallholders is that it loses money on cattle that it buys but which it then has to discard when it is discovered to be unhealthy. To deal with this issue, PAMA now demands that livestock farmers provide a police clearance, veterinary certificate of health fitness, and receipt of the levy charge.

Overall, control farmers expressed higher levels of satisfaction with buyers than participant farmers with 90 percent expressing moderate or high satisfaction compared to only 70 percent of participant farmers (Table 27).

TABLE 27. LEVEL OF SATISFACTION WITH CATTLE BUYERS

	Participant	Control	Total
Very Satisfied	60.0	70.6	65.6
Moderately Satisfied	10.0	20.6	15.6
Not Satisfied	30.0	8.8	18.8

9.3. VETERINARY SERVICES

The major medical and input suppliers that the smallholders have access to in the qualitative study areas are the Matobo veterinary clinic and Grey Hound enterprises, a company located in Mazabuka dealing in livestock input supplies. Most farmers, however, preferred to get their supplies from Matobo because it is both less expensive and located in close proximity to the farmers.

The major constraint to the farmers in accessing veterinary inputs was the cost of the drugs. However, there are efforts being made by some input suppliers like Grey Hound enterprises to offer discounts to livestock farmers who are regular buyers or who buy supplies in bulk. The risk to the input supplier's business is that when demand for inputs is low, the stock, which is always ordered in bulk, tends to expire and is consequentially destroyed.

Overall, veterinary services are not well established or functioning well among the smallholder cattle farmers. Livestock services among smallholders interviewed were not readily available. In one area there was only one government veterinarian who serviced over 300 households. Despite the presence of this veterinarian, farmers failed to access vet services when the need arose. This has prompted cattle owners to mobilize their own resources to treat their livestock to the extent that most of them have learned how to inject their own cattle against diseases. The main constraints cited by this veterinarian in dealing with smallholder farmers include the lack of transport to reach all livestock farmers, the lack of vaccines and drugs, the lack of human resources to assist in the coverage of the assigned area, and the reluctance of smallholder cattle farmers to adopt new methods and livestock practices.

In terms of cattle services utilized, approximately 75 percent of participant farmers and 69 percent of control farmers dip their cattle compared to 60 percent in both groups that vaccinate their cattle (Table 28). Notwithstanding, farmers said that dipping facilities were inadequate. Those already in place are in a poor state due to the inability of farmers to collaborate and pool money together to maintain them. It was evident that there is lack of interest in renovating the dip tanks, and there seems to be a reluctance to assume responsibility for communally owned property, particularly dip tanks. One of the major reasons for this relates to the difficulties involved in sharing income derived from charging outside farmers to use the dip tank.

Just over one-third of control farmers utilized spraying services compared to only 14 percent of treatment farmers. Control farmers also utilized other cattle services at rates significantly higher than treatment farmers, although exceeding 10 percent only in the case of supplements/feeds.

Control farmers were more likely to use private veterinarian services, although few farmers in either group utilize private vet services. Private services are not common in the qualitative study districts; the Matobo Veterinarian Clinic is the only private veterinarian in these districts. To help alleviate the constraints that have contributed to the inability to develop and expand the smallholder beef sector,

PROFIT negotiated an agreement with Matobo to provide veterinary services to smallholder cattle farmers in the surrounding communities.

TABLE 28. FARMERS USING CATTLE RAISING SERVICES

Service	Participant	Control	Total
Cattle Raising Inputs and Services			
Supplement/Feeds	1.7	10.9	5.4
Hired Labor	2.7	6.4	4.2
Herding	2.0	5.0	3.2
Stud	0.7	5.4	2.6
Transportation	0.3	2.0	1.0
Feed Lot	0.3	2.0	1.0
Banking	0.7	0.5	0.6
Artificial Insemination	0.0	0.5	0.2
Insurance	0.0	0.0	0.0
Veterinary Services			
Dip Chemicals	75.6	69.3	73.1
Vaccines	59.2	60.4	59.7
Spraying	14.4	35.1	22.8
Private Veterinarian	2.3	7.4	4.4

The relationship between the farmers and Matobo is arranged through a contract which covers profession fees, drugs, and all vaccinations. The contract fee is K32,000 per animal per year. The main services offered for this fee include ambulance services, pregnancy testing, testing of bulls prior to mating, drug supply, and vaccinations and other preventative treatment. Vaccinations and preventative treatment offered include:

- Annual S19 or RB51 to heifer (winter month),
- Regent blackleg/Anthrax vaccine for young stock (1 month),
- Annual RVF to Breeding females (September/October),
- Annual LSD to every animal over 3 month of age (September/October),
- Annual 3-day staff sickness to working bulls and ox,
- Annual drench against round and tape worm (end of rain season),
- Annual treatment for liver fluke (end of rain), and
- Castration of young bulls (various times).

Aside from the contract services listed above, Matobo also offers other vet services to smallholders on a fee-for-service basis. Motobo charges K60,000 for booking fee, K2,000 per kilometer of travel, and the cost of medicine used

Most farmers interviewed were not on contract with Matobo due to a lack of finances or a lack of information and understanding of the program. There was initially much interest in the community when

Matobo started providing vet services; however, Matobo reported that participation has dwindled somewhat as the farmers perceive the services to be expensive.

One of the major constraints to smallholder cattle farming cited by Matobo is that it does not generate enough profit. Thus as an incentive for the smallholders, Matobo does not charge the normal full rates for services. Prior to expanding to other smallholders in the area, Matobo intends to carry out an assessment on the effectiveness and profitability of such an arrangement.

Despite using dipping and vaccination services less frequently, treatment farmers spend on average more than control farmers on dipping by K141,144 to K120,392 and on vaccinations by K124,091 to K89,082 (Table 29). In contrast, control farmers spend significantly more on average on spraying by K120,090 to K37,189. For those who do spend money on dipping, vaccinations, and spraying, the majority spend only low to moderate amounts. Over one-half of participant and control farmers spend less than K60,000 on dipping and less than K50,000 on vaccinations and spraying.

TABLE 29. EXPENDITURES ON VETERINARIAN SERVICES

	Participant	Control	Total
Dip Chemicals	141,144	120,391	133,092
Vaccines	12,409	89,083	109,958
Cattle Spraying	37,189	120,090	82,222

9.4. EMPLOYMENT

Only eight treatment farmers (2.7 percent) and 13 control farmers (6.4 percent) reported hiring labor for cattle rearing, the majority of which in both groups hired a single laborer who worked anywhere from 0–200 days and was paid anywhere from nothing to K200,000.

9.5. CATTLE MORBIDITY AND MORALITY

Treatment farmers experienced a higher level of cattle morbidity than control farmers over the previous 12 months for all types of sicknesses (Table 30). Morbidity rates among the two groups were particularly high for corridor disease, foot and mouth disease, and lumpy skin disease. Overall cattle for 81.6 percent of treatment farmers experienced sickness over the past 12 months compared to 52 percent of control farmers.

TABLE 30. FARMERS WITH CATTLE EXPERIENCING SICKNESS

Disease	Participant	Control	Total
Foot and Mouth	25.4	13.4	20.5
Corridor	46.2	26.2	37.9
Anthrax	4.7	2.0	3.6
Lumpy Skin	18.4	18.3	18.2
Liver Fluke	2.7	2.0	2.4
CBPP	1.7	0.5	1.2
Other	13.7	5.9	10.5
Total	81.6	52.0	69.3

For those herds that experienced sickness over the past 12 months, the mean number of cattle getting sick from all diseases was 2.9 among treatment farmers and 2.70 among control farmers (Table 31). With two exceptions (anthrax and CBPP), the rate of sickness was higher among treatment than control farmers. A relatively higher prevalence of sickness exists from corridor disease and liver fluke disease among both groups of farmers with relatively lower prevalence of sickness from CBPP and anthrax.

TABLE 31. CATTLE EXPERIENCING SICKNESS

Disease	Participant	Control	Total
Foot and Mouth	.62	.28	.49
Corridor	1.60	1.46	1.54
Anthrax	.12	.02	.08
Lumpy Skin	.32	.52	.40
Liver Fluke	1.50	.75	1.19
CBPP	.02	.02	.02
Other	.21	.09	.16
Total	2.93	2.41	2.70

Among farmers whose herds suffered from disease, the large majority either sought treatment from a government or private veterinarian clinic or purchased medicines (Table 32). Participant farmers were on average more inclined to seek out medical treatment for sick cattle than control farmers, whereas control farmers were more likely to visit private vet clinics than participant farmers. Both participant and control farmers were much more inclined go to government vet clients than private vet clinics.

From three-quarters to over 90 percent of farmers in both groups sought treatment or purchased medicines for their cattle suffering from foot and mouth, corridor, and lumpy skin diseases. In each case, participant farmers were slightly or moderately more likely than control farmers to seek treatment or purchase medicines. Three-quarters of participant farmers sought treatment for liver fluke disease compared to one-half of control farmers, whereas 100 percent of control farmers sought treatment for CBPP disease compare to three-quarters of participant farmers.

TABLE 32. FARMERS SEEKING TREATMENT OF PURCHASING MEDICINES FOR CATTLE DISEASES

	Participant	Control	Total
Foot and Mouth	81.4	77.8	87.0
Corridor	89.6	73.5	85.1
Lumpy Skin Disease	96.3	94.5	95.6
Anthrax	83.3	80.0	83.4
Live Fluke Disease	75.0	50.0	66.7
CBPP Disease	66.7	100.0	75.0
Other Diseases	90.0	91.7	90.4

Participant farmers also experienced a higher level of cattle mortality than control farmers over the previous 12 months for all types of sicknesses (Table 33). Mortality rates were relatively high for corridor disease among the two groups and for foot and mouth disease among participant farmers. Overall 44.8 percent of participant farmers lost cattle to death compared to 25.7 percent of control farmers.

TABLE 33. FARMERS EXPERIENCING DEATH OF CATTLE FROM DISEASE

Disease	Participant	Control	Total
Foot and Mouth	11.7	4.5	8.8
Corridor	29.4	14.4	23.2
Anthrax	3.0	0.5	2.0
Lumpy Skin	3.3	4.5	3.8
Liver Fluke	1.0	1.0	1.0
CBPP	6.7	0.5	4.2
Other	3.7	4.5	4.0
Total	44.8	25.7	36.9

Overall, farmers in both groups lost 1.7 head of cattle to disease in the past year (Table 34). Among farmers suffering deaths to their cattle herd, they lost more cattle to corridor disease than any other disease equal to an average of 1.2 cattle lost in both groups. Foot and mouth disease was the second biggest killers of cattle among participant farmers at .33 (.12 among control farmers), whereas lumpy skin disease was the second biggest killer among control farmers at .25 (.05 among participant farmers). Anthrax was a relatively big killer among participant farmers at .08 (.00 among control farmers), while farmers in both groups suffered a death rate of .07 head from other diseases. CBPP and liver fluke disease killed the fewest cattle across both groups.

Overall, farmers in both groups lost 1.7 head of cattle to disease in the past year (Table 34). Among farmers suffering deaths to their cattle herd, they lost more cattle to corridor disease than any other disease equal to an average of 1.2 cattle lost in both groups. Foot and mouth disease was the second biggest killers of cattle among participant farmers at .33 (.12 among control farmers), whereas lumpy skin disease was the second biggest killer among control farmers at .25 (.05 among participant farmers). Anthrax was a relatively big killer among participant farmers at .08 (.00 among control farmers), while farmers in both groups suffered a death rate of .07 head from other diseases. CBPP and liver fluke disease killed the fewest cattle across both groups.

TABLE 34. NUMBER OF CATTLE DYING

Disease	Participant	Control	Total
Foot and Mouth	.33	.12	.25
Corridor	1.20	1.22	1.21
Anthrax	.08	.00	.05
Lumpy Skin	.05	.25	.13
Liver Fluke	.01	.03	.02
CBPP	.01	.00	.01
Other	.07	.07	.07
Total	1.72	1.70	1.71

9.6. SOURCES OF INFORMATION

There are a number of potential sources of information on cattle rearing. Potentially important sources include community information centers, radio, cell phones (SMS), and the internet (Table 35).

Approximately 60 percent of farmers in the participant and control groups access information about cattle rearing from the radio. A significant percentage of farmers in both groups also get information from information centers and, to a lesser extent, cell phones. Nearly two-thirds of control farmers use information centers compared to nearly one-half of participant farmers, whereas 40 percent of participant farmers get information from their cell phones compared to 30 percent of control farmers. Virtually no farmers in either group get information on cattle rearing from the internet.

TABLE 35. SOURCES OF INFORMATION ABOUT CATTLE REARING

	Participant	Control	Total
Radio	61.2	59.4	60.5
Information Centers	47.5	67.8	55.7
Cell Phone	39.8	30.7	36.1
Internet	2.3	1.5	2.0

The types of information disseminated in information centers tends to place a heavy emphasis on new or better farming methods with relatively little emphasis on better methods to manage farm enterprises and even less emphasis on input and output markets (Table 36). The primary method of instruction at approximately 90 percent of the information centers among both groups is word of mouth with another 10 percent relying on written instruction. A few use cell phones and none use cell phones or email. Approximately 80 percent of farmers in both groups say the information received at the centers is useful to them.

TABLE 36. TYPES OF INFORMATION DISSEMINATED BY INFORMATION CENTERS

	Participant	Control	Total
New or better methods of farming	92.0	88.3	90.1
Better methods of managing farms	20.0	22.6	21.3
Input markets	15.6	17.5	16.5
Output markets	11.9	11.7	11.8

9.7. HORIZONTAL LINKAGES

Horizontal collaboration among smallholder cattle farmers is scarce. According to the farmers, prior to the coming of PROFIT there were no groups or affiliations in the community that operated in livestock activities. Existing community-level organizations such as cooperatives do not focus on livestock issues but on crop activities. Livestock farmers felt there was lack of effort to forge linkages among livestock farmers because interest was placed on crop farming activities only. This underscores what many have identified as a general bias against livestock development and in favor of crop production.

Horizontal interaction among firms and service providers was also clearly absent in the qualitative study communities despite the fact that they shared similar interests, constraints and economic environment. Where notable areas of interaction were reported, these were to a very limited degree.

In lieu of cattle raising associations, there are other farmer associations operating in cattle raising communities; nearly two-thirds of farmers in both groups reported the presence of farmer groups in their

community (Table 37). The most common farmer group reported by participant and control farmers was producer associations followed by marketing cooperatives and marketing/buyer cooperatives.

TABLE 37. TYPES OF FARMER GROUPS PRESENT IN COMMUNITY

	Participant	Control	Total
Farmer Group in Community	66.6	66.9	66.9
Type of Farmer Group			
Marketing Cooperative	16.4	19.8	17.8
Buyer Cooperative	3.0	4.0	3.4
Marketing/Buyer Cooperative	9.4	13.4	11.0
Producer Association	27.4	23.3	25.7
Other	0.0	1.5	0.6

Approximately one-half of both groups (though more control farmers) belonged to a farmer group and another 5 percent belonged to two farmer groups (Table 38). Approximately three-quarters of those belonging to a farming association say that they attended meetings always with most of the remaining saying that they attended sometimes.

The large majority of participant and control farmers who belong to farmer groups list easy access to inputs as the primary benefit of group membership. None of the other possible benefits was identified at a significantly higher rate than the others. In terms of desired benefits, easy access to information topped the list again in both groups. Among participant farmers, easy access to credit, easier to sell farm produce, and easy access to extension services were also mentioned predominately. Among control farmers, there is a substantial drop in interest to easier to sell farm produce, source of production and market information, easy access to extension services, and easy access to credit.

TABLE 38. MEMBERSHIP IN FARMERS' GROUP AND BENEFITS OF GROUP MEMBERSHIP

	Participant	Control	Total
Group Membership	46.8	55.4	50.3
Benefits			
Easy Access to Inputs	104	94	198
Easy Access to Credit	21	12	33
Easy Access to Extension Services	7	14	21
Easier to Sell Farm Produce	12	8	20
Source of Production and Market Information	14	7	21
Easier to Negotiate for Good Price	2	1	3
Easier to Organize Transport	2	0	2
Frequency of Attendance			
Always	72.1	77.9	74.7
Sometimes	25.0	21.2	23.3
Rarely	0.7	0.9	0.8

In addition to high rates of group membership, a number of survey respondents said that they collaborated with other farmers to pool resources (Table 39). Approximately one-third of respondents in both groups pooled resources to purchase agricultural inputs; another 20 percent in both groups pooled resources to acquire services; and 14–20 percent, respectively, pooled resources to sell products. Based on the results of the qualitative research, however, the bulk of cooperative action reported in Table (39) appears to be related to farming activities rather than cattle raising.

TABLE 39. POOLING OF RESOURCES

	Participant	Control	Total
Buy Agricultural Inputs	32.4	31.2	31.9
Acquire Services	19.7	21.9	20.6
Sell Product	14.0	19.8	16.4

9.8. VERTICAL LINKAGES

Table 40 shows the type of linkages that exist in the qualitative study areas among the smallholder cattle farmers with other value chain actors.

TABLE 40. VERTICAL LINKAGES IN THE BEEF CATTLE VALUE CHAIN IN QUALITATIVE STUDY AREAS

Stakeholders	Type of Linkages
Government Veterinarian	<ul style="list-style-type: none"> • Has a strong relationship established over a period of 17 years • Provides services, such as vaccinations, and conducts trainings of livestock farmers to enhance production. • Provides services for free although farmers must pay for drugs
Private veterinarian	<ul style="list-style-type: none"> • Has only forged a relationship with the livestock farmers in 2006 • Has a contract relationship with the farmers for which the farmers pay K32,000 per animal per year to receive the following services: ambulance services; pregnancy testing; testing of bulls before going into mating, and vaccinations. • Makes four trips in a year to relevant farmer communities to fulfill contractual agreement. • Provides fee-for-service outside the contract.
Input suppliers	<ul style="list-style-type: none"> • Relationship does not go beyond transaction activities.
Agents/brokers	<ul style="list-style-type: none"> • Have a good relationship with smallholders. • Provide a readily available market to the smallholders. • Collaborative efforts among agents/brokers and to understand each others' issues and problems. • High levels of mutual trust to the point that smallholders sell to the agents/brokers on account.
Retailers	<ul style="list-style-type: none"> • Relationship does not go beyond transaction activities. • Relationship with smallholders characterized by mutual mistrust.
Lead firms	<ul style="list-style-type: none"> • No linkages established.

In terms of their relationship with other value chain actors, just over one-half of survey respondents reported receiving technical assistance (TA), training, or information from other value chain actors,

including three-quarters of control farmers and 38 percent of participant farmers (Table 41). Over 90 percent in both groups found TA from Ministry of Ag extension officers and other sources to be very useful. Ministry of Agriculture extension officers were the most important source of TA in both groups followed by other sources. Nearly 10 percent of control farmers also received assistance from other extension officers. Input suppliers, agribusiness companies, radio, TV, seminars and meetings, posters, newspapers, magazines, producer associations, and buyers were either not a source or were an insignificant source of assistance.

TABLE 41. ADVICE AND TRAINING RECEIVED IN LAST YEAR

	Participant	Control	Total
Received advice or training	37.8	75.2	52.9
Source			
Ministry of Ag Extension Officer	24.1	39.1	30.1
Other Extension Officers	0.3	8.9	3.8
Chemical and Fertilizer Suppliers	0.0	0.0	0.0
Input Shops	0.0	0.0	0.0
Seminars and Meetings	0.0	0.0	0.0
Agribusiness Company	0.0	0.0	0.0
Radio, TV	0.7	0.0	0.0
Posters	0.0	0.0	0.0
Newspapers or Magazines	0.0	0.0	0.0
Producer Association	0.0	0.0	0.0
Buyers	0.0	0.0	0.0
Other	16.7	47.0	28.9

Overall, qualitative discussions with smallholder cattle farmers characterized the farmers' relationships with other value chain actors as generally weak, with the exception of the private veterinarian and the agents/brokers. The relationship between the private veterinarian and the smallholders was in its formative stage and was perceived to be a productive business linkage by the farmers. Previous to this partnership, none of the farmers had sustained any kind of business relationship with private veterinarians beyond 'one-off' transaction.

Important factors cited by the various actors on the lack of established linkages with the cattle value chain were the lack of interest among the farmers to engage in commercial cattle production and the lack of interest among lead firms to support smallholders. PAMA, for example, felt that it was beyond the capacity of the farmers to supply cattle in bulk on a constant basis and thereby did not expect its commercial relationship with smallholders to go beyond one or two transactions. Other factors cited that affected the lack of linkages between smallholders and lead firms were that smallholders lacked knowledge and information on existing opportunities, the absence of communication channels to create awareness of available opportunities, and low levels of trust between the two groups.

10. RETAIL INPUT SUPPLY SECTOR

10.1. SOURCES OF INFORMATION

Nearly 22 percent of control farmers are aware of a shop selling inputs in the local or nearby community compared to 12 percent of participant farmers (Table 42). Of these, “other” sources were the most important sources of information in both groups followed by community events and market days.

TABLE 42. SOURCE OF INFORMATION ON SHOP THAT SELLS AGRICULTURAL INPUT IN THIS OR NEARBY COMMUNITY

	Participant	Control	Total
Heard of input shop in community	11.6	22.3	15.9
Source of Information about Shop in Community			
Flyers	0.0	0.0	0.0
Community Events	3.9	5.8	4.7
Market Day	2.9	1.9	2.5
Other	4.5	14.5	8.5

In communities with a shop selling inputs, the average distance to the shop is greater than 5 kilometers. Among control farmers the distance is greater than 10 kilometers three quarters of the time (Table 43).

TABLE 43. DISTANCE TO NEAREST INPUT SHOP

	Participant	Control	Total
Less than 500 m	0.0	2.2	1.2
500m to less than 1 km	0.0	0.0	0.0
From 1 km to less than 3 km	16.7	8.7	12.2
From 3 km to less than 5 km	8.3	4.3	6.1
From 5 km to less than 10 km	38.9	8.7	22.0
More than 10 km	30.6	76.1	56.1

A similar percentage of participant and control farmers have received information on available agricultural products and services (Table 44). Camp extension officers were the source of this information for nearly three-quarters of participant farmers, village extension workers for another one-fifth, and other sources for 10 percent. By contrast, “other” sources were the source of information for 44 percent of control farmers followed by camp extension officers and village extension workers (19.4 percent each) and input suppliers (13.4 percent).

No participant farmers cited inputs suppliers as a source of information on products and services. Notwithstanding, 19.6 percent of participant farmers and 16.0 percent of control farmers said that retailers attempt to persuade the farmers to buy from them.

TABLE 44. WHETHER FARMERS RECEIVED AND SOURCES OF INFORMATION ABOUT AVAILABLE AGRICULTURAL PRODUCTS AND SERVICES

	Participant	Control	Total
Received information on products/services	11.3	20.4	14.9
Source of Information about Products/Services			
Camp Extension Officer	71.9	19.4	44.1
Village Extension Group	18.8	19.4	19.1
Input Supplier	0.0	13.4	7.4
Community Radio	0.0	2.8	1.5
Other	9.4	44.4	27.9

Over two-thirds of participant farmers said that they listened to a radio program on agriculture in the last two weeks compared to 60 percent of control farmers (Table 45). Another 30.6 percent of participant farmers and 37.9 percent of control farmers said that they have used a cell phone to receive farming information. Fewer than 3 percent of respondents in each group said that they received information on farming from the internet.

TABLE 45. SOURCE OF FARMING INFORMATION

	Participant	Control	Total
Use Cell Phone to Send or Receive Farming Information	30.6	37.9	33.4
Use Internet to Send or Receive Farming Information	2.7	1.0	1.9
Listened to Radio Program on Agricultural Business in Past 2 Weeks	68.5	60.7	65.4

10.2. INPUTS

The major input suppliers targeting smallholder farmers in the qualitative study areas are SEED-CO, PANNAR and Land serve. However, most farmers interviewed preferred SEED-CO inputs because they produced higher yields and required less management. Notwithstanding the preference for SEED-CO, price was the most important factor in deciding where to buy inputs among three-quarters or more of participant and control farmers, although cited more frequently among control farmers (Table 46). Location was the second most important factor in deciding where to buy inputs in both groups although still of minor importance relative to price. According to the farmers interviewed, the prices of inputs have been increasing over time, while input suppliers do not offer bulk discounts.

TABLE 46. MOST IMPORTANT FACTORS IN DECIDING WHERE TO BUY INPUTS

	Participant	Control	Total
Price	74.0	85.4	78.5
Location	12.5	6.8	10.3
Quality	9.6	6.3	8.3
Relationship/trust with Owner	1.0	1.0	1.0
Recommendation from Someone	1.3	0.0	0.8

Most input suppliers do not provide extension services to smallholder farmers. Farmers interviewed revealed that there were generally no follow up visits from input suppliers after purchase. Interviewees also noted changes in the input market in recent times. There has been, for example, an increase in the variety of inputs sold. Many input suppliers, moreover, have changed the packaging and have begun to clearly label input packs.

On the negative side, a number of farmers interviewed felt that input sellers repack product bags in smaller contents than the quantity stipulated. In some cases, fake seed is sold on the market to unsuspecting farmers. This has created mistrust between input suppliers and smallholder farmers and has also caused farmers to experience income losses.

Approximately 80 percent of participant and control farmers purchased fertilizer during the past growing season (Table 47). Another one-third and one-fourth of control farmers purchased pesticides and veterinary drugs compared to, respectively 15 percent and 12 percent of participant farmers. Relatively few farmers in either group, between 2–6 percent, purchased herbicides.

TABLE 47. WHETHER PURCHASED AGRICULTURAL INPUTS

Practice	Participant	Control	Total
Fertilizer	80.4	79.1	79.9
Pesticides	14.8	33.0	22.1
Herbicides	5.8	1.9	4.3
Veterinary Drugs	11.9	27.7	18.4

Of those farmers who purchased inputs during the past growing season, control farmers purchased on average significantly more kilograms of fertilizer than participant farmers (although a majority or near majority farmers in both groups purchased less than 500 kilograms) (Table 48). Participant farmers purchased between 4–5 times more kilograms of pesticides, whereas control farmers purchased between 4–5 times more liters of pesticides. Participant farmers purchased on average more kilograms and liters of herbicides, while control farmers purchased more kilograms and liters of veterinary drugs.

Overall, participant farmers spend more on pesticides, herbicides, and veterinary drugs, outspending control farmers by K604,666 thousand to K23,666. Control farmers in turn spent on average over K1 million on fertilizers compared to K715,466 among participant farmers.

TABLE 48. INPUT PURCHASES DURING LAST GROWING SEASON

Practice	Participant	Control	Total
Amount Purchased			
Fertilizer (kgs)	403	765	545
Pesticides (kgs)	2.5	.54	1.7
Pesticides (liters)	.20	.93	.48
Herbicides (kgs)	.06	.01	.04
Herbicides (liters)	.85	.03	.52
Veterinary Drugs (kgs)	.17	.49	.29
Veterinary Drugs (liters)	.13	.26	.18
Amount Purchased (kwacha)			
Fertilizer	715,466	1,087,582	858,299
Pesticides	57,577	46,797	53,281
Herbicides	604,666	23,666	521,666
Veterinary Drugs	176,134	142,268	156,884

Stores outside the community were the main source of purchased inputs in both groups (Table 49). Other relatively important sources of inputs include: farm agents for fertilizers, pesticides, and herbicides among participant farmers; buying/group associations for fertilizer among participant farmers; and other sources for fertilizer and herbicides among participant and control farmers and for pesticides among control farmers.

TABLE 49. MAIN SOURCES OF INPUTS

	Fertilizer			Pesticides			Herbicides			Veterinary Drugs		
	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total
Agent at Farm	14.1	5.6	10.8	13.3	0.0	5.4	11.8	0.0	9.5	8.1	8.8	8.5
Store Outside Community	41.1	59.0	48.2	62.2	46.3	52.7	64.7	75.0	66.7	78.4	82.5	80.9
Buying/Group Association	25.4	13.0	20.5	4.4	22.4	15.2	5.9	0.0	4.8	2.7	1.8	2.1
Agent for Store in Community	2.8	1.2	2.2	4.4	0.0	1.8	5.9	0.0	4.8	5.4	0.0	2.1
Store in Community	1.2	3.1	2.0	8.9	4.5	6.3	0.0	0.0	0.0	5.4	5.3	5.3
Other	15.3	18.0	16.4	6.7	26.9	18.8	11.8	25.0	14.3	0.0	1.8	1.1

In interviews, farmers complained about the lack of input sellers within their communities. This means that farmers incur high transport costs to purchase inputs. For their part, input suppliers also felt that the distribution of seed and other inputs was highly centralized and did not reach out to the communities in which the farmers lived and worked. As seen in Table 50, the distance traveled to purchase inputs (for

farmers purchasing inputs) was greater than 11 kilometers in 70–100 percent of cases in both groups. On balance, control farmers traveled longer distances to purchase all kinds of inputs than did participant farmers.

TABLE 50. DISTANCE TO SHOP WHERE INPUTS PURCHASED

	Fertilizer			Pesticides			Herbicides			Veterinary Drugs		
	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total
Less than 3 km	8.8	2.1	5.9	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	1.3
Between 3 and 6 km	4.8	4.1	4.5	12.5	10.3	11.3	10.0	0.0	7.7	0.0	0.0	0.0
Between 7 and 10 km	12.0	6.2	9.5	8.3	3.4	5.7	20.0	0.0	15.4	9.7	0.0	3.9
11 km and above	74.4	87.6	80.2	79.2	86.2	83.0	70.0	100.0	76.9	87.1	100.0	94.7

Farmers also purchased a variety of production services during the past growing season (Table 51). Farmers in both participant and control groups spent relatively large amounts on oxygen tillage (48.2 vs. 25.9 percent), weeding (47.3 vs. 38.3 percent), transport (17.7 vs. 24.9 percent), and harvesting (22.8 vs. 13.2 percent) services during the past growing season. Participant farmers also spent a relatively high amount on herding compared to control farmers (17.0 vs. 4.4 percent). Both groups spent relatively less on motorized tillage, dipping, hired labor, and spraying. Almost no farmers in either group spent money on feed lot, stud, or artificial insemination services.

In terms of actual cash expenditures, farmers in both groups spent the most on, in descending order, oxygen tillage, transport, weeding, herding, and harvesting. Control farmers spent significantly more on herding, harvesting, labor, and spraying than participant farmers, whereas participant farmers spend significantly more on transport, and motorized tillage.

TABLE 51. EXPENDITURE ON SERVICES DURING LAST GROWING SEASON

Practice	Participant	Control	Total	Participant	Control	Total
	% Farmers Purchasing Service			Kwacha Expenditures on Service		
Oxygen Tillage	48.2	35.9	43.3	81,139	73,252	77,984
Transport	17.7	24.9	20.4	53,459	76,346	62,569
Weeding	47.3	38.3	43.7	56,498	61,305	58,413
Herding	17.0	4.4	12.0	65,694	8,796	42,891
Harvesting	22.8	13.2	19.0	39,908	25,146	34,043
Motorized Tillage	3.2	4.4	3.7	10,135	17,223	12,959
Dipping	7.7	12.1	8.9	10,814	14,541	12,308
Hired Labor	14.1	1.5	8.9	15,358	1,330	9,757
Spraying	8.4	2.9	6.2	10,016	2,067	6,849

10.3. SOURCES OF INFORMATION-INFORMATION CENTERS

Approximately 90 percent of participant farmers reported the presence of a farmer information center in their community or a nearby community compared to just over two-thirds of control farmers (Table 52). Nearly two-thirds of participant and control farmers said that they received information on new or better farming methods at the farmer information center, and another 25–30 percent said that they received information on better methods of managing farm enterprises.

TABLE 52. PRESENCE OF FARMER INFORMATION CENTER IN THE COMMUNITY AND TYPES OF INFORMATION DISSEMINATED

	Participant	Control	Total
Farmer Information Center in Community	90.7	69.9	82.4
Types of Information Disseminated by Information Centers			
New or better methods of farming	78.7	71.5	76.3
Better methods of managing farm enterprises	25.9	31.9	27.9
Input markets	8.2	8.3	0.8
Output markets	5.1	6.9	5.7

For farmers reporting an information center in their or a nearby community, the overwhelmingly predominant method of information sharing at the information centers is word of mouth, which was cited by over 90 percent of farmers in both respondent groups (Table 53). Written materials were the second most common method of information sharing in 15–20 percent of the two groups. Over 90 percent in both groups receiving information from the centers said that the information provided was useful.

TABLE 53. DISSEMINATION METHODS USED BY INFORMATION CENTERS

	Participant	Control	Total
Word of mouth	94.7	91.6	93.6
Written materials	15.2	22.2	17.6
Radio	6.4	9.7	7.5
Cell phone	0.4	0.7	0.5
Email	0.0	0.0	0.0

10.4. TECHNICAL ASSISTANCE

Over 90 percent of participant farmers received advice or training in farming over the past year compared to three-quarters of control farmers (Table 54). Of those receiving advice or training, the largest suppliers were extension officers from the Ministry of Agriculture (81 percent vs. 56 percent), radio and TV (34 percent vs. 42 percent), other sources (24 percent vs. 39 percent), and other extension officers (14 percent vs. 16 percent). Over 10 percent of participant farmers also received advice or training from seminars or meetings and agribusiness companies.

TABLE 54. ADVICE OR TRAINING RECEIVED IN LAST YEAR

	Participant	Control	Total
Received Advice or Training	93.9	74.3	86.1
Source			
Ministry of Ag Extension Officer	81.3	55.9	72.5
Other Extension Officers	14.0	15.8	14.7
Chemical and Fertilizer Suppliers	3.8	0.7	2.7
Input Shops	1.0	0.0	0.7
Seminars and Meetings	12.8	4.6	10.0
Agribusiness Company	14.2	6.0	10.5
Radio, TV	34.2	42.0	36.9
Posters	3.4	0.0	2.3
Newspapers or Magazines	0.0	0.0	0.0
Producer Association	1.7	3.9	2.5
Buyers	0.0	0.0	0.0
Other	24.1	38.9	29.4

Among farmers receiving advice or training from Ministry of Agriculture extension officers, other extension officers, seminars and meetings, agribusiness companies, radio and TV, and other sources, from three-quarters to 100 percent rated the service as very useful, and in most cases, no more than 3 percent rated the service as not useful (Table 55).

TABLE 55. USEFULNESS OF ADVICE AND TRAINING RECEIVED IN LAST YEAR

	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total
	Ministry of Ag Extension Officer			Other Extension Officer			Seminars and Meeting		
Very Useful	91.0	88.2	90.3	81.6	83.3	82.3	86.5	100.0	88.6
Moderately Useful	8.6	11.8	9.4	15.8	16.7	16.1	13.5	0.0	11.4
Not Useful	0.4	0.0	0.3	2.6	0.0	1.6	0.0	0.0	0.0
	Agribusiness Company			Radio, TV			Other		
Very Useful	72.0	75.0	72.7	83.2	73.0	79.1	96.8	92.9	94.9
Moderately Useful	20.0	25.9	21.2	16.8	27.0	20.9	3.2	7.1	5.1
Not Useful	8.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0

10.5. HORIZONTAL LINKAGES

Between 95 and 98 percent of participant and control farmers said that there were farmer groups present in their communities (Table 56). In qualitative interviews, farmers mentioned that the Agriculture Support Programme (ASP) had spearheaded the formation of the farmer groups in their community. This has been mainly attributed to ASP's concept of farming as a business.

Producer groups were by far the most commonly cited farmer group by approximately three-quarters of participant farmers and two-thirds of control farmers. Marketing cooperatives were the second most commonly identified farmer group, albeit by only 16 percent of participant farmers and nearly one-quarter of control farmers. A number of respondents in each group identified the presence of two or more farmer groups in their communities. These included nearly two-thirds who identified at least two farmer groups, 40 percent who identified three farmer groups, and nearly one-third who identified four farmer groups. Participant farmers were more likely across the board to identify farmer groups in their communities.

Membership in farming groups was high among both participant and control farmers with 90 percent of the former and 73 percent of the latter belonging to at least one farmer group. Nearly one-fifth of the participant farmers belonged to a second farmer group compared to 12 percent of control farmers. Relatively few in either group belonged to a second or third farmer group.

TABLE 56. TYPES OF FARMER GROUPS PRESENT IN COMMUNITY

	Farmer Group 1			Farmer Group 2			Farmer Group 3			Farmer Group 4		
	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total	Participant	Control	Total
Marketing Coop	16.4	23.9	19.0	9.1	16.8	11.8	5.6	12.3	7.9	3.5	5.8	4.3
Buyer Coop	1.4	1.9	1.6	1.7	3.2	2.3	1.0	1.3	1.1	0.7	1.3	0.9
Marketing Coop	5.9	0.6	4.1	4.2	0.6	2.9	2.8	0.6	2.0	0.7	0.6	0.7
Producer Assoc.	73.9	68.4	71.9	51.9	41.9	48.4	46.0	21.3	37.3	35.9	9.0	26.5
Other	0.3	0.0	0.2	0.3	0.0	0.2	0.7	1.9	1.1	0.3	0.6	0.5
None	2.1	5.2	3.2	32.8	37.5	34.4	43.9	62.6	51.6	58.9	82.7	67.1

Participant farmers were significantly more likely to attend always their farmer group than control farmers by 90 percent to 60 percent (Table 57). For those belonging to a second farmer group, participant farmers were again significantly more likely to attend always by 81 percent to 50 percent.

TABLE 57. MEMBERSHIP IN AND ATTENDANCE AT FARMER GROUP MEETINGS

	Farmer Group 1			Farmer Group 2		
	Participant	Control	Total	Participant	Control	Total
Membership in Farmer Group	82.3	54.9	71.4	11.0	5.8	9.5
Attendance at Farmer Group						
Always	89.8	59.3	75.0	80.6	50.0	72.9
Sometimes	9.0	25.7	13.1	16.7	41.7	22.9
Rarely	0.0	12.4	3.5	2.8	8.3	4.2
Benefits of Farmer Group Membership						
Easy Access to Inputs	21.8	30.7	24.5	8.3	33.3	15.7
Easy Access to Credit	2.7	2.6	2.7	2.8	6.7	3.9
Easy Access to Extension Services	16.7	17.5	17.0	16.7	0.0	11.8
Easier to Sell Farm Produce	5.8	1.8	4.6	11.1	0.0	7.8
Source of Production and Market Info	41.6	28.9	37.7	41.7	13.3	33.3
Easier to Negotiate for Good Price	1.6	0.9	1.3	0.0	0.0	0.0
Easier to Organize Transport	0.0	0.9	0.3	0.0	0.0	0.0

When asked about the benefits from membership in farmer groups, survey respondents cited three principal benefits: source of production and market information, easy access to inputs, and easy access to extension services. Participant farmers were more likely to cite the information benefits, whereas control farmers were more likely to cite the easy access to inputs. Access to extension services was comparatively less important and was cited by approximately 16–17 percent of respondents in both groups.

In qualitative interviews, farmers also identified a number of benefits to group membership naming in particular improved linkage to input suppliers, market facilitation through bulk buying, extension service facilitation, provision of information to members, and bulk selling. (Bulk selling has the added downstream of reducing transport costs since the buyer covers the cost of transport when smallholder farmers are selling maize collectively.)

In addition to and/or facilitated by their membership in farmer groups, a number of smallholder farmers are pooling resources to purchase inputs and services and sell produce. Compared to participant farmers, control farmers were more likely to cooperate with their fellow farmers by pooling resources (Table 58). One-third of control farmers pooled resources to purchase inputs and another one-quarter of control farmers pooled resources to purchases services or sell produce. By comparison, one-quarter of participant farmers pooled resources to buy inputs and nearly 17 percent pooled resources to buy services or to sell produce.

TABLE 58. RESOURCE POOLING TO BUY AGRICULTURAL INPUTS

	Participant	Control	Total
Resource Pooling to Buy Agricultural Inputs	24.1	32.0	27.3
Resource Pooling to Buy Services	16.7	26.7	20.7
Resource Pooling to Sell Produce	16.7	25.7	20.3

In contrast to the smallholder farmers, there is little evidence of horizontal cooperation by input suppliers in the qualitative study communities. Competition between input suppliers appears to reduce their incentives for cooperating with the retail value chain.

10.6. VERTICAL LINKAGES

A number of organizations in the qualitative study areas were directly working with the smallholder farmers. These include the Ministry of Agriculture and Cooperatives (MACO), Agriculture Support Program (ASP), PROFIT, Micro Bankers Trust, Programme against Malnutrition (PAM), Sand Serve, SEED-CO, and PANNAR. Areas of collaborations between the institutions and smallholder farmers and services provided are shown in Table 59 below.

Interview participants generally felt that there has been an increase in crop production—particularly in maize, soybeans and groundnuts—in the qualitative study communities. Smallholder farmers noted an average margin of 2 to 3 times above the normal production levels, and they attributed this increase in production, at least in part, to ASP’s training and increased cooperation among smallholder farmers through the formation of farmer groups. The interviewees further believed that the PAM, ASP, and the Zambia National Farmers Union (ZNFU) had improved their service provision towards smallholders. Improvements were evident in areas such as information dissemination, input provision, linkages to other input suppliers, and farmer demonstrations.

One remaining deterrent among farmers is the lack of bargaining power, as the buyer determines the price of the maize. This has further exacerbated the level of distrust between the buyers and smallholder farmers.

TABLE 59. ORGANIZATIONS WORKING WITH SMALLHOLDER FARMERS AND SERVICES PROVIDED

Institution	Type of Institution	Services Provided
Ministry of Agriculture and Cooperatives	Government	<ul style="list-style-type: none"> Encourages farmers to form cooperatives for bulk selling of maize to the Food Reserve Agency (FRA).
Agriculture Support Programme	Donor Funded Initiative	<ul style="list-style-type: none"> Trains farmers in farming activities that encourage them to run farming as a business.
Micro Bankers Trust	Microfinance	<ul style="list-style-type: none"> Trains farmers to form village banks in order to access credit.
Land serve	Input Supplier	<ul style="list-style-type: none"> Supply inputs such as agrochemicals, fertilizer, vegetable seeds, grain bags, and machine oil. Sensitizes farmers on the use of agrochemicals and the availability of chemicals and inputs. Linked to a group of paprika farmers by PROFIT to buy paprika off the farmers as there was no available market.
Programme Against Malnutrition	Local NGO	<ul style="list-style-type: none"> Distributed food security packs to vulnerable but viable farmers in Chikupili. The packs included fertilizer and a variety of seeds.
SEED-CO	Input Supplier	<ul style="list-style-type: none"> Supplies seed (primarily maize seed) to smallholder farmers. Provides agro chemicals to smallholder farmers.
PANNAR	Input Supplier	<ul style="list-style-type: none"> Sells certified seed to both smallholder and commercial farmers. Major clients are smallholders who mainly buy maize, sunflower, vegetable seeds and beans. Provides promotional 500g input bags to farmers.

SUMMARY OF BASELINE RESEARCH FINDINGS

Smallholders occupy an important place (if not in terms of productivity or purchasing power at least in terms of numbers) in the cotton and beef cattle, and retail input services sectors. Nonetheless, they tend strongly to be marginal producers working small plots or land or managing small herds and are everywhere plagued by low levels of productivity (and in the base of cattle farmers, high rates of cattle morbidity and mortality); limited resources combined with a lack of access to formal financial services; a lack of access to, or use of, technology; and limited incentives to invest in commercial upgrading. They possess little market power and often sell, or purchase, under adverse market conditions and with limited market information, although they tend to rate buyers favorably. A poor road infrastructure imposes high transaction costs and inefficiencies on farmers and lead firms alike. A lack of storage facilities, moreover, also hampers productivity in the cotton sector and amplifies the disincentives to invest in upgrading. While cotton farming is an important source of household income, raising cattle is not. Neither sector creates meaningful employment for family or non-family members.

Horizontal linkages within the cotton and beef cattle sectors are relatively few and generally weak. There is some collaboration among smallholders via a pooling of resources to acquire or provide inputs and services, but this is limited to a relatively small minority. Similarly, vertical linkages also tend to be weak, particularly with lead firms and retail input providers, and are characterized by a lack of trust, although farmers do appear to have developed good relationships with agents. Lead firms in the cotton sector, however, have initiated efforts to strengthen their links, while providing more outgrower services to cotton farmers.

Overall, farmers do seek and receive information and advice/training on cotton farming and cattle rearing, which they typically find useful. Information centers, radio, and cell phones are the most important sources of information, whereas government agriculture officers are the most important source of advice/training. In some cases, such as conservation farming, farmers can demonstrate a willingness to adopt new farming practices, but substantial resistance to changing behavior remains. This applies not only to farming practices but also to adoption of veterinarian and other cattle raising practices. Farmers have also struggled to overcome the collective action problems involved with community-based cattle practices (e.g., dip tanks). Moreover, it is not assured that the private veterinarians can find a viable (profitable) business model for working with smallholder cattle farmers.

The retail input sector is underdeveloped with poor outreach to rural areas where smallholders live and work. A large majority of farmers is not aware of a shop selling farming inputs in their community and a similar low percentage of farmers have received information on available agricultural products and services. Farmers frequently have to travel long distances to purchase inputs. A perception that input sellers at times engage in fraudulent practices, moreover, appears to have weakened the trust between some smallholders and input sellers.

Usage of farming inputs is low across all farmers surveyed. A large majority of farmers purchase and use fertilizer, but a relatively small minority purchase and use pesticides, herbicides, or veterinary drugs. A

minority of smallholders also purchase a variety of farming services, including small minorities of farmers who purchase transport, herding, harvesting, motorized tillage, dipping, labor, and spraying, although a more significant minority do purchase oxygen tillage and weeding.

In contrast, nearly all participant farmers and three-quarters of control farmers have received advice or training in farming, mostly from government agricultural extension officers, the radio, or TV. There is no evidence, however, that input sellers offer embedded services to farmers; less than 1 percent of farmers received advice or training from input sellers.

PROFIT has undertaken a diverse set of activities to address the above problems in the cotton, beef cattle, and retain input supply chains. Given that this is only the baseline study, it is too soon to determine whether these activities will yield the desired outcomes and impacts, although this information should be available when the follow-up study is completed in two years.

In order to generate valid conclusions about impact, researchers made careful efforts to select control group samples that were comparable to the participant samples. Overall, the two groups appear to share broadly similar characteristics in terms of demographics, living standards, and business activities. There is, however, minor to moderate variation across the two groups. Thus the follow-up research will need to take care to ensure that differences are taken into account in assessing the impact of the program.

It will be important to review and document the program activities thoroughly as they are expected to evolve over time. Any significant changes in program activities will need to be incorporated into the analysis and their implications for understanding program impacts carefully explained.

ANNEX 1

PROFIT BASELINE SURVEY

COTTON SUB-SECTOR QUESTIONNAIRE

FOR USE IN CHOMA, SINAZONGWE, GWEMBE AND MONZE DISTRICTS OF ZAMBIA

USAID / DAI / PROFIT

MAY/JUNE 2006

FIRST, MAKE SURE YOU HAVE THE RIGHT RESPONDENT. THE ENUMERATOR MUST INTERVIEW THE PROPRIETOR/OWNER OF THE BEEF PART OF THE FARM. THE RESPONDENT SHOULD BE THE PERSON IN CHARGE AND ABLE TO SPEAK AUTHORITATIVELY ABOUT FARM ACTIVITIES. DO NOT INTERVIEW FARM LABORERS OR YOUNG BOYS OR GIRLS.

Introduction: "My name is..... I'm currently working on a study of the PROFIT programme. We're interviewing people here in [name of community & village] in order to get information about Cotton related issues. The information obtained will be used to assess the impact of the implementation of PROFIT as a programme. **All answers will be seen only by the research team and will be kept fully confidential.**

Have you been interviewed in the last five days for this study? **IF THE RESPONDENT HAS BEEN INTERVIEWED BEFORE, DO NOT INTERVIEW THIS PERSON AGAIN.** Tell them you cannot interview them a second time, thank them, and end the interview. If they have not been interviewed before, conduct the interview.

Always **politely ask the interviewee for permission** to interview him/her. Only after they have consented to be interviewed should you begin to ask questions.

001 Questionnaire Identification Number |__|__|__|__|__|

002 Team Code |__|__|__|

003 District Code |__| [11 Choma] [12 Gwembe] [13 Monze] [14 Sinazongwe]

004 Area/ Community Code |__|__|__| and Area Name _____

005 Household Code |__|__|__|__|__|

006 Respondent Code |__|__|__|__|__|

IMPORTANT DETAILS

<i>Interviewer's name and ID number</i>	
<i>Farmer's name</i>	
<i>Contact address</i>	
<i>Telephone number</i>	
<i>Interview date</i>	
<i>Indicate whether participant or control</i>	
<i>If participant, date began participating</i>	
<i>Location: district; community; village</i>	
<i>Person who showed you where to go with telephone number or address</i>	
<i>Description of how to reach the farm from the nearest well-known town or point, so that a stranger can find it. Include nearest churches, schools or other landmarks.</i>	
<i>Detailed sketch map of the location of the farm</i>	

Incomplete Interviews Log

	Visit 1	Visit 2	Visit 3	Visit 4
Date				
Interviewer				
Comment				

Comment codes: Appointment made for later today 1; Appointment made for another day 2; Refused to continue and no appointment made 3; Other (Specify) 4.

Questionnaire Summary Information

Section	Name of Section	Number of Questions
Section 0	Questionnaire Identification Data	06
Section 1	Household Characteristics	40
Section 2	Cotton Production Background Data	08
Section 3	Input Usage for Cotton Production	44
Section 4	Cotton Sales	5
Section 5	Group Dynamics	11
Section 6	Availability, Access And Use Of Information/Communication Services	7
Section 7	Farming Technology, Practices and Farmer Groups	4
Section 8	Other Crops Background Data	6
Section 8	Livestock and Farm Asset Ownership	4
Total number of questions		135

INTERVIEW START TIME: _____

INTERVIEW END TIME: _____

SUPERVISOR'S SIGNATURE: _____

SECTION 1: HOUSEHOLD CHARACTERISTICS

Now I am going to ask you a number of things about your household.

[TELL THE RESPONDENT THAT THE HOUSEHOLD IS DEFINED AS ALL THE RELATED PEOPLE, INCLUDING BABIES BUT EXCLUDING SERVANTS, ETC.) WHO USUALLY LIVE TOGETHER AND EAT FROM THE SAME POT].

No.	Questions and filters	Coding categories	Skip to
Q101	Are you the head of the household? <i>Hena ndunywe bamukamwini munzi na?</i>	Yes No	1 2
Q102	Record Sex Of The Respondent	Male Female	1 2
Q103	In what month and year were you born? <i>Ino mwakazyalwa lili? Mwezi amwaka nzi?</i>	Month Don't Know Month No Response Year Don't Know Year No Response	[] 88 99 [] 88 99
Q104	How old were you at your last birthday? <i>Ino kuciindi cino mwakakwanisya myaka yongaye yakuzyalwa?</i> (Compare & Correct Q103 OR 104 If Needed)	Age In Completed Years Don't Know No Response Estimate Best Answer	[] 88 99
Q105	Have you ever attended formal school? <i>Hena kuli nomwakanjide cikolo na?</i> (Ensure You Probe Adequately)	Yes No Don't Know No Response	1 2 88 99
Q106	What is the highest level of school you attended: primary, secondary or higher? <i>Ino mwakagolela mubbuku nzi?</i>	1. Lower Primary(sub A to Standard 2 or Grade 1 - 4) 2. Upper Primary (Standard 3-5 or Grade5- 7) 3. Junior Secondary (up to Grade 9 or Form 3) 4. Senior secondary (up to Grade 12 or Form 5) 5. Higher 888. Don't Know 999. No Response	
Q107	How many total years of education did you attend? <i>Ino mwakaiya myaka yongaye kucikolo?</i>	# Years Completed Don't Know No Response	[] 88 99

QUESTIONS & FILTERS					DK	NR	SKIP TO
Please fill in the following details							
Member ID	Q108 Name of Household member <i>Izina lya omwe, omwe mbomukkala limwi</i>	Q109 Sex of HH member 1 = Male 2 = Female <i>Mbasankwa na bakaintu?</i>	Q110 Age in completed years <i>bali amwaka na Mwezi yongaye?</i>	Q111 Occupation of HH member <i>Babeleka mulimo nzi</i> [USE OCCUPATION RESPONSE CODES PROVIDED OVERLEAF]			
1					888	999	
2					888	999	
3					888	999	
5					888	999	
6					888	999	
7					888	999	
8					888	999	
9					888	999	
10					888	999	
11					888	999	
12					888	999	
13					888	999	

14					888	999	
15					888	999	
16					888	999	
17					888	999	
18					888	999	
19					888	999	
20					888	999	

OCCUPATION RESPONSE CODES

1	WORK ON A FAMILY FARM	6	EMPLOYED OUTSIDE THE FAMILY FARM
2	RUNNING A BUSINESS/SELF EMPLOYED	7	FULLTIME HOUSEWIFE
3	FULLTIME STUDENT	9	OTHER (SPECIFY) _____
4	TOO YOUNG TO WORK		
5	TOO OLD TO WORK		

SECTION 1: HOUSEHOLD CHARACTERISTICS (CONTINUED)

INCOME & SOURCES

Q112	What are the three major sources of HOUSEHOLD income, starting with the most important? <i>Ninzila nzi nzyomubelesya kapati, zyotatwe kuti mujane mali akubelesya amukwasyi wanu?</i>	1	_____	888	999	
		2	_____	888	999	
		3	_____	888	999	
Q113	Do you have a bank account?		1. YES 2. NO []			

FOOD SECURITY

Q114	What were the major food crops that the HOUSEHOLD produced and consumed in the 2004/05 farming season? [LIST UP TO FOUR] <i>Ino zyisyango nzi zipati pati zyomwakatebula akubelesya kulya mubutebuzi bwamu 2005?</i>	888	999	
	WRITE ANSWER HERE			
	FOOD ITEM	QUANTITY OSUMED	COST IF PURCHASED	
	1. _____	[]	[]	888 999
	2. _____	[]	[]	888 999
	3. _____	[]	[]	888 999
	4. _____	[]	[]	888 999
Q115	How many whole/square meals did you eat yesterday? <i>Ino mwakalya ziindi zyongaye jilo?</i>	[]		

Q116	How long did the food crops that you harvested in the past year last? <i>Ino cakulya ncomwakatebude mwaka wainda mwakalya ciindi cilamfu buti nociyakumana?</i>	1 LESS THAN 12 MONTHS 2 12 MONTHS	[]	888	999	IF '2' GO TO Q118
Q117	If the food you harvested lasted less than 12 months, what was your MAIN source of food after your harvest ran out? <i>Na cakulya ncomwakatebude ticakamana mwaka, ino cakulya mwakalikucijanakuli nocakamana ncomwakatebude?</i>	1 Bought with own money 2 Given food by relatives or neighbours 3 Exchanged cash crops for food 4 Given food by food aid program 5 Sold/exchanged household goods for food	[]	888	999	

HOUSEHOLD EXPENDITURE [IF NOTHING, RECORD ZERO]

Q118	How much did your household spend on education in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongaye kucikolo mwezi wamana?</i>	[]	888	999	
Q119	How much did your household spend on food and groceries in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongaye kucakulya mwezi wamana?</i>	[]	888	999	

Q120	How much did your household spend on housing in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongaye kubbadelela ng'anda mwezi wamana?</i>	[]	888	999	
Q121	How much did your household spend on water and electricity in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongaye kubbadelela meenda amalayiti mwezi wamana?</i>	[]	888	999	
Q122	How much did your household spend on paraffin in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongaye kuula palafini mwezi wamana?</i>	[]	888	999	
Q123	How much did your household spend on clothing in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongaye kuula zisani mwezi wamana?</i>	[]	888	999	
Q124	How much did your household spend on medicines and hospital in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongaye kubbadelela misamu akubbadela kucibbadela mwezi wamana?</i>	[]	888	999	
Q125	How much did your household spend on transport in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongaye munyendo zyanu mwezi wamana?</i>	[]	888	999	

HOUSING					
Q126	[OBSERVE AND WRITE ANSWER, ONLY ASK IF YOU CAN'T TELL BY LOOKING] What is the wall material of the best house among the houses/huts occupied by the members of your household? <i>Ino ng'anda itegwa nimbotu akati kamaanda abelesegwa abantu bamumukwasyi wanu ayakidwe aanzi?</i>	1	Mud or cow dung		
		2	Concrete bricks		
		3	Iron sheets		
		4	Stone		
		5	Tiles		
		6	Wood		
		7	Grass/poles		
		8	Other(specify) _____		
Q127	[OBSERVE AND WRITE ANSWER, ONLY ASK IF YOU CAN'T TELL BY LOOKING] What is the roofing material of the best house among the houses/huts occupied by the members of your household? <i>Ino ciluli citegwa ncibotu akati kamaanda abelesegwa abantu bamumukwasyi wanu ciyakidwe aanzi?</i>	1	Grass/Straw/thatch	888	999
		2	Iron sheets	888	999
		3	Tiles	888	999
		4	Slates/concrete/cement	888	999
		5	Wood/planks	888	999
		6	Other (specify) _____	888	999
Q128	How many rooms or huts are occupied by all the members of your household? <i>Ino maanda abelesegwa abantu bamumukwasyi wanu amunzi aano ali ongaye?</i>			888	999
Q129	Does this house have a kitchen inside the house? <i>Ino ng'anda yanu iligisi nkikini mukati na?</i>	1	YES	888	999
		2	NO		
Q130	How many chairs with backs are in this house? (<i>Ino mujisi mipaando yongaye mung'anda yanu?</i>)			888	999
Q131	How many sofa sets are in this house? (<i>Ino mujisi maseeti ongaye mung'anda yanu?</i>)			888	999
Q132	How many tables are in this house? <i>Ino mujisi matebule ongaye mung'anda yanu?</i>			888	999
Q133	Do you have a domestic worker who is not related to the head of the household? <i>Hena mulijisi mubelesi waang'anda utali bbululu wanu na?</i>			888	999

SOURCE OF DRINKING WATER						
Q134	What is your main source of drinking water in the dry season? <i>Ino muteka kuli meenda akubelesya ang'anda mucilindi cacilimo?</i>	CODE	SOURCE			
		1	Piped water within the communal	888	999	
		2	Piped outside this community	888	999	
		3	A private well in the community	888	999	
		4	Water tank in the community	888	999	
		5	Pond/river/canal	888	999	
		6	Public well in the community	888	999	
Q135	How far is the source of drinking water in the dry season?	7	Other (specify) _____			
		1	Less than a km			
		2	1 – 3 Km			
Q136	What is your main source of drinking water in the wet season? <i>Ino muteka kuli meenda akubelesya ang'anda mucilindi camainza?</i>	3	Above 3 km			
		1	Piped water within the communal	888	999	
		2	Piped outside this community	888	999	
		3	A private well in the community	888	999	
		4	Water tank in the community	888	999	
		5	Pond/river/canal	888	999	

		6	Public well in the community	888	999	
		7	Other (specify) _____	888	999	
		1	Piped water within the communal			
Q137	How far is the source of drinking water in the wet season?	1	Less than a km			
		2	1 – 3 Km			
		3	Above 3 km			
TYPE OF TOILET FACILITY						
Q138	What is the type of toilet facility in this house? <i>Bushe icimbusu mwakwata pano n'ganda camusango shani?</i>		Flush latrine outside	1		
			Flush latrine inside the residence	2		
			Ordinary Pit latrine	3		
			VIP (Ventilated Improved Pit latrine)	4		
			Other (specify) _____	5		
			None	6	888	999
SOURCE OF LIGHTING/INFORMATION ACCESS						
Q139	What is the type of lighting in this house? <i>Ino mubelesya nzi kumunika mung'anda?</i>		Candle	1	888	999
			Paraffin lamp	2	888	999
			Pressure lamp	3	888	999
			Generator	4	888	999
			Solar	5	888	999
			Battery system	6	888	999
			Electricity	7	888	999
			Firewood/Grass	8	888	999
			Other (specify) _____			
COOKING UTENSILS						
Q140	What cooking/kitchen utensils do you have? <i>(Ino mujisi zyakujikila zyamusyobonzi?)</i>					
	1.Metal pots/kettles		[]	888	999	
	2.Charcoal stove		[]	888	999	
	3.Paraffin stove		[]	888	999	
	4.Gas/electric stove		[]	888	999	
	5.Gas/electric oven		[]	888	999	
	6.Free standing deep freezer		[]	888	999	
HOUSEHOLD GOODS						
Q141	Do you have the following goods in your household? <i>Hena mulijisi mpansya eezayi mung'anda yanu na?</i>		Write Number	DK	NR	SKIP TO
	1.TV	1. Yes 2. No	[]	888	999	
	3.Radio	1. Yes 2. No	[]	888	999	
	4.Radio-cassette player	1. Yes 2. No	[]	888	999	
	5.Video recorder	1. Yes 2. No	[]	888	999	
	6.Cell phone	1. Yes 2. No	[]	888	999	
	7.Fixed telephone line	1. Yes 2. No	[]	888	999	
	8.Still camera	1. Yes 2. No	[]	888	999	
	9.Cassette player	1. Yes 2. No	[]	888	999	
	10.CD player	1. Yes 2. No	[]	888	999	
	11.Hi-fi music center	1. Yes 2. No	[]	888	999	
	12.Video camera	1. Yes 2. No	[]	888	999	
	13.Sewing machine	1. Yes 2. No	[]	888	999	
	14.Vacuum cleaner	1. Yes 2. No	[]	888	999	
	15.Electric iron	1. Yes 2. No	[]	888	999	
	16.Car/pick-up	1. Yes 2. No	[]	888	999	
	17.Motorcycle	1. Yes 2. No	[]	888	999	
	18.Bicycle	1. Yes 2. No	[]	888	999	
	19.Truck/lorry	1. Yes 2. No	[]	888	999	
Q142	How many motor vehicles do you have? Ino mujisi myoota yongaye?		[]	888	999	

SECTION 2: COTTON PRODUCTION BACKGROUND DATA

(INSTRUCTIONS TO THE INTERVIEWER: LET RESPONDENT USE THE UNIT OF AREA/ VOLUME THEY ARE MOST FAMILIAR WITH, THEN USE THE CONVERSION TABLE PROVIDED TO CONVERT TO HECTARES/ APPROPRIATE VOLUME)

Q.NO	QUESTIONS AND FILTERS	WRITE IN	CODES		SKIP TO
			DK (circle)	NR (circle)	
Q201	What is the total area of the farm? <i>Ino nyika yampulazi yanu eeyi njimpati buti?</i>	[_____]	888	888	
Q202	How much of the total area of the farm was used to plant cotton last farming season (2004/05)? <i>Ino nyika njomwakasyangide buluba mainza amu 2004/05 yakali mpati buti?</i>	[_____]	888	999	
Q203	How much cotton did you harvest last farming season (2005)? <i>Ino mwakatebula buluba bunji buti mubutebuzi bwamu 2005?</i>	[_____]	888	999	
Q204	How much money did you get from cotton sales last farming season (2004/2005)? <i>Ino buluba bwamu bwakamupa mali ongaye mubutebezi bwamu 2004/2005?</i>	[_____]	888	999	
Q205	How much was a kg of cotton? <i>Ino mwakali kusambala malinzi akilo lyabuluba?</i>	[_____]	888	999	

SECTION 3: INPUT USAGE FOR COTTON PRODUCTION

FERTILIZERS, CHEMICALS & SEEDS			DK	NR	SKIP TO
Q301	Did you use any FERTILIZERS and CHEMICALS in cotton production in the 2004/05 farming season? <i>Hena mwakabelesya camutunzya mubuluba mumainza amu 2004/05?</i>	1. Yes 2. No	888	999	IF 'NO' GO TO Q307
Q302	If YES, how much? <i>Kuti na mwakabelesya, ino wakali munji buti?</i>	[_____]	888	999	
Q303	Who was the major supplier of the FERTILIZERS and CHEMICALS you used on cotton? SUPPLIER S (MAXIMUM OF TWO) 1 [_____] 2 [_____] <i>Ino mbabani bakamusambalide camutunzya ngomwakabikka mubuluba bwamu?</i>		888	999	
Q304	How much did you spend on buying FERTILIZERS and CHEMICALS? <i>Ino mwakabelesya mali ongaye kuula camutunzya?</i>	[_____]			
Q305	Did any of the suppliers of FERTILIZERS and CHEMICALS that you used also buy cotton from you?	1. Yes 2. No			
Q306	If YES, which ones? SUPPLIERS 1 [_____] 2 [_____]				

Q307	Did you use any PURCHASED COTTON SEED in cotton production in the 2004/05 farming season? <i>Hena mwakabelesya musamu ukwabilila malwazi kubuluba mumainza amu 2004/05?</i>	1. Yes 2. No	888	999	IF 'NO' GO TO Q313
Q308	If YES, how much seed did you buy? <i>Kuti na mwakabelesya, ino wakali munji buti?</i>	[_____]	888	999	
Q309	Who was the major supplier of the COTTON SEED you used? SUPPLIER S (MAXIMUM OF TWO) 1 [_____] 2 [_____] <i>Ino mbabani bakamusambalide musamu ukwabilila malwazi ngomwakabikka mubuluba bwamu?</i>		888	999	
Q310	How much did you spend on buying COTTON SEED? <i>Ino mwakabelesya mali ongaye kuula musamu ukwabilila malwazi kubuluba ooyu?</i>	[_____]			
Q311	Did any of the suppliers of COTTON SEED that you used also buy cotton from you?				
Q312	If YES, which ones? SUPPLIERS 1 [_____] 2 [_____]				

SERVICES					
Q313	Did you use any TILLAGE SERVICES in cotton production in the 2004/05 farming season? <i>Hena kuli bakumulimina mumuunda wabuluba bwanu mainza amu 2004/2005 na?</i>	1. YES 2. NO	888	999	IF 'NO' GO TO Q316
Q314	Who was the major supplier of the TILLAGE SERVICES you used ? <i>Ino mbaani bakamubelekela mulimo ooyu kapati?</i> SUPPLIERS (MAXIMUM OF TWO) 1. _____ 2. _____	_____	888	999	
Q315	How much did you spend on paying for TILLAGE SERVICES ? <i>Ino mwakabbadela mali ongaye kuli basikumulimina aaba?</i>	_____			
Q316	Did you use any CROP SPRAYING SERVICES in cotton production in the 2004/05 farming season? <i>Hena kuli nimwakapompela mubuluba bwanu mainza amu 2004/2005 na?</i>	1.			IF 'NO' GO TO Q319
Q317	Who was the major supplier of the CROP SPRAYING SERVICES you used ? <i>Ino mbaani bakamugwasya kumilimo yakupompela buluba?</i> SUPPLIER S (MAXIMUM OF TWO) 1. _____ 2. _____	2.			
Q318	How much did you spend on on paying for CROP SPRAYING SERVICES ? <i>Ino mwakabbadela mali ongaye kuli basikumupompela mubuluba bwanu?</i>	_____	888	999	

Q319	Did you use any WEEDING SERVICES in cotton production in the 2004/05 farming season? <i>Hena mwakagwasigwa mukulimina buluba mubulimi bwamu 2004/2005 na?</i>				IF 'NO' GOTO Q322
Q320	Who was the major supplier of the WEEDING SERVICES you used ? <i>Ino mbaani bakabeleka mulimo ooyu kapati?</i> SUPPLIER S (MAXIMUM OF TWO) 1. _____ 2. _____				
Q321	How much did you spend on on paying for WEEDING SERVICES ? <i>Ino mwakabbadela mali ongaye kuli basikumugwasya kulimina aaba?</i>	_____	888	999	
Q322	Did you use any HARVESTING SERVICES in cotton production in the 2004/05 farming season? <i>Hena mwakagwasigwa kutubula na mubutebuzi bwamu 2005?</i>	1. YES 2. NO			IF 'NO' GOTO Q325
Q323	Who was the major supplier of the HARVESTING SERVICES you used ? <i>Ino mbaani bakabeleka mulimo ooyu kapati?</i> SUPPLIER S (MAXIMUM OF TWO) 1. _____ 2. _____				
Q324	How much did you spend on on paying for HARVESTING SERVICES ? <i>Ino mwakabbadela mali ongaye kuli basikutebula aaba?</i>	_____	888	999	
Q325	Did you use any BANKING SERVICES in cotton production in the 2004/05 farming season? <i>Hena mwakagwasigwa munzila yakubelesya bbanki na mubulimi bwamu 2004/2005?</i>	1. YES 2. NO			IF 'NO' GOTO Q328
Q326	Who was the major supplier of the BANKING SERVICES you used ? <i>Ino mbaani bakamugwasya kapati mukubelesya bbanki mubulimi bwamu?</i> SUPPLIERS (MAXIMUM OF TWO) 1. _____ 2. _____				
Q327	What type of BANKING SERVICES did you use? <i>no bbanki mwakiibelesya munzila) yamusyoobon?</i> [IT MAY BE MORE THAN ONE -- CIRCLE ALL THAT IS MENTIONED] 1. Borrowing 2. Paying for imports 3. Savings 4. Security of assets 5. Other (specify) _____		888	999	
Q328	Did you borrow money or got inputs on credit for growing cotton last farming season? <i>Hena kuli nkumwakwelelede mali na kubweza loan kutegwa mulime buluba?</i>	1. Yes 2. No	888	999	IF 'NO' GO TO Q330
Q329	Please tell me where you got your credit and how much. [ASK FOR TWO MAJOR SOURCES] <i>Ndalomba mundambile nkomwakabweza chikwelete eeci alimwi ino mwakabweza malinzi.</i>				
	Code	Source of Credit	Amount of credit		
	1	Bank or Micro Finance institution	_____	888	999
	2	Buyers of outputs	_____	888	999
	3	Sellers of inputs	_____	888	999
	4	Informal sources	_____	888	999
Q330	Did you get any INSURANCE POLICY in cotton production in the 2004/05 farming season? <i>Hena mwakabelesya nzila zyakuwabilila eezyi mukulima buluba na mubulimi bwamu 2004/05?</i>				IF 'NO' GOTO Q333

Q331	Who was the supplier of the INSURANCE SERVICES you used ? SUPPLIER S (MAXIMUM OF TWO) INO MBAANI BAKAMUGWASILIZYA MUNZILA EEYI KAPATI?							
	1		2					
Q332	What type of INSURANCE POLICY did you have? <i>Ino bwakali bukwabilizi bwamusyooobonzi?</i> 1. Fire 2. Theft 3. Crop failure 4. Other (specify) _____					888	999	
Q333	Did you buy any farm implements and equipments for cotton production in the 2004/05 farming season? <i>Hena mwakaliulide yakubelesya na mukulima buluba mu 2004/2005?</i>							IF 'NO' GO TO Q336
Q334	Who was the major supplier of the FARM IMPLEMENTS AND EQUIPMENTS you bought? SUPPLIER S (MAXIMUM OF TWO) INO MBAANI BAKAMULETELA ZYIBELESYO EEZYI KAPATI?							
	1		2					
Q335	How much did you spend on buying farm implements and equipments? <i>Ino mwakabelesya mali ongaye mukuula zyibelesyo eezyi?</i>					888	999	
Q336	Did you pay for any farm implements and equipments repair services in cotton production in the 2004/05 farming season? <i>Hena kuli nimwakabbadelede kumilimo yakubamba zibelesyo mukulima buluba mu 2004/05 na?</i>							IF 'NO' GO TO Q339
Q337	Who was the major supplier of the repair services you bought? SUPPLIER S (MAXIMUM OF TWO) INO MBAANI BAKALIKUBAMBA KAPATI?							
	1		2					
Q338	How much did you pay for repair services? <i>Ino mwakabbadela mali ongaye kuli basikubamba?</i>					888	999	
Q339	Did you use any DRAFT ANIMALS in cotton production the 2004/05 farming season? <i>Hena mwakabelesya ng'ombe na mbongolo mukulima buluba mumainza amu 2004/05?</i>				1. YES 2. NO	888	999	IF 'NO' GO TO Q341
Q340	If YES, whose draft animals were they? <i>Kuti na mwakabelesya, ino ng'ombe na mbongolo zyakali zyanani?</i>					888	999	
	1	OWNED	2	BORROWED	3	HIRED/LEASED	4	SHARED
HIRE OF LABOUR								
Q341	Did you hire any people to do any kind of work for cotton production in 2004/05? <i>Hena mwakalitambide Bantu bamugwasya kulima muunda wabuluba na?</i>				1. YES 2. NO	888	999	IF 'NO' GO TO Q401
Q342	If YES, how many? <i>(Kuti na inzya, bakali bongaye?)</i>					888	999	
Q343	How many days did they work all together? <i>(Ino bakabeleka mazuba ongaye?)</i>					888	999	
Q344	How much did you pay them all (total)? <i>(Ino mwakabbadela mali ongaye?)</i>							

SECTION 4: COTTON SALES

Q.NO	QUESTIONS AND FILTERS		WRITE ANSWER HERE	CODES		SKIP TO						
				DK (circle)	NR (circle)							
			NAME OF COTTON BUYER									
Q401	Who were the major buyers of your cotton in 2005? <i>Ino mbaani bakaula buluba bwanu mubutebuzi bwamu 2005?</i>	1		888	999							
		2		888	999							
		3		888	999							
		4		888	999							
			CODES	WRITE CODE FOR TYPE OF BUYER								
Q402	What type of buyer is this? [ASK FOR BUYER LISTED IN Q401] <i>Ino basikuula aaba mbantu bali buti?</i>	1	The lead firm	Buyer 1: []	888	999						
		2	A processor	Buyer 2: []	888	999						
		3	A broker	Buyer 3: []	888	999						
		4	A local trader	Buyer 4: []	888	999						
			BUYER	QUANTITY								
Q403	How much cotton did you sell to each of the buyers mentioned in Q401? (WRITE AMOUNT) <i>Ino mwakasambala buluba bunji buti kuli omwe, omwe sikuula buluba?</i>	Buyer 1:	[]	888	999							
		Buyer 2:	[]	888	999							
		Buyer 3:	[]	888	999							
		Buyer 4:	[]	888	999							
Q404	How much cotton was rejected by each of the buyers mentioned Q401 due to poor quality? <i>Ino mbunji buti buluba bwakakakwa asikuula omwe, omwe akaambo kakubija kwabuluba?</i>	Buyer 1:	[]	888	999							
		Buyer 2:	[]	888	999							
		Buyer 3:	[]	888	999							
		Buyer 4:	[]	888	999							
Q405	How much money did you get from sales to each of the buyers mentioned in Q401? <i>Ino mwakasambala mali ongaye kuli omwe, omwe sikuula buluba?</i>	Buyer 1:	[]	888	999							
		Buyer 2:	[]	888	999							
		Buyer 3:	[]	888	999							
		Buyer 4:	[]	888	999							
Q406	What kind of payment agreement was made with each of the buyers mentioned in Q401? <i>Ino kuulana ooku kwakali kwamusyonzi asikuula omwe, omwe?</i> CODES <table border="1"> <tr> <td>1</td> <td>Spot Payment</td> <td>2</td> <td>Contract Sale</td> <td>3</td> <td>Both</td> </tr> </table>	1	Spot Payment	2	Contract Sale	3	Both	Buyer 1:	WRITE CODE HERE []	888	999	
		1	Spot Payment	2	Contract Sale	3	Both					
		Buyer 2:	[]	888	999							
		Buyer 3:	[]	888	999							
Buyer 4:	[]	888	999									
Q407	How satisfied are you with the buyer of your cotton? <i>Ino mwakakutilla buti mumakwebo aanu asikuula buluba mupati?</i> CODES <table border="1"> <tr> <td>1</td> <td>VERY SATISFIED</td> </tr> <tr> <td>2</td> <td>MODERATELY SATISFIED</td> </tr> <tr> <td>3</td> <td>NOT SATISFIED</td> </tr> </table>	1	VERY SATISFIED	2	MODERATELY SATISFIED	3	NOT SATISFIED	Buyer 1:	[]	888	999	
		1	VERY SATISFIED									
		2	MODERATELY SATISFIED									
		3	NOT SATISFIED									
Buyer 2:	[]	888	999									
Buyer 3:	[]	888	999									
Buyer 4:	[]	888	999									

SECTION 5: GROUP DYNAMICS

Q501	Are there farmer groups in this community? <i>Hena kuli tubunga twabalimi kucibaka kuno na?</i>	GROUP	1. YES 2. NO	CODES		SKIP TO
				DK (circle)	NR (circle)	IF 'NO' GO TO Q507
Q502	If so, what are their names? <i>Na inzya, ino twiitwa kuti nzi tubunga ootu?</i>	Group 1:		888	999	
		Group 2:		888	999	
		Group 3:		888	999	
		Group 4:		888	999	
Q503	What type of group is [NAME OF GROUP] _____? [ASK FOR EACH GROUP MENTIONED IN Q501] <i>Ino nkabunga kamusyoobonzi (zina lyakabunga)</i> CODES 1. A marketing cooperative 2. A buyer cooperative 3. A marketing/buyer cooperative 4. A producer association 6. Other (specify) _____	Group 1: []		888	999	
		Group 2: []		888	999	
		Group 3: []		888	999	
		Group 4: []		888	999	
Q504	Are you a member of [NAME OF GROUP] _____? [ASK FOR EACH GROUP MENTIONED IN Q501] <i>Hena munjide mukabunga aaka na?(zina lyakabunga)</i>	Group 1: []		888	999	IF 'NO' FOR ALL, GOTO Q509
		Group 2: []		888	999	
		Group 3: []		888	999	
		Group 4: []		888	999	
Q505	What benefits are you currently getting from being a member of [NAME OF GROUP] _____?[ASK FOR EACH GROUP MENTIONED IN Q504] <i>Ino mbubotunzi mbomujana mukuba memba?</i> [MAY BE MORE THAN ONE – WRITE ALL THAT APPLY] 1. Easy access to inputs 2. Easy access to credit 3. Easy access to extension services 4. Easier to sell farm produce 5. Source of production and market information 6. Easier to negotiate for good price 7. Easier to Organize transport 8. Other (specify): _____	Group 1: []		888	999	
		Group 2: []		888	999	
		Group 3: []		888	999	
		Group 4: []		888	999	
Q506	What benefits <i>would you like</i> to get from being a member of [NAME OF GROUP] _____? [ASK FOR EACH GROUP MENTIONED IN Q504] [MAY BE MORE THAN ONE – WRITE ALL THAT APPLY] <i>Ino mbubotunzi mbomuyanda kujana mukuba memba?</i> 1. Easy access to inputs 2. Easy access to credit 3. Easy access to extension services 4. Easier to sell farm produce 5. Source of production and/or market information 6. Easier to negotiate for good price 7. Easier to Organize transport 8. Other (specify): _____	Group 1: []		888	999	
		Group 2: []		888	999	
		Group 3: []		888	999	
		Group 4: []		888	999	
Q507	As a member of [NAME OF GROUP] _____, how often have you attended group meetings in the past 6 months? [ASK FOR EACH GROUP MENTIONED IN Q504] Mbuli memba, ino mwakaunka kumiswaangano yongaye myezi 6 yainda? 1. Always 2. Sometimes 3. Rarely	Group 1: []		888	999	
		Group 2: []		888	999	
		Group 3: []		888	999	
		Group 4: []		888	999	

Q508	Why are you not a member of [NAME OF GROUP] _____? [ASK FOR EACH GROUP NOT MENTIONED IN Q504]	Group 1:	<input type="text"/>	888	999	
		Group 2:	<input type="text"/>	888	999	
		Group 3:	<input type="text"/>	888	999	
		Group 4:	<input type="text"/>	888	999	
	<i>Ino nkaambonzi ncomutali bamemba bakabunga aaka?</i> 1. Too busy to attend meetings 2. I see no reason to join 3. Too many restrictions on membership 4. Short of money to pay for what they need 5. Lack of info or not knowing how to begin. 6. Other (specify) _____					
Q509	Did you put resources together with one or more other farmers in order to buy agricultural inputs? <i>Hena mwakabikka mali antoomwe nobalimi kutegwa muule zyakubelesya mubulimi?</i> 1 YES 2 NO					
Q510	Did you jointly acquire any services with one or more other farmers in the 2004/5 farming season? 1 YES 2 NO <i>Hena kuli nimwakatambide basikumugwasya antoomwe abalinyoko na mu mainza amu 2004/2005?</i>		888	999		
Q511	Did you join up with one or more other farmers for the sake of selling your produce in the 2004/05 farming season? <i>Hena mwakajitizyanya abamwi mukusambala butebuzi bwanu mu 2005 na?</i> 1 YES 2 NO					

SECTION 6: AVAILABILITY, ACCESS AND USE OF INFORMATION/COMMUNICATION SERVICES

Q601	How often do you use a cell phone, whether yours or someone else's, to receive or send information, whether SMS or voice, that is useful in the farming business? <i>Ino zinji buti ziindi zomubelesya selo fooni na yanu antela yamuntu biyo kujatikizya bulimi?</i> 1 Never 2 Occasionally 4 often				
Q602	How often do you use the Internet to send or receive information in your cotton farming business? <i>Ino mubelesya ziindi zyongaye internet mubulimi bwanu?</i> 1 Never 2 Sometime 4 often				
Q603	Have you listened to radio programmes broadcasted on agriculture in the past two weeks? <i>Hena kuli nomwa teeledede kuwalesi twaambo tujatikizya bulimi kuli makwabo mwiki zyobilo zyainda na?</i> 1 YES 2 NO				
Q604	Are there farmer information centres in this or nearby community? 1 YES 2 NO <i>Hena mulijisi busena kuno na munsiminsi akokuno nkomujana twaambo tujatikizya zyabulimi?</i>		888	999	IF 'NO' GO TO Q701
Q605	What type of information is provided by the information centre(s)? [MAY BE MORE THAN ONE – WRITE ALL THAT APPLY] <i>Ino twaambo twamusyobonzi tomujana kuzibaka eezyi?</i> 1. Information on new or better methods of farming 2. Information on better methods of managing farm enterprises 3. Information on input markets 4. Information on output markets 5. Other (specify) _____				
Q606	How is the information disseminated? (Ino twaambo ootu batupandulula buti?) [MAY BE MORE THAN ONE – WRITE ALL THAT APPLY] 1. By word of mouth 2. Through written material 3. Through radio 4. Through cell phones (SMS) 5. Through e-mail		888	999	
Q607	Has the information been helpful to you? <i>Ino twaambo ootu twakamugwasya na?</i> 1 YES 2 NO	<input type="text"/>	888	999	

SECTION 7: FARMING TECHNOLOGY & PRACTICES

Q.NO	QUESTIONS, FILTERS AND CODES				DK	NR	SKIP TO
Q701	Did you use any CFU (Conservation Farming Unit) recommended farming practice for cotton growing last farming season? <i>Hena mwakabelesyako nzila zyakulima nzyobayiisya ba CFU mukulima buluba mainza amu 2004/05?</i> 1 YES 2 NO				888	999	IF 'NO' GO TO Q703
Q702	Please tell me which CFU recommended farming practice you used for cotton growing last season. <i>Ndalomba mundaambile ino mba CFU nzi bakamukulwayizya kubelesya nzila eeyi kulima buluba mainza amu 2004/05</i>						
	Code	Farming Practice	Code	Farming Practice	DK	NR	SKIP TO
	1	Early land preparation	5	Crop rotation			
	2	Minimum tillage using hand hoes	6	Green manuring			
	3	Minimum tillage using animal power	7	Improved fallow			
	4	Minimum tillage using mechanized means			888	999	
Q703	Have you received any advice or training or information in cotton farming in the last one year? <i>Hena mwakatambula malailile antela lwiiyo na mulumbe kujatikizya bulimi bwabuluba na?</i> 1 YES 2 NO				888	999	IF 'NO' GO TO Q801
Q704	Please tell me the sources of training received in the last one year and how useful the advice, training, or information that you received was <i>Ino lwiiyo lwayinoyino awa mwakalujana kuli alimwi mbubotunzi mbumwajana kumalailile aayo, mulwiiyo na mumulumbe ngomwatambula.</i>						
	Code	Source of Training, Advice or Information	Usefulness of TA		DK	NR	SKIP TO
			1 VERY USEFUL				
			2 MODERATELY USEFUL				
			3 NOT USEFUL				
	1	Ministry of Agriculture Extension officers			888	999	
	2	Other extension officers			888	999	
	3	Suppliers of chemicals and fertilizers			888	999	
	4	Shops supplying inputs			888	999	
	5	Seminars and meetings			888	999	
	6	Dunavant/ other agribusiness company			888	999	
	7	Radio, TV			888	999	
	8	PROFIT			888	999	
	9	Posters			888	999	
	10	News papers, magazines			888	999	
	11	Producer association			888	999	
	12	Buyers of crops			888	999	
	13	Other (Specify) _____			888	999	

SECTION 8: OTHER CROPS BACKGROUND DATA

(INSTRUCTIONS TO THE INTERVIEWER: LET RESPONDENT USE THE UNIT OF AREA/ VOLUME THEY ARE MOST FAMILIAR WITH, THEN USE THE CONVERSION TABLE PROVIDED TO CONVERT TO HECTARES/ APPROPRIATE VOLUME)

Q.NO	QUESTIONS AND FILTERS	CODES		WRITE IN	CODES		SKIP TO
		A) CASH CROP B) FOOD CROP	A/ B		DK (circle)	NR (circle)	
Q801	How much of the total area of the farm was used to plant the major crops last farming season? <i>Ino mwakabelesya nyika ipati buti kusyanga zyisyango zyipati pati mumainza amu 2004/05?</i>	1. Maize		[]	888	999	
		2. Groundnuts		[]	888	999	
		3. Beans		[]	888	999	
		4. Sunflower		[]	888	999	
		5. Cassava		[]	888	999	
		6. Tobacco		[]	888	999	
		7. Rice		[]	888	999	
		8. Sorghum		[]	888	999	
		9. Millet		[]	888	999	
		10 Other (specify) _____		[]	888	999	

Q802	How much of the major crop(s) did you harvest last farming season(2005)? <i>Ino butebuzi bwakali buti kuzwa kuzyisyo zityati pati mubutebuzi bwamu 2005?</i>	1. Maize			888	999	
		2. Groundnuts			888	999	
		3. Beans			888	999	
		4. Sunflower			888	999	
		5. Cassava			888	999	
		6. Tobacco			888	999	
		7. Rice			888	999	
		8. Sorghum			888	999	
		9. Millet			888	999	
		10 Other (specify) _____			888	999	
Q803	How much money did you get from the major crop sales last farming season? <i>Ino mwakajana mali ongaye nomwakasambala butebuzi bwamu bwa zyisyo zityati pati mu 2005?</i>	1. Maize			888	999	
		2. Groundnuts			888	999	
		3. Beans			888	999	
		4. Sunflower			888	999	
		5. Cassava			888	999	
		6. Tobacco			888	999	
		7. Rice			888	999	
		8. Sorghum			888	999	
		9. Millet			888	999	
		10 Other (specify) _____			888	999	
Q804	Did you use any irrigation on any of the crops in the 2004/2005 farming season? <i>Hena kuli nomwabelesyede kutilaila cisyango cilicoonse mubulimi bwamu 2004/2005 na?</i>		0 = NO	1 = YES			IF 'NO' GO TO Q901
		1. Maize			888	999	
		2. Groundnuts			888	999	
		3. Beans			888	999	
		4. Sunflower			888	999	
		5. Cassava			888	999	
		6. Tobacco			888	999	
		7. Rice			888	999	
		8. Sorghum			888	999	
		9. Millet			888	999	
Q805	If you used irrigation last year, what was the main irrigation type that you used FOR EACH crop you irrigated? <i>Kuti na mwakatilaila mwaka wamana, ino ninzila nzi njomwakabelesya kapati kusyango comwe, comwe?</i>						
Q806	If you used irrigation last year, what was the main source of irrigation water FOR EACH crop you irrigated? <i>Kuti na mwakatilaila mwaka wamana, ino meenda mwakali kwaajana kuli ngomwaalikubelesya kucisyango comwe, comwe?</i>						

SECTION 9: LIVESTOCK AND FARM ASSET OWNERSHIP

								DK	NR	SKIP TO
Q901	Do you own any livestock? 1. Yes; 2. No <i>Hena mulijisi banyama bavubidwe na?</i>							888	999	IF 'NO' GO TO Q903
Q902	If yes, please tell me the types and numbers of livestock you own (<i>Na inzya, ndalomba kuti mundaambile misyobo amweelwe wabanyama banu</i>)									
	Livestock		Number owned		DK	NR	Livestock		Number owned	
	1	Cattle			888	999	7	Chickens		
	2	Donkey			888	999	8	Guinea fowls		
	3	Sheep			888	999	9	Ducks		
	4	Goats			888	999	10	Pigeons		
	5	Pigs			888	999	11	Other [specify]		
	6	Rabbits			888	999				
Q903	Do you own any farm assets? 1. Yes; 2. No <i>Hena mulijisi zykubelesyo zyomubelesya mubulimi bwanu na?</i>							888	999	
Q904	If yes, please tell me the types and numbers of farm assets you own <i>Na inzya, ndalomba mundaambile misyobo alimwi amweelwe wazyibelesyo zyanu?</i>									
	ASSET		Number owned		DK	NR	ASSET		Number owned	
	1	Hoes			888	999	9	Crop sprayers		
	2	Ploughs			888	999	10	Ox-carts		
	3	Ridgers			888	999	11	Tractors		
	4	Harrows			888	999	12	Rippers		
	5	Cultivator			888	999	13	Other [specify] _____		
	6	Shaka hoes			888	999	14	Hand grinding mill		
	7	Farm motorcycle			888	999	15	Hammermill		
	8	Maize Sheller			888	999	16	Fishing boat		
	9	Treadle pump			888	999	17	Bicycle used for business		

ANNEX 2

PROFIT BASELINE SURVEY

BEEF SUB-SECTOR QUESTIONNAIRE

FOR USE IN KALOMO AND CHOMA DISTRICTS OF ZAMBIA

USAID / DAI / PROFIT

MAY/JUNE 2006

FIRST, MAKE SURE YOU HAVE THE RIGHT RESPONDENT. THE ENUMERATOR MUST INTERVIEW THE PROPRIETOR/OWNER OF THE BEEF PART OF THE FARM. THE RESPONDENT SHOULD BE THE PERSON IN CHARGE AND ABLE TO SPEAK AUTHORITATIVELY ABOUT FARM ACTIVITIES. DO NOT INTERVIEW FARM LABORERS OR YOUNG BOYS OR GIRLS.

Introduction: "My name is..... I'm currently working on a study of the PROFIT programme. We're interviewing people here in [name of community & village] in order to get information about Cotton related issues. The information obtained will be used to assess the impact of the implementation of PROFIT as a programme. **All answers will be seen only by the research team and will be kept fully confidential.**

Have you been interviewed in the last five days for this study? **IF THE RESPONDENT HAS BEEN INTERVIEWED BEFORE, DO NOT INTERVIEW THIS PERSON AGAIN.** Tell them you cannot interview them a second time, thank them, and end the interview. If they have not been interviewed before, conduct the interview.

Always **politely ask the interviewee for permission** to interview him/her. Only after they have consented to be interviewed should you begin to ask questions.

001 Questionnaire Identification Number |_|_|_|_|_|_|_|_|

002 Team Code |_|_|_|

003 District |_|_|_|_|_| [21. Choma] [22. Kalomo]

004 Area/ Community Code |_|_|_|_|_| and Area Name _____

005 Household Code |_|_|_|_|_|_|_|_|

006 Respondent Code |_|_|_|_|_|_|_|_|

IMPORTANT DETAILS

<i>Interviewer's name and ID number</i>	
<i>Farmer's name</i>	
<i>Contact address</i>	
<i>Telephone number</i>	
<i>Interview date</i>	

<i>Indicate whether participant or control</i>	
<i>If participant, date began participating</i>	
<i>Location: district; community; village</i>	
<i>Person who showed you where to go with telephone number or address</i>	
<i>Description of how to reach the farm from the nearest well-known town or point, so that a stranger can find it. Include nearest churches, schools or other landmarks.</i>	
<i>Detailed sketch map of the location of the farm</i>	

Incomplete Interviews Log

	Visit 1	Visit 2	Visit 3	Visit 4
Date				
Interviewer				
Comment				

Comment codes: Appointment made for later today 1; Appointment made for another day 2; Refused to continue and no appointment made 3; Other (Specify) 4.

Questionnaire Summary Information

Section	Name of Section	Number of Questions
Section 0	Questionnaire Identification Data	06
Section 1	Household Characteristics	42
Section 2	Cattle Rearing Background Data	11
Section 3	Cattle Sales	10
Section 4	Input Usage For Cattle Rearing	45
Section 6	Morbidity and Mortality	23
Section 7	Availability, Access and Use of Information/communication Services	7
Section 8	Technical Advice	02
Section 9	Group Dynamics	11

Section 10	Crops	06
Section 11	Livestock and Farm Asset Ownership	04
<i>Total Number Of Questions</i>		<i>167</i>

INTERVIEW START TIME: _____

INTERVIEW END TIME: _____

SUPERVISOR SIGNATURE: _____

SECTION 1: HOUSEHOLD CHARACTERISTICS

Now I am going ask you a number of things about your household.

[TELL THE RESPONDENT THAT THE HOUSEHOLD IS DEFINED AS ALL THE RELATED PEOPLE, INCLUDING BABIES BUT EXCLUDING SERVANTS, ETC.) WHO USUALLY LIVE TOGETHER AND EAT FROM THE SAME POT].

No.	Questions and filters	Coding categories		Skip to
Q143	Are you the head of the household? <i>Hena ndunywe bamukamwini munzi na?</i>	Yes	1	
		No	2	
Q144	Record Sex Of The Respondent	Male	1	
		Female	2	
Q145	In what month and year were you born? <i>Ino mwakazyalwa lili? Mwezi amwaka nzi?</i>	Month Don't Know Month No Response Year Don't Know Year No Response	[][] 88 99 [][] 88 99	
Q146	How old were you at your last birthday? <i>Ino kuciindi cino mwakakwanisya myaka yongaye yakuzyalwa?</i> (Compare & Correct Q103 OR 104 If Needed)	Age In Completed Years Don't Know No Response	[][] 88 99	
Q147	Have you ever attended formal school? <i>Hena kuli nomwakanjide cikolo na?</i> (Ensure You Probe Adequately)	Yes No Don't Know No Response	1 2 88 99	IF 'NO' SKIP TO Q108
Q148	What is the highest level of school you attended: primary, secondary or higher? CIRCLE ONE <i>Ino mwakagolela mubbuku nzi?</i>	1. Lower Primary(sub A to Standard 2 or Grade 1 - 4) 2. Upper Primary (Standard 3-5 or Grade5- 7) 3. Junior Secondary (up to Grade 9 or Form 3) 4. Senior secondary (up to Grade 12 or Form 5) 5. Higher 888. Don't Know 999. No Response		
Q149	How many total years of education did you attend? <i>Ino mwakaiya myaka yongaye kucikolo?</i>	# Years Completed Don't Know No Response	[][] 88 99	

QUESTIONS & FILTERS						DK	NR	SKIP TO
Please fill in the following details								
Member ID	Q150 Name of Household member <i>Izina lya omwe, omwe mbomukkala limwi</i>	Q151 Sex of HH member 1 = Male 2 = Female <i>Mbasankwa na mbakaintu?</i>	Q152 Age in completed years <i>bali amwaka na Mwezi yongaye?</i>	Q153 Occupation of HH member <i>Babeleka mulimo nzi</i> [USE OCCUPATION RESPONSE CODES PROVIDED BELOW]				
1					888	999		
2					888	999		
3					888	999		
5					888	999		
6					888	999		
7					888	999		
8					888	999		
9					888	999		
10					888	999		
11					888	999		
12					888	999		
13					888	999		
14					888	999		
15					888	999		
16					888	999		

17					888	999	
18					888	999	
19					888	999	
20					888	999	

OCCUPATION RESPONSE CODES

1	WORK ON A FAMILY FARM	6	EMPLOYED OUTSIDE THE FAMILY FARM
2	RUNNING A BUSINESS/SELF EMPLOYED	7	FULLTIME HOUSEWIFE
3	FULLTIME STUDENT	9	OTHER (SPECIFY) _____
4	TOO YOUNG TO WORK		
5	TOO OLD TO WORK		

INCOME & SOURCES

[WRITE SOURCE OF INCOME]

Q154	What are the three major sources of HOUSEHOLD income, starting with the most important? <i>Ninziila nzi nzyomubelesya kapati, zyotatwe kuti mujane mali akubelesya amukwasyi wanu?</i>	1				[]	888	999	
		2				[]	888	999	
		3				[]	888	999	
		CODES							
		1	First	2	Second	3	Third		
Q155	Do you have a bank account?	1. YES 2. NO							

FOOD SECURITY

Q156	What were the major food crops that the HOUSEHOLD produced and consumed in the 2004/05 farming season? [LIST UP TO FOUR] <i>Ino zyisyangoni nzi zipati pali ziomwakatebula akubelesya kulya mubutebuzi bwamu 2005?</i>	888	999			
		888	999				
	WRITE ANSWER HERE						
	FOOD ITEM	QUANTITY ONSUMED	COST IF PURCHASED				
	1. _____	[]	[]	888 999			
2. _____	[]	[]	888 999				
3. _____	[]	[]	888 999				
4. _____	[]	[]	888 999				
Q157	How many whole/square meals did you eat yesterday? <i>Ino mwakalya ziindi zyongaye jilo?</i>	[]	888	999			
Q158	How long did the food crops that you harvested in the past year last? <i>Ino cakulya ncomwakatebude mwaka wainda mwakalya ciindi cilamfu buti nociyakumana?</i>	1	LESS THAN 12 MONTHS	[]	888	999	IF '2' SKIP TO Q118
		2	12 MONTHS				
Q159	If the food you harvested lasted less than 12 months, what was your main source of food after your harvest ran out? <i>Na cakulya ncomwakatebude ticakamana mwaka, ino cakulya mwakalikucijanakuhi nocakamana ncomwakatebude?</i>	1	Bought with own money	[]	888	999	
		2	Given food by relatives or neighbours				
		3	Exchanged cash crops for food				
		4	Given food by food aid program				
		5	Sold/exchanged household goods for food				

HOUSEHOLD EXPENDITURE

Q160	How much did your household spend on education in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongayi kucikolo mwaka wamana?</i>	[]	888	999	
Q161	How much did your household spend on food and groceries in the last month 12 months? <i>Ino mumukwasyi wanu mwakabelesya mali ongayi kacakulya mwaka wamana?</i>	[]	888	999	
Q162	How much did your household spend on housing in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongayi kubadelela ng'anda mwaka wamana?</i>	[]	888	999	
Q163	How much did your household spend on water and electricity in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongayi kubadelela meenda amalayiti mwaka wamana?</i>	[]	888	999	
Q164	How much did your household spend on paraffin in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongayi kuula palafini mwaka wamana?</i>	[]	888	999	
Q165	How much did your household spend on clothing in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongayi kuula zisani mwaka wamana?</i>	[]	888	999	

Q166	How much did your household spend on medicines and hospital fees in the last 12 months (1YEAR)? <i>Ino mumukwasyi wanu mwakabelesya mali ongaye kubbadelela misamu akubbadela kucibbadela mwaka wamana?</i>		888	999	
Q167	How much did your household spend on transport in the last 12 months (1YEAR)?? <i>Ino mumukwasyi wanu mwakabelesya mali ongaye munyendo zyanumwaka wamana?</i>		888	999	

HOUSING					
Q168	[OBSERVE AND WRITE ANSWER, ONLY ASK IF YOU CAN'T TELL BY LOOKING] What is the wall material of the best house among the houses/huts occupied by the members of your household?	1	Mud or cow dung	888	999
		2	Concrete bricks		
		3	Iron sheets		
		4	Stone		
		5	Tiles		
		6	Wood		
		7	Grass/poles		
		8	Other(specify)		
Q169	[OBSERVE AND WRITE ANSWER, ONLY ASK IF YOU CAN'T TELL BY LOOKING] What is the roofing material of the best house among the houses/huts occupied by the members of your household?	1	Grass/Straw/thatch	888	999
		2	Iron sheets	888	999
		3	Tiles	888	999
		4	Slates/concrete/cement	888	999
		5	Wood/planks	888	999
		6		888	999
			Other (specify)	888	999
Q170	How many rooms or huts are occupied by all the members of your household? <i>Ino maanda abelesegwa abantu bamumukwasyi wanu amunzi aano ali ongaye?</i>			888	999
Q171	Does this house have a kitchen inside the house? <i>Ino ng'anda yanu iligisi nkikini mukati na?</i>	1	YES	888	999
		2	NO		
Q172	How many chairs with backs are in this house? (<i>Ino mujisi mipaando yongaye mung'anda yanu?</i>)			888	999
Q173	How many sofa sets are in this house? (<i>Ino mujisi maseeti ongaye mung'anda yanu?</i>)			888	999
Q174	How many tables are in this house? <i>Ino mujisi matebule ongaye mung'anda yanu?</i>			888	999
Q175	Do you have a domestic worker who is not related to the head of the household? <i>Hena mulijisi mubelesi waang'anda utali bbululu wanu na?</i>			888	999

SOURCE OF DRINKING WATER					
Q176	What is your main source of drinking water in the dry season? <i>Ino muteka kuli meenda akubelesya ang'anda mucindi cacilimo?</i>	CODE	SOURCE		
		1	Piped water within the communal	888	999
		2	Piped outside this community	888	999
		3	A private well in the community	888	999
		4	Water tank in the community	888	999
		5	Pond/river/canal	888	999
		6	Public well in the community	888	999
		7	Other (specify)		
Q177	How far is the source of drinking water in the dry season?	1	Less than a km		
		2	1 – 3 Km		
		3	Above 3 km		
Q178	What is your main source of drinking water in the wet season? <i>Ino muteka kuli meenda akubelesya ang'anda mucindi camainza?</i>	1	Piped water within the communal	888	999
		2	Piped outside this community	888	999
		3	A private well in the community	888	999
		4	Water tank in the community	888	999
		5	Pond/river/canal	888	999
		6	Public well in the community	888	999
		7	Other (specify)	888	999
		1	Piped water within the communal		

Q179	How far is the source of drinking water in the wet season?	1	Less than a km			
		2	1 – 3 Km			
		3	Above 3 km			

TYPE OF TOILET FACILITY						
Q180	What is the type of toilet facility in this house? <i>Bushe icimbusu mwakwata pano n'ganda camusango shani?</i>	Flush latrine outside	1			
		Flush latrine inside the residence	2			
		Ordinary Pit latrine	3			
		VIP (Ventilated Improved Pit latrine)	4			
		Other (specify)	5			
		None	6	888	999	

SOURCE OF LIGHTING/INFORMATION ACCESS						
Q181	What is the type of lighting in this house? <i>Ino mubelesya nzi kumunika mung'anda?</i>	Candle	1	888	999	
		Paraffin lamp	2	888	999	
		Pressure lamp	3	888	999	
		Generator	4	888	999	
		Solar	5	888	999	
		Battery system	6	888	999	
		Electricity	7	888	999	
		Firewood/Grass	8	888	999	
		Other (specify)				

COOKING UTENSILS						
Q182	What cooking/kitchen utensils do you have? <i>(Ino mujisi zyakujikila zyamusyobonzi?)</i>					
	1.Metal pots/kettles	<input type="text"/>	888	999		
	2.Charcoal stove	<input type="text"/>	888	999		
	3.Paraffin stove	<input type="text"/>	888	999		
	4.Gas/electric stove	<input type="text"/>	888	999		
	5.Gas/electric oven	<input type="text"/>	888	999		
	6.Free standing deep freezer	<input type="text"/>	888	999		

HOUSEHOLD GOODS						
Q183	Do you have the following goods in your household? <i>Hena mulijisi mpansya eezyi mung'anda yanu na?</i>		Write Number	DK	NR	SKIP TO
	1.TV	1. Yes 2. No	<input type="text"/>	888	999	
	3.Radio	1. Yes 2. No	<input type="text"/>	888	999	
	4.Radio-cassette player	1. Yes 2. No	<input type="text"/>	888	999	
	5.Video recorder	1. Yes 2. No	<input type="text"/>	888	999	
	6.Cell phone	1. Yes 2. No	<input type="text"/>	888	999	
	7.Fixed telephone line	1. Yes 2. No	<input type="text"/>	888	999	
	8.Still camera	1. Yes 2. No	<input type="text"/>	888	999	
	9.Cassette player	1. Yes 2. No	<input type="text"/>	888	999	
	10.CD player	1. Yes 2. No	<input type="text"/>	888	999	
	11.Hi-fi music center	1. Yes 2. No	<input type="text"/>	888	999	
	12.Video camera	1. Yes 2. No	<input type="text"/>	888	999	
	13.Sewing machine	1. Yes 2. No	<input type="text"/>	888	999	
	14.Vacuum cleaner	1. Yes 2. No	<input type="text"/>	888	999	
	15.Electric iron	1. Yes 2. No	<input type="text"/>	888	999	
	16.Car/pick-up	1. Yes 2. No	<input type="text"/>	888	999	
	17.Motorcycle	1. Yes 2. No	<input type="text"/>	888	999	
	18.Bicycle	1. Yes 2. No	<input type="text"/>	888	999	
	19.Truck/lorry	1. Yes 2. No	<input type="text"/>	888	999	
Q184	How many motor vehicles do you have?		<input type="text"/>	888	999	

SECTION 2: CATTLE REARING BACKGROUND DATA

(INSTRUCTIONS TO THE INTERVIEWER: LET RESPONDENT USE THE UNIT OF AREA/ VOLUME THEY ARE MOST FAMILIAR WITH, THEN USE THE CONVERSION TABLE PROVIDED TO CONVERT TO HECTARES/ APPROPRIATE VOLUME)

QN	QUESTIONS & FILTERS	WRITE HERE	DK	NR	SKIP TO						
Q201	What is the total area of the farm? <i>Ino nyika ampulazi yanu eeyi njimpati buti?</i>	<input type="text"/>	888	999							
Q202	Do you graze cattle on your farm or you use communal grazing area? <table border="1" style="width: 100%;"> <tr> <td>1</td><td>Own farm</td> <td>2</td><td>Communal land</td> <td>3</td><td>Both</td> </tr> </table> <i>Hena ng'ombe zyanu zyicelela mumpulazi yanu antela mumacelelo acuundu coonse?</i>	1	Own farm	2	Communal land	3	Both		888	999	IF '2' GOTO Q204
1	Own farm	2	Communal land	3	Both						
Q203	If you use your own farm land, how big is your grazing farmland? <i>Kuti na mubelesya mpulazi yanu, ino macelelo aaya mapati buti mumpulazi yanu?</i>	<input type="text"/>	888	999							
CATTLE INVENTORY			DK	NR	SKIP TO						
Q204	How many and what types of cattle did you own around this time last year? <i>Ino mwakajisi ng'ombe zyongaye mbuli cecino ciindi mwaka wamana?</i>	1. Heifers <input type="text"/>	888	999							
		2. Bulls <input type="text"/>	888	999							
		3. Steers <input type="text"/>	888	999							
		4. Cows <input type="text"/>									
Q205	How many calves were born in the past 12 months? <i>Ino kwakazyalwa boombe bongaye mumyezi 12 yainda?</i>	Males <input type="text"/>	888	999							
		Females <input type="text"/>	888	999							
Q206	How many cattle died in the past 12 months? <i>Ino kwakafiwa ng'ombe zyongaye mumyezi 12 yainda?</i>	1. Heifers <input type="text"/>	888	999							
		2. Bulls <input type="text"/>									
		3. Steers <input type="text"/>									
		4. Cows <input type="text"/>									
Q207	How many cattle did you purchase in the past 12 months? <i>Ino mwakaula ng'ombe zyongaye mumyezi 12 yainda?</i>	1. Heifers <input type="text"/>	888	999							
		2. Bulls <input type="text"/>									
		3. Steers <input type="text"/>									
		4. Cows <input type="text"/>									
Q208	Why did you buy cattle in the past 12 months? [MAY BE MORE THAN ONE – WRITE ALL THAT APPLY] 1. To increase the herd 2. To bring in new breeds 3. To meet sales demand/obligation 4. Other (specify) _____										
Q209	How many cattle were stolen in the past 12 months? <i>Ino mwakabbidwa ng'ombe zyongaye mumyezi 12 yainda?</i>	1. Heifers <input type="text"/>	888	999							
		2. Bulls <input type="text"/>									
		3. Steers <input type="text"/>									
		4. Cows <input type="text"/>									
Q210	How many cattle do you own now (including those you have hired out)? <i>Ino mujisi ng'ombe zyongaye ono?</i>	1. Heifers <input type="text"/>	888	999							
		2. Bulls <input type="text"/>									
		3. Steers <input type="text"/>									
		4. Cows <input type="text"/>									
Q211	How many cattle did you sell in the past 12 months (including those slaughtered & sold as meat)? <i>Ino mwakasambala ng'ombe zyongaye mumyezi 12 yainda?</i>	1. Heifers <input type="text"/>	888	999	IF NONE, GO TO Q401						
		2. Bulls <input type="text"/>									
		3. Steers <input type="text"/>									
		4. Cows <input type="text"/>									
	[RECONCILE THE INVENTORY: STOCK A YEAR AGO, PLUS NET CHANGES, SHOULD EQUAL STOCK TODAY]										

SECTION 3: CATTLE SALES

Q.NO	QUESTIONS AND FILTERS		WRITE ANSWER HERE		CO DES		SKIP TO
			NAME OF CATTLE BUYER		DK (circle)	NR (circle)	
Q345	Who were the major buyers of your cattle in the past 12 months? <i>Mbaani bakali kuula kapati ng'ombe zyanu mu 2005?</i>	1			888	999	
		2			888	999	
		3			888	999	
		4			888	999	
Q346	What type of buyer is this? [ASK FOR EACH BUYER LISTED ABOVE] <i>(Ino mbasikuula bamusyonzi?)</i> <div style="display: flex; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin: 2px;">1 THE LEAD FIRM</div> <div style="border: 1px solid black; padding: 2px; margin: 2px;">2 A PROCESSOR</div> <div style="border: 1px solid black; padding: 2px; margin: 2px;">3 A BROKER</div> <div style="border: 1px solid black; padding: 2px; margin: 2px;">4 A LOCAL TRADER</div> </div>	Buyer 1: <input type="text"/>		888	999		
		Buyer 2: <input type="text"/>		888	999		
		Buyer 3: <input type="text"/>		888	999		
		Buyer 4: <input type="text"/>		888	999		
Q347	How much cattle did you sell to each of the buyers mentioned in Q301 in the past 12 months? <i>Ino mwakasambala ng'ombe zyongaye kuli sikuula omwe, omwe?</i>	Buyer 1:	<input type="text"/>	888	999		
		Buyer 2:	<input type="text"/>	888	999		
		Buyer 3:	<input type="text"/>	888	999		
		Buyer 4:	<input type="text"/>	888	999		
Q348	How many cattle were rejected by each of the buyers mentioned in Q301 due to poor quality in the past 12 months? <i>(Ino ng'ombe zyongaye zyakakakwa kuli basikuula akaambo kakutabakabotu?)</i>	Buyer 1:	<input type="text"/>	888	999		
		Buyer 2:	<input type="text"/>	888	999		
		Buyer 3:	<input type="text"/>	888	999		
		Buyer 4:	<input type="text"/>	888	999		
Q349	How much money did you get from sales to each of the buyers mentioned in Q301 in the past 12 months? <i>Ino mwakasambala mali ongaye kuli omwe, omwe wabasikuula?</i>	Buyer 1:	<input type="text"/>	888	999		
		Buyer 2:	<input type="text"/>	888	999		
		Buyer 3:	<input type="text"/>	888	999		
		Buyer 4:	<input type="text"/>	888	999		
Q350	What kind of payment agreement was made with each of the buyers mentioned in Q301? CODES <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">1 Spot Payment</div> <div style="border: 1px solid black; padding: 2px;">2 Contract Sale</div> <div style="border: 1px solid black; padding: 2px;">3 Both</div> </div> <i>Ino mwakali kuulana buti aomwe, omwe wabasikuula?</i>	Buyer 1:	<input type="text"/>	888	999		
		Buyer 2:	<input type="text"/>	888	999		
		Buyer 3:	<input type="text"/>	888	999		
		Buyer 4:	<input type="text"/>	888	999		
Q351	What was the major reason for selling? <i>Ino ncinzi cipati cakapa kuli musambale ng'ombe?</i> CODES <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">1 Commercial</div> <div style="border: 1px solid black; padding: 2px;">2 Emergency</div> <div style="border: 1px solid black; padding: 2px;">3 Raise cash for school fees</div> <div style="border: 1px solid black; padding: 2px;">4 Raise cash for medicals</div> <div style="border: 1px solid black; padding: 2px;">5 Raise cash for dowry</div> <div style="border: 1px solid black; padding: 2px;">6 Other (specify) _____</div> </div>	1 st Sale:	<input type="text"/>	888	999		
		2 nd Sale:	<input type="text"/>	888	999		
		3 rd Sale:	<input type="text"/>	888	999		
		4 th Sale:	<input type="text"/>	888	999		
Q352	For the major buyer mentioned in Q301, what was the usual place where the cattle sales took place? <i>(Ino nkukuli nkomwakali kusambalila ng'ombe zyanu?)</i> CODES <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">1 At the farm trader/agent</div> <div style="border: 1px solid black; padding: 2px;">2 At abattoir</div> <div style="border: 1px solid black; padding: 2px;">3 At feed lot</div> <div style="border: 1px solid black; padding: 2px;">4 At auction</div> <div style="border: 1px solid black; padding: 2px;">5 Butchery</div> <div style="border: 1px solid black; padding: 2px;">6 Market</div> </div>	Buyer 1:	<input type="text"/>	888	999		
		Buyer 2:	<input type="text"/>	888	999		
		Buyer 3:	<input type="text"/>	888	999		
		Buyer 4:	<input type="text"/>	888	999		
Q353	For each buyer mentioned in Q301, what was the average price per animal and the usual method you used to determine the price of an animal? <i>(Ino myuulo mwakali kwiipanga buti?)</i> CODES <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;">1 Visual inspection</div> <div style="border: 1px solid black; padding: 2px;">2 By weight</div> <div style="border: 1px solid black; padding: 2px;">3 String measurement of girth</div> <div style="border: 1px solid black; padding: 2px;">4 Sex</div> </div>	Buyer 1:	METHOD <input type="text"/> AVE. PRICE <input type="text"/>	888	999		
		Buyer 2:	<input type="text"/> <input type="text"/>	888	999		
		Buyer 3:	<input type="text"/> <input type="text"/>	888	999		
			<input type="text"/> <input type="text"/>				

	5	Off-take (Dressed weight)	6	Grades and standards	Buyer 4:			888	999	
	7	Other (specify) _____								
Q354	How satisfied are you with the major buyers of your cattle? <i>Hena mwakakutilla but asikuula mupati?</i>				Buyer 1:			888	999	
					Buyer 2:			888	999	
					Buyer 3:			888	999	
					Buyer 4:			888	999	
	CODES									
	1	VERY SATISFIED								
	2	MODERATELY SATISFIED								
	3	NOT SATISFIED								

SECTION 4: INPUT USAGE FOR CATTLE REARING

Q401	Did you use any DIP CHEMICALS in cattle rearing in the past 12 months? <i>Hena mwakabelesya camutunzya mubuluba mumainza amu 2004/05?</i>				3. Yes 4. No	888	999	IF 'NO' GO TO Q405
Q402	If YES, how much? (<i>Kuti na mwakabelesya, ino wakali munji buti?</i>)					888	999	
Q403	Who was the major supplier of the Dip chemicals you used on cattle rearing? SUPPLIER S (MAXIMUM OF TWO)					888	999	
	1		2					
	<i>Ino mbabani bakamusambalide camutunzya ngomwakabikka mubuluba bwanu?</i>							
Q404	How much did you spend on buying DIP CHEMICALS ? <i>Ino mwakabelesya mali ongaye kuula camutunzya?</i>							
Q405	Did you use any SUPPLEMENTS/FEEDS in cattle rearing in the past 12 months? <i>Hena mwakabelesya misamu yakupomezya buuka mubuluba mumainza amu 2004/05?</i>				1. Yes 2. No	888	999	IF 'NO' GO TO Q409
Q406	If YES, how much? (<i>Kuti na mwakabelesya, ino wakali munji buti?</i>)					888	999	
Q407	Who was the major supplier of the supplements/feeds you used on cattle rearing? SUPPLIER S (MAXIMUM OF TWO)					888	999	
	1		2					
	<i>Ino mbabani bakamusambalide musamu wabuuka ngomwakabikka mubuluba bwanu?</i>							
Q408	How much did you spend on buying supplements/feeds? <i>Ino mwakabelesya mali ongaye kuula musamu wabuuka ooyu?</i>							
Q409	Did you use any VACCINES in cattle rearing the past 12 months? <i>Hena mwakabelesya musamu ujaya bwizu mubuluba bwanu mumainza amu 2004/05?</i>				1. Yes 2. No	888	999	IF 'NO' GO TO Q413
Q410	If YES, how much? (<i>Kuti na mwakabelesya, ino wakali munji buti?</i>)					888	999	
Q411	Who was the major supplier of the vaccines you used on cattle rearing? SUPPLIER S (MAXIMUM OF TWO)					888	999	
	1		2					
	<i>Ino mbabani bakamusambalide musamu ujaya bwizu ngomwakabikka mubuluba bwanu?</i>							
Q412	How much did you spend on buying vaccines? <i>Ino mwakabelesya mali ongaye kuula musamu ujaya bwizu mubuluba ooyu?</i>							
Q413	Did you use any HERDING SERVICES in cattle rearing in the past 12 months?				1. Yes 2. No	888	999	IF 'NO' GO TO Q416
Q414	Who was the major supplier of the HERDING SERVICES you used ? SUPPLIER S (MAXIMUM OF TWO)					888	999	
	1		2					
Q415	How much did you spend on on HERDING SERVICES ?							
Q416	Did you use any CATTLE SPRAYING SERVICES in cattle rearing in the past 12 months?				1. Yes 2. No			IF 'NO' GO TO Q419
Q417	Who was the major supplier of the CATTLE SPRAYING SERVICES you used ? SUPPLIER S (MAXIMUM OF TWO)							
	1		2					
Q418	How much did you spend on on paying for CATTLE SPRAYING SERVICES ?						888	999

[illegible]

Q436	Did you use any INSURANCE POLICY in cattle rearing in the past 12 months?	1. Yes 2. No			IF 'NO' GO TO Q436
Q437	Who was the major supplier of the INSURANCE SERVICES you used? SUPPLIER S (MAXIMUM OF TWO)				
	1 <input type="text"/> 2 <input type="text"/>				
Q438	What type of INSURANCE POLICY did you have? 1. Fire 2. Theft 3. Crop failure 4. Other (specify) _____	<input type="text"/>	888	999	
Q439	Did you use any PRIVATE VETERINARY services in the past 12 months?	1.YES 2.NO			IF 'NO' GO TO Q442
Q440	Who was the major supplier of the PRIVATE VETERINARY SERVICES you bought? SUPPLIER S (MAXIMUM OF TWO)				
	1 <input type="text"/> 2 <input type="text"/>				
Q441	How much did you spend on buying private veterinary services?	<input type="text"/>	888	999	
	HIRE OF LABOUR				SKIP TO
Q442	Did you hire any people to do any work related to cattle rearing the past 12 months? <input type="text"/> YES <input type="text"/> NO <i>Hena kuli nimwaka njizide Bantu kumugwasya mumilimo yakubamba ng'ombe na?</i>	<input type="text"/>	888	999	IF 'NO', GO TO Q501
Q443	If YES, how many? (<i>Na inzya, bakali bongaye?</i>)	<input type="text"/>	888	999	
Q444	How many days did they work in TOTAL? (<i>Ino bakabeleka mazuba ongaye?</i>)	<input type="text"/>	888	999	
Q445	How much did you pay them in TOTAL? (<i>Ino mwakababbadela mali ongaye?</i>)				

SECTION 5: MORBIDITY AND MORTALITY

MORBIDITY & MORTALITY		DK	NR	SKIP TO	
Q501	How many cattle suffered from foot & mouth disease in the past 12 months? <i>(Ino ng'ombe zyanu zyangaye zyakacisidwe bulwazi bwa mulomo amaulu mumwaka omwe wainda?)</i>	<input type="text"/>	888	999	IF 'ZERO' GO TO Q504
Q502	What did you do about the sick animals? (<i>Ino mwakazicitanzi kung'ombe zyakalikuciswa?</i>) OPTION CODES	<input type="text"/>	888	999	
	0 Nothing	1 Sought treatment from a government veterinary clinic			
	2 Sought treatment from a private veterinary clinic	3 Bought medicines			
	4 Other (specify) _____				
Q503	How many cattle died of foot and mouth disease in the past 12 months? <i>Ino ng'ombe zyangaye yakafwa kubulwazi bwamulomo amaulu mumwaka omwe wainda?</i>		888	999	
Q504	How many cattle suffered from corridor disease in the past 12 months? <i>Ino ng'ombe zyangaye zyakaciswa bulwazi bwakudenkete mwaka omwe wainda?</i>	<input type="text"/>			IF ZERO' GO TO Q507
Q505	What did you do about the sick animals? <i>Ino mwakazicitanzi kung'ombe zyakalikuciswa?</i> OPTION CODES	<input type="text"/>	888	999	
	0 Nothing	1 Sought treatment from a government veterinary clinic			
	2 Sought treatment from a private veterinary clinic	3 Bought medicines			
Q506	How many cattle died of corridor disease in the past 12 months? <i>Ino ng'ombe zyangaye yakafwa kubulwazi bwadenkete mumwaka omwe wainda?</i>	<input type="text"/>	888	999	
Q507	How many cattle suffered from anthrax in the past 12 months? <i>Ino ng'ombe zyangaye zyakaciswa bulwazi bwa kuzuzuma akuzwa bulowa mumwaka omwe wainda?</i>	<input type="text"/>			IF ZERO' GO TO Q510
Q508	What did you do about the sick animals? (<i>Ino mwakazicitanzi kung'ombe zyakalikuciswa?</i>) OPTION CODES	<input type="text"/>	888	999	
	0 Nothing	1 Sought treatment from a government veterinary clinic			
	2 Sought treatment from a private veterinary clinic	3 Bought medicines			

Q509	How many cattle died of anthrax disease in the past 12 months? <i>Ino ng'ombe zyangaye yakafwa kubulwazi kuzuzuma akuzwa bulowa mumwaka omwe wainda?</i>			888	999	
Q510	How many cattle suffered from lumpy skin disease in the past 12 months? <i>Ino ng'ombe zyangaye yakaciswa bulwazi bwa cinkwankwa mumwaka omwe wainda?</i>		[][][][]			IF 'ZERO' GO TO Q513
Q511	What did you do about the sick animals? (<i>Ino mwakazicitanzi kung'ombe yakalikuciswa?</i>) OPTION CODES			888	999	
	0	Nothing	1	Sought treatment from a government veterinary clinic		
	2	Sought treatment from a private veterinary clinic	3	Bought medicines		
Q512	How many cattle died of lumpy skin disease in the past 1 year? <i>Ino ng'ombe zyangaye yakafwa kubulwazi bwacinkwankwa mumwaka omwe wainda?</i>			888	999	
Q513	How many cattle suffered from liver fluke in the past 12 months? <i>Ino ng'ombe zyangaye yakaciswa bulwazi bwamuni mumwaka omwe wainda?</i>		[][][][]			IF 'ZERO' GO TO Q616
Q514	What did you do about the sick animals? (<i>Ino mwakazicitanzi kung'ombe yakalikuciswa?</i>) OPTION CODES			888	999	
	0	Nothing	1	Sought treatment from a government veterinary clinic		
	2	Sought treatment from a private veterinary clinic	3	Bought medicines		
Q515	How many cattle died of liver fluke disease in the past 12 months? <i>Ino ng'ombe zyangaye yakafwa kubulwazi bwamuni mumwaka omwe wainda?</i>			888	999	
Q516	How many cattle suffered from CBPP disease in the past 12 months? <i>Ino ng'ombe zyangaye yakaciswa bulwazi bwaCBPPmumwaka omwe wainda?</i>		[][][][]			IF 'ZERO' GO TO Q619
Q517	What did you do about the sick animals? (<i>Ino mwakazicitanzi kung'ombe yakalikuciswa?</i>) OPTION CODES			888	999	
	0	Nothing	1	Sought treatment from a government veterinary clinic		
	2	Sought treatment from a private veterinary clinic	3	Bought medicines		
Q518	How many cattle died of CBPP disease in the past 12 months? <i>Ino ng'ombe zyangaye yakafwa kubulwazi bwaCBPPmumwaka omwe wainda?</i>		[][][][]	888	999	
Q519	How many cattle suffered from OTHER disease in the past 12 months? <i>Ino ng'ombe zyangaye yakaciswa bulwazi bwaCBPPmumwaka omwe wainda?</i>		[][][][]			IF 'ZERO' GO TO Q601
Q520	What are the names of these OTHER diseases your cattle suffered from?		WRITE NAMES OF DISEASES _____ _____ _____	888	999	
Q521	What did you do about the sick animals? (<i>Ino mwakazicitanzi kung'ombe yakalikuciswa?</i>) OPTION CODES			888	999	
	0	Nothing	1	Sought treatment from a government veterinary clinic		
	2	Sought treatment from a private veterinary clinic	3	Bought medicines		
Q522	How many cattle died of OTHER diseases in the past 12 months? <i>Ino ng'ombe zyangaye yakafwa kubulwazi bwaCBPPmumwaka omwe wainda?</i>		[][][][]	888	999	
Q523	What are the names of these OTHER diseases your cattle died of?		WRITE NAMES OF DISEASES _____ _____ _____	888	999	

SECTION 6: AVAILABILITY, ACCESS AND USE OF INFORMATION/COMMUNICATION SERVICES

Q601	How often do you use a cell phone, whether yours or someone else's, to receive information, whether SMS or voice, that is useful in cattle rearing? 1 Never 2 Sometime 4 often				
Q602	How often do you use the Internet to send or receive information useful in cattle rearing? 1 Never 2 Occasionally 4 often	<input type="text"/>	888	999	
Q603	Have you listened to radio programmes broadcasted on agriculture in the past two weeks? 1 YES 2 NO	<input type="text"/>	888	999	
Q604	Are there farmer information centres in this or nearby community? 1 YES 2 NO	<input type="text"/>	888	999	IF 'NO' GOTO Q701
Q605	What type of information is provided by the information centre(s)? [MAY BE MORE THAN ONE – WRITE ALL THAT APPLY] 1. Information on new or better methods of farming 2. Information on better methods of managing farm enterprises 3. Information on input markets 4. Information on output markets 5. Other (specify) _____	<input type="text"/>	888	999	
Q606	How is the information disseminated? [MAY BE MORE THAN ONE – WRITE ALL THAT APPLY] 1. By word of mouth 2. Through written material 3. Through radio 4. Through cell phones 5. Through e-mail		888	999	
Q607	Has the information been helpful to you? 1 YES 2 NO	<input type="text"/>	888	999	

SECTION 7: TECHNICAL ADVICE

TECHNICAL ADVICE			DK	NR	Skip to q
Q701	Have you received any advice or training or information in LIVESTOCK farming in the past 12 months? 1 YES 2 NO <i>Hena mwakatambula malailile, na lwiiyo antela mulumbe kujatikizya buvubi bwang'ombe?</i>		888	999	IF 'NO' GO TO Q801
Q702	Please tell me the sources of the training you have received in the past 12 months and how useful the advice training or information that you received <i>Ndalomba mundaambile nkomwakajana lwiiyo lwainoino awa abubotu bwa malailile, mulumbe a lwiiyo ndomwakatambula?</i>		888	999	
	Code	Source of Training, Advice or Information			
		Usefulness of TA 1 VERY USEFUL 2 MODERATELY USEFUL 3 NOT USEFUL			
	[1]	Ministry of Agriculture Extension officers	888	999	
	[2]	Other extension officers	888	999	
	[3]	Suppliers of chemicals and fertilizers	888	999	
	[4]	Shops supplying inputs	888	999	
	[5]	Seminars and meetings	888	999	
	[6]	ZAMBEEF/ Other Agribusiness company	888	999	
	[7]	Radio, TV	888	999	
	[8]	Phone	888	999	
	[9]	Internet	888	999	
	[10]	PROFIT	888	999	
	[11]	Posters	888	999	
	[12]	News papers, magazines	888	999	
	[13]	Producer association	888	999	
	[14]	Buyers of crops	888	999	
	[15]	Other (Specify) _____	888	999	

SECTION 8: GROUP DYNAMICS

Q801	Are there farmer groups in this community?	GROUP	1. YES 2. NO	CODES		SKIP TO IF 'NO' GO TO Q909
				DK	NR	
Q802	If so, what are their names?	Group 1:		888	999	
		Group 2:		888	999	
		Group 3:		888	999	
		Group 4:		888	999	
Q803	What type of group is [NAME OF GROUP] _____? [ASK FOR EACH GROUP MENTIONED IN Q901] CODES 1. A marketing cooperative 2. A buyer cooperative 3. A marketing/buyer cooperative 4. A producer association 5. Other (specify) _____	Group 1:	[]	888	999	
		Group 2:	[]	888	999	
		Group 3:	[]	888	999	
		Group 4:	[]	888	999	
Q804	Are you a member of [NAME OF GROUP] _____? ASK FOR EACH GROUP MENTIONED IN Q801	GROUP				
		Group 1:	[]	888	999	
		Group 2:	[]	888	999	
		Group 3:	[]	888	999	
Q805	What benefits are you currently getting from being a member of [NAME OF GROUP] _____? ASK FOR EACH GROUP MENTIONED IN Q804 [MAY BE MORE THAN ONE – WRITE ALL THAT APPLY] 9. Easy access to inputs 10. Easy access to credit 11. Easy access to extension services 12. Easier to sell farm produce 13. Source of production and market information 14. Easier to negotiate for good price 15. Easier to Organize transport 16. Other (specify): _____	Group 1:	[]	888	999	
		Group 2:	[]	888	999	
		Group 3:	[]	888	999	
		Group 4:	[]	888	999	
Q806	What benefits <i>would you like</i> to get from being a member of [NAME OF GROUP] _____? [ASK FOR EACH GROUP MENTIONED IN Q804] [MAY BE MORE THAN ONE – WRITE ALL THAT APPLY] 9. Easy access to inputs 10. Easy access to credit 11. Easy access to extension services 12. Easier to sell farm produce 13. Source of production and/or market information 14. Easier to negotiate for good price 15. Easier to Organize transport 16. Other (specify): _____	Group 1:	[]	888	999	
		Group 2:	[]	888	999	
		Group 3:	[]	888	999	
		Group 4:	[]	888	999	
Q807	As a member of [NAME OF GROUP] _____, how often have you attended group meetings in the past 6 months? [ASK FOR EACH GROUP MENTIONED IN Q804] 4. Always 5. Sometimes 6. Rarely	Group 1:	[]	888	999	
		Group 2:	[]	888	999	
		Group 3:	[]	888	999	
		Group 4:	[]	888	999	
Q808	Why are you not a member of [NAME OF GROUP] _____? [ASK FOR EACH GROUP NOT MENTIONED IN Q804] 1. Too busy to attend meetings 2. I see no reason to join 3. Too many restrictions on membership 4. Short of money to pay for what they need 5. Lack of info or not knowing how to begin. 6. Other (specify) _____	Group 1:	[]	888	999	
		Group 2:	[]	888	999	
		Group 3:	[]	888	999	
		Group 4:	[]	888	999	

Q809	Did you put resources together with one or more other farmers in order to buy agricultural inputs? 1 YES 2 NO			
Q810	Did you jointly acquire any services with one or more other farmers in the 2004/5 farming season? 1 YES 2 NO		888	999
Q811	Did you join up with one or more other farmers for the sake of selling your produce in the 2004/05 farming season? 1 YES 2 NO		888	999

SECTION 9: CROPS

Q.NO	QUESTIONS AND FILTERS	CODES		WRITE IN	CODES		SKIP TO
		A) CASH CROP B) FOOD CROP	A/ B		DK	NR	
Q901	How much of the total area of the farm was used to plant the major crops last farming season? <i>Ino mwakabelesya nyika ipati buti kusyanga zyisyango zyipati pati mumainza amu 2004/05?</i>	1. Maize			888	999	
		2. Groundnuts			888	999	
		3. Beans			888	999	
		4. Sunflower			888	999	
		5. Cassava			888	999	
		6. Tobacco			888	999	
		7. Rice			888	999	
		8. Sorghum			888	999	
		9. Millet			888	999	
		10 Other (specify) _____			888	999	
Q902	How much of the major crop(s) did you harvest last farming season (2005)? <i>Ino butebuzi bwakali buti kuzwa kuzyisyango zyipati pati mubutebuzi bwamu 2005?</i>	1. Maize			888	999	
		2. Groundnuts			888	999	
		3. Beans			888	999	
		4. Sunflower			888	999	
		5. Cassava			888	999	
		6. Tobacco			888	999	
		7. Rice			888	999	
		8. Sorghum			888	999	
		9. Millet			888	999	
		10 Other (specify) _____			888	999	
Q903	How much money did you get from the major crop sales last farming season? <i>Ino mwakajana mali ongaye nomwakasambala butebuzi bwanu bwa zyisyango zyipati pati mu 2005?</i>	1. Maize			888	999	
		2. Groundnuts			888	999	
		3. Beans			888	999	
		4. Sunflower			888	999	
		5. Cassava			888	999	
		6. Tobacco			888	999	
		7. Rice			888	999	
		8. Sorghum			888	999	
		9. Millet			888	999	
		10 Other (specify) _____					
Q904	Did you use any irrigation on any of the crops in the 2004/2005 farming season?		0 = NO	1 = YES			IF 'NO' GO Q1001
		1. Maize			888	999	
		2. Groundnuts			888	999	
		3. Beans			888	999	
		4. Sunflower			888	999	
		5. Cassava			888	999	
		6. Tobacco			888	999	
		7. Rice			888	999	
		8. Sorghum			888	999	
		9. Millet			888	999	
		10 Other (specify) _____					

Q905	If you used irrigation last year, what was the main irrigation type that you used FOR EACH crop you irrigated? CODES <table border="1"> <tr> <td>1</td> <td>Bucket</td> <td>2</td> <td>Treadle pump</td> <td>3</td> <td>Electric motor driven pump</td> <td>4</td> <td>Diesel pump</td> <td>5</td> <td>Other</td> </tr> </table>					1	Bucket	2	Treadle pump	3	Electric motor driven pump	4	Diesel pump	5	Other		WRITE CODE		
						1	Bucket	2	Treadle pump	3	Electric motor driven pump	4	Diesel pump	5	Other				
						1. Maize		888	999										
						2. Groundnuts		888	999										
						3. Beans		888	999										
						4. Sunflower		888	999										
						5. Cassava		888	999										
						6. Tobacco		888	999										
						7. Rice		888	999										
						8. Sorghum		888	999										
						9. Millet		888	999										
10 Other (specify) _____																			
Q906	If you used irrigation last year, what was the main source of irrigation water FOR EACH crop you irrigated? CODES <table border="1"> <tr> <td>1</td> <td>River/stream</td> <td>2</td> <td>Dam/weir</td> <td>3</td> <td>Well/borehole</td> <td>4</td> <td>Other</td> </tr> </table>					1	River/stream	2	Dam/weir	3	Well/borehole	4	Other		WRITE CODE				
						1	River/stream	2	Dam/weir	3	Well/borehole	4	Other						
						1. Maize		888	999										
						2. Groundnuts		888	999										
						3. Beans		888	999										
						4. Sunflower		888	999										
						5. Cassava		888	999										
						6. Tobacco		888	999										
						7. Rice		888	999										
						8. Sorghum		888	999										
						9. Millet		888	999										
10 Other (specify) _____																			

SECTION 10: LIVESTOCK AND FARM ASSET OWNERSHIP

			DK	NR	SKIP TO					
Q1001	Do you own any OTHER livestock? 1. Yes; 2. No <i>Hena mulijisi misyobo imbi yabanyama bavubidwe na?</i>			888	999	IF 'NO' GO TO Q1004				
Q1002	If yes, please tell me the types and numbers of livestock you own <i>Na inzya, ndalomba kuti mundaambile misyobo amweelwe wabanyama banu</i>									
	Livestock	Number owned	DK	NR	Livestock	Number owned	DK	NR	SKIP TO	
	1	Chickens		888	999	7	Guinea fowls		888	999
	2	Donkey		888	999	8	Ducks		888	999
	3	Sheep		888	999	9	Pigeons		888	999
	4	Goats		888	999	10	Other [specify] _____		888	999
	5	Pigs		888	999					
6	Rabbits									
Q1003	Do you own any farm assets? 1. Yes; 2. No <i>Hena mulijisi ziyibesyo zyumubelesya mubulimi bwanu na?</i>			888	999					
Q1004	If yes, please tell me the types and numbers of farm assets you own <i>Na inzya, ndalomba mundaambile misyobo alimwi amweelwe wazyibesyo zyanu?</i>									
	Asset	Number owned	DK	NR	Asset	Number owned				
	1	Dip Tank		888	999	5	Ox-carts		888	999
	2	Sprayer		888	999	6	Tractors		888	999
	3	Ridgers		888	999	7	Rippers		888	999
4	Harrows		888	999	8	Other [specify] _____		888	999	

*****THE END*****

ANNEX 3

PROFIT BASELINE SURVEY

RETAIL SUB-SECTOR QUESTIONNAIRE

FOR USE IN MUKUSHI AND CHIBOMBO DISTRICTS OF ZAMBIA

USAID / DAI / PROFIT

MAY/JUNE 2006

16.05.06

FIRST, MAKE SURE YOU HAVE THE RIGHT RESPONDENT. THE ENUMERATOR MUST INTERVIEW THE PERSON DEALING WITH INPUT PROCUREMENT. THE RESPONDENT SHOULD BE THE PERSON IN CHARGE AND ABLE TO SPEAK AUTHORITATIVELY ABOUT FARM ACTIVITIES. DO NOT INTERVIEW FARM LABORERS OR YOUNG BOYS OR GIRLS.

Introduction: “My name is..... I’m currently working on a study of the PROFIT programme. We’re interviewing people here in [name of community & village] in order to get information about Cotton related issues. The information obtained will be used to assess the impact of the implementation of PROFIT as a programme. All answers will be seen only by the research team and will be kept fully confidential.

Have you been interviewed in the last five days for this study? **IF THE RESPONDENT HAS BEEN INTERVIEWED BEFORE, DO NOT INTERVIEW THIS PERSON AGAIN.** Tell them you cannot interview them a second time, thank them, and end the interview. If they have not been interviewed before, conduct the interview.

Always **politely ask the interviewee for permission** to interview him/her. Only after they have consented to be interviewed should you begin to ask questions.

001 Questionnaire Identification Number |_|_|_|_|_|_|_|_|_|_|

002 Team Code |_|_|_|_|_|

003 District |_|_|_|_| [31 CHIBOMBO] [32 MUKUSHI]

004 Area/ Community Code |_|_|_|_|_| and Area Name _____

005 Household Code |_|_|_|_|_|_|_|_|_|_|

006 Respondent Code |_|_|_|_|_|_|_|_|_|_|

IMPORTANT DETAILS

<i>Interviewer's name and ID number</i>		
<i>Farmer's name</i>		
<i>Contact address</i>		
<i>Telephone number</i>		
<i>Interview date</i>		
<i>Indicate whether participant or control</i>		
<i>If participant, date began participating</i>		
<i>Location: district; community; village</i>		
<i>Person who showed you where to go with telephone number or address</i>		
<i>Description of how to reach the farm from the nearest well-known town or point, so that a stranger can find it. Include nearest churches, schools or other landmarks.</i>		
<i>Detailed sketch map of the location of the farm</i>		

Incomplete Interviews Log

	Visit 1	Visit 2	Visit 3	Visit 4
Date				
Interviewer				
Comment				

Comment codes: Appointment made for later today 1; Appointment made for another day 2; Refused to continue and no appointment made 3; Other (Specify) 4.

Questionnaire Summary Information

Section	Name of Section	Number of Questions
Section 0	Questionnaire Identification Data	06
Section 1	Household Characteristics	40
Section 2	Retailer Promotional Activities & Input Supply	34
Section 3	Other Crops Background Data	06
Section 4	Farming Technology, Practices	02
Section 5	Groups Dynamics	14
Section 6	Livestock and Farm Asset Ownership	04
<i>Total number of questions</i>		

INTERVIEW START TIME: _____

INTERVIEW END TIME: _____

SUPERVISOR SIGNATURE: _____

SECTION 1: HOUSEHOLD CHARACTERISTICS

Now I am going ask you a number of things about your household.

[TELL THE RESPONDENT THAT THE HOUSEHOLD IS DEFINED AS ALL THE RELATED PEOPLE, INCLUDING BABIES BUT EXCLUDING SERVANTS, ETC.) WHO USUALLY LIVE TOGETHER AND EAT FROM THE SAME POT].

No.	Questions and filters	Coding categories		GO TO
Q185	Are you the head of the household? <i>Hena ndunywe bamukamwini munzi na?</i>	Yes	1	
		No	2	
Q186	Record Sex Of The Respondent	Male	1	
		Female	2	
Q187	In what month and year were you born? <i>Ino mwakazyalwa lili? Mwezi amwaka nzi?</i>	Month	[][]	
		Don't Know Month	88	
		No Response	99	
		Year	[][]	
		Don't Know Year	88	
		No Response	99	
Q188	How old were you at your last birthday? <i>Ino kuciindi cino mwakakwanisya myaka yongaye yakuzyalwa?</i> (Compare & Correct Q103 OR 104 If Needed)	Age In Completed Years	[][]	
		Don't Know	88	
		No Response	99	
Q189	Have you ever attended formal school? <i>Hena kuli nomwakanjide cikolo na?</i> (Ensure You Probe Adequately)	Yes	1	IF 'NO' GO TO Q108
		No	2	
		Don't Know	88	
		No Response	99	
Q190	What is the highest level of school you attended: primary, secondary or higher? CIRCLE ONE <i>Ino mwakagolela mubbuku nzi?</i>	1. Lower Primary(sub A to Standard 2 or Grade 1 - 4) 2. Upper Primary (Standard 3-5 or Grade5- 7) 3. Junior Secondary (up to Grade 9 or Form 3) 4. Senior secondary (up to Grade 12 or Form 5) 5. Higher 888. Don't Know 999. No Response		
Q191	How many total years of education did you attend? <i>Ino mwakaiya myaka yongaye kucikolo?</i>	# Years Completed	[][]	
		Don't Know	88	
		No Response	99	

QUESTIONS & FILTERS					DK	NR	SKIP TO
Please fill in the following details							
Member ID	Q192 Name of Household member	Q193 Sex of Household member 1 = Male 2 = Female	Q194 Age in completed years	Q195 Occupation of household member [USE OCCUPATION RESPONSE CODES PROVIDED BELOW]			
1					888	999	
2					888	999	
3					888	999	
5					888	999	
6					888	999	
7					888	999	
8					888	999	
9					888	999	
10					888	999	
11					888	999	
12					888	999	
13					888	999	
14					888	999	

15					888	999	
16					888	999	
17					888	999	
18					888	999	
19					888	999	
20					888	999	

OCCUPATION RESPONSE CODES

1	WORK ON A FAMILY FARM	6	EMPLOYED OUTSIDE THE FAMILY FARM
2	RUNNING A BUSINESS/SELF EMPLOYED	7	FULLTIME HOUSEWIFE
3	FULLTIME STUDENT	9	OTHER (SPECIFY) _____
4	TOO YOUNG TO WORK		
5	TOO OLD TO WORK		

INCOME & SOURCES		WRITE ANSWER HERE					
Q196	What are the three major sources of HOUSEHOLD income, starting with the most important?	1	_____	[]	888	999	
		2	_____	[]	888	999	
		3	_____	[]	888	999	
		CODES					
		1	First	2	Second	3	Third
Q197	Do you have a bank account?	1. YES 2. NO					

FOOD SECURITY						
Q198	What were the major food crops that the HOUSEHOLD produced and consumed in the 2004/05 farming season?			888	999	
	[LIST UP TO FOUR]					
	Ino zisyango nzi zipati pati ziomwakatebula akubelesya kulya mubutebuzi bwamu 2005?			888	999	
	FOOD ITEM	QUANTITY CONSUMED	COST IF PURCHASE			
	1. _____	[]	[]	888	999	
	2. _____	[]	[]	888	999	
	3. _____	[]	[]	888	999	
	4. _____	[]	[]	888	999	
Q199	How many whole/square meals did you eat yesterday?					
	Bushe mwalile imiku inga mailo?			[]		

Q200	How long did the food crops that you harvested in the past year last? <i>Ino cakulya ncomwakatebude mwaka wainda mwakalya ciindi cilamfu buti nociyakumana?</i>	1	LESS THAN 12 MONTHS	[]	888	999	IF '2' GO Q118
		2	12 MONTHS				
Q201	If the food you harvested lasted less than 12 months, what was your main source of food after your harvest ran out? <i>Na cakulya ncomwakatebude ticakamana mwaka, ino cakulya mwakalikucijanakuli nocakamana ncomwakatebude?</i>	1	Bought with own money	[]	888	999	
		2	Given food by relatives or neighbors				
		3	Exchanged cash crops for food				
		4	Given food by food aid program				
		5	Sold/exchanged household goods for food				

HOUSEHOLD EXPENDITURE						
Q202	How much did your household spend on education in the last 12 months (1YEAR)??			[]	888	999
	<i>Nindalama shinga shonse pamo ishomwabomfeshe ukulipila kumasukulu muli uyu mwaka wapwile?</i>					
Q203	How much did your household spend on food and groceries in the last 12 months (1 year)?			[]	888	999
	<i>Nindalama shinga shonse pamo esho mwabomfeshe mushita ifyakulya fya panganda mui uyui mwaka wapwile?</i>					

Q204	How much did your household spend on housing in the last 12 months (1 year)? <i>Nindalama shinga shonse pamo ishomwabomfeshe mukusunkela in'ganda muli uyu mwaka wapwile?</i>	[]	888	999	
Q205	How much did your household spend on water and electricity in the last 12 months (1 year)? <i>Nindalama shinga shonse pamo ishomwabomfeshe mukusunkela amalaiti na menshi muli uyu mwaka wapwile?</i>	[]	888	999	
Q206	How much did your household spend on paraffin in the last 12 months (1 year)? <i>Nindalama shinga shonse pamo ishomwabomfeshe mushita paraffin wakusanikila mu n'ganda muli uyu mwaka wapwile?</i>	[]	888	999	
Q207	How much did your household spend on clothing in the last 12 months (1 year)? <i>Nindalama shinga shonse pamo ishomwabomfeshe mukushita fyakufwala muli uyu mwaka wapwile?</i>	[]	888	999	
Q208	How much did your household spend on medicines and hospital fees in the last 12 months (1 year)? <i>Nindalama shinga shonse pamo ishomwabomfeshe mukuhita umuti no kulipila kufipatala muli uyu mwaka wapwile?</i>	[]	888	999	
Q209	How much did your household spend on transport in the last 12 months (1 year)? <i>Nindalama shinga shonse pamo ishomwabomfeshe mukwendela muli uyu mwaka wapwile?</i>	[]	888	999	

HOUSING

Q210	[OBSERVE AND WRITE ANSWER, ONLY ASK IF YOU CAN'T TELL BY LOOKING] What is the wall material of the best house among the houses/huts occupied by the members of your household? <i>Bushe icibumba ca n'ganda intu mutila eisuma sana muli uno mushi bakulila nenshi?</i>	1	Mud or cow dung	888	999	
		2	Concrete bricks			
		3	Iron sheets			
		4	Stone			
		5	Tiles			
		6	Wood			
		7	Grass/poles			
		8	Other (specify)			
Q211	[OBSERVE AND WRITE ANSWER, ONLY ASK IF YOU CAN'T TELL BY LOOKING] What is the roofing material of the best house among the houses/huts occupied by the members of your household? <i>Bushe umutenge wa n'ganda intu mutila eisuma sana muli uno mushi fimbila nenshi?</i>	1	Grass/Straw/thatch	888	999	
		2	Iron sheets	888	999	
		3	Tiles	888	999	
		4	Slates/concrete/cement	888	999	
		5	Wood/planks	888	999	
		6	Other (specify)	888	999	
Q212	How many rooms or huts are occupied by all the members of your household? <i>Fipinda finga ifyo ebekashi bapano ngada bekalamo nagula tumyanda tunga eto bekalamo</i>			888	999	
Q213	Does this house have a kitchen inside the house? <i>Bushe iyi in'ganda yenu yakwatila icipinda cakwipikilamo mukati</i>	1. YES 2. NO		888	999	
Q214	How many chairs with backs are in this house? <i>Mipando inga iyaba mu n'ganda mummyenu</i>			888	999	
Q215	How many sofa sets are in this house? <i>Muli imapando yamasofa itundu inga mun'ganda?</i>			888	999	
Q216	How many tables are in this house? <i>Amatebulo yalimo yanga mun'ganda?</i>			888	999	
Q217	Do you have a domestic worker who is not related to the head of the household? <i>Bushe mwalikwata umubomfi wapanganda ushili lupwa lwenu?</i>			888	999	

SOURCE OF DRINKING WATER

Q218	What is your main source of drinking water in the dry season? <i>Bushe mufumyakwi amenshi yakunwa mulusuba?</i>	CODE	SOURCE			
		1	Piped water within the community <i>Amenshi yakumupompi muno mwine mumushi</i>	888	999	
		2	Piped outside this community <i>Amenshi yakumupompi uushili wamuno mushi</i>	888	999	
		3	A private well in the community <i>Pacishima cakuimbila fye muno mwine mumushi</i>	888	999	
		4	Water tank in the community <i>Pe Tanki lyamenshi muno mwine mumushi</i>	888	999	
		5	Pond/river/canal <i>Mumumana/ mumufolo</i>	888	999	

		6	Public well in the community <i>Pa cishima ca muli uno wine mushi</i>	888	999	
		7	Other (specify) _____			
Q219	How far is the source of drinking water in the dry season?	1	Less than a km			
		2	1 – 3 Km			
		3	Above 3 km			
Q220	What is your main source of drinking water in the wet season? <i>Bushe mufumyakwi amenshi yakunwa mumainsa?</i>	1	Piped water within the community <i>Amenshi yakumupompi muno mwine mumushi</i>	888	999	
		2	Piped water outside this community <i>Amenshi yakumupompi uushili wamuno mushi</i>	888	999	
		3	A private/borehole well in the community <i>Pacishima cakuimbila fye muno mwine mumushi</i>	888	999	
		4	Water tank in the community <i>Pe Tanki lyamenshi muno mwine mumushi</i>	888	999	
		5	Pond/river/canal <i>Mumumana/ mumufolo</i>	888	999	
		6	Public well in the community <i>Pa cishima ca muli uno wine mushi</i>	888	999	
		7	Other (specify) _____	888	999	
Q221	How far is the source of drinking water in the wet season?	1	Less than a km			
		2	1 – 3 Km			
		3	Above 3 km			

TYPE OF TOILET FACILITY

Q222	What is the type of toilet facility in this house? <i>Bushe icimbusu mwakwata pano n'ganda camusango shani?</i>	Flush latrine outside	1			
		Flush latrine inside the residence	2			
		Ordinary Pit latrine	3			
		VIP (Ventilated Improved Pit latrine)	4			
		Other (specify) _____	5			
		None	6	888	999	

SOURCE OF LIGHTING/INFORMATION ACCESS

Q223	What is the type of lighting in this house? <i>Bushe musangoshi mubofya uwakusanikilamo mun'ganda yenu?</i>	Candle	1	888	999	
		Paraffin lamp	2	888	999	
		Pressure lamp	3	888	999	
		Generator	4	888	999	
		Solar	5	888	999	
		Battery system	6	888	999	
		Electricity	7	888	999	
		Firewood/Grass	8	888	999	
		Other (specify) _____				

COOKING UTENSILS

Q224	What cooking/kitchen utensils do you have?					
	1.Metal pots/kettles	<input type="text"/>		888	999	
	2.Charcoal stove	<input type="text"/>		888	999	
	3.Paraffin stove	<input type="text"/>		888	999	
	4.Gas/electric stove	<input type="text"/>		888	999	
	5.Gas/electric oven	<input type="text"/>		888	999	
	6.Free standing deep freezer	<input type="text"/>		888	999	

HOUSEHOLD GOODS

Q225	Do you have the following goods in your household?		Write Number	DK	NR	GO TO
	1.TV	1. Yes 2. No	<input type="text"/>	888	999	
	3.Radio	1. Yes 2. No	<input type="text"/>	888	999	
	4.Radio-cassette player	1. Yes 2. No	<input type="text"/>	888	999	
	5.Video recorder	1. Yes 2. No	<input type="text"/>	888	999	
	6.Cell phone	1. Yes 2. No	<input type="text"/>	888	999	
	7.Fixed telephone line	1. Yes 2. No	<input type="text"/>	888	999	
	8.Still camera	1. Yes 2. No	<input type="text"/>	888	999	
	9.Cassette player	1. Yes 2. No	<input type="text"/>	888	999	
	10.CD player	1. Yes 2. No	<input type="text"/>	888	999	
	11.Hi-fi music center	1. Yes 2. No	<input type="text"/>	888	999	
	12.Video camera	1. Yes 2. No	<input type="text"/>	888	999	

	13.Sewing machine	1. Yes	2. No	<input type="text"/>	888	999	
	14.Vacuum cleaner	1. Yes	2. No	<input type="text"/>	888	999	
	15.Electric iron	1. Yes	2. No	<input type="text"/>	888	999	
	16.Car/pick-up	1. Yes	2. No	<input type="text"/>	888	999	
	17.Motorcycle	1. Yes	2. No	<input type="text"/>	888	999	
	18.Bicycle	1. Yes	2. No	<input type="text"/>	888	999	
	19.Truck/lorry	1. Yes	2. No	<input type="text"/>	888	999	
Q226	How many motor vehicles do you have?			<input type="text"/>	888	999	

SECTION 2: RETAILER PROMOTIONAL ACTIVITIES INPUT SUPPLY

Q.NO	QUESTIONS AND FILTERS	WRITE IN	CODES		SKIP																
			DK (circle)	NR (circle)																	
RETAILER PROMOTIONAL ACTIVITIES																					
Q212	Have you heard of a shop that supplies agricultural inputs in this or nearby community? <i>Bushe mwalishibako ituka ilililyonse umobashitisha umufundo, imbuto nafimbi ififwaikwa mu bulimi?</i> RESPONSE OPTIONS <input type="checkbox"/> 1 YES <input type="checkbox"/> 2 NO	<input type="text"/>	888	999	IF 'NO' GO TO Q205																
Q213	If so, how did you come to learn about the shop? <i>Nga chakutila mwalishibako ituka lyamusango uyu, calishani pakuti mwishibe ili tuuka.</i> RESPONSE OPTIONS <table border="1"> <tr> <td>1</td> <td>Through radio <i>Pa chilimba</i></td> <td>2</td> <td>Through mobile phone <i>Ukupitila mutumalanya twa kuminwe</i></td> </tr> <tr> <td>3</td> <td>Through flyers <i>Ukupitila mutupepala twe lyashi</i></td> <td>4</td> <td>Through a community event <i>Ukupitila mukusefya kwamumushi</i></td> </tr> <tr> <td>5</td> <td>Through market day <i>Ubushiku bwa kushitisha</i></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>Other (specify) <i>Fimbi(londolola)</i></td> <td></td> <td></td> </tr> </table>	1	Through radio <i>Pa chilimba</i>	2	Through mobile phone <i>Ukupitila mutumalanya twa kuminwe</i>	3	Through flyers <i>Ukupitila mutupepala twe lyashi</i>	4	Through a community event <i>Ukupitila mukusefya kwamumushi</i>	5	Through market day <i>Ubushiku bwa kushitisha</i>			6	Other (specify) <i>Fimbi(londolola)</i>			<input type="text"/>	888	999	
1	Through radio <i>Pa chilimba</i>	2	Through mobile phone <i>Ukupitila mutumalanya twa kuminwe</i>																		
3	Through flyers <i>Ukupitila mutupepala twe lyashi</i>	4	Through a community event <i>Ukupitila mukusefya kwamumushi</i>																		
5	Through market day <i>Ubushiku bwa kushitisha</i>																				
6	Other (specify) <i>Fimbi(londolola)</i>																				
Q214	How far is the nearest agricultural input shop? <i>Palepa shani apebela ituka ilyaba mupepi naimwe?</i>	1. Less than 500 m 2. 500m to less than 1 km 3. From 1 km to less than 3 km 4. From 3 km to less than 5 km 5. From 5 km to less than 10 km 6. More than 10 km	888	999																	
Q215	How do you find information about available products/services? <i>Nishilanshi mwishibilamo ukuti kuli imisango iyipya iyakubombelamo nangu tutile ishila ishakumyafwilishamo mumibombebe yenu?</i>	1. Camp extension officer 2. Village extension group 3. Input supplier 4. Community radio 5. Other (specify)	888	999																	
Q216	Has any retailer of agricultural inputs done any thing to persuade you or attract you to buy from their shop? <i>Bushe bashi makwebo balacitapo fimo ifya kumoongola pakuti mwingalashita ifintu mumatuka yabo?</i> RESPONSE OPTIONS <input type="checkbox"/> 1 YES <input type="checkbox"/> 2 NO	<input type="text"/>																			
Q217	What factors are most important to you when deciding where to buy? <i>Finshi filenga ukuti mwingatotonkanya no kusanga ati kuti mwashita uku nangu kulya?</i> [MAY BE MORE THAN ONE, CIRCLE ALL THAT ARE MENTIONED]	1. Price 2. Location 3. Quality 4. Relationship/trust with owner 5. Recommendation from someone 6. Other (specify)	888	999																	

		2. Word of mouth	888	999	
		3. Print adverts	888	999	
		4. Live promotional adverts	888	999	
		5. Other (specify)	888	999	
Q218	How often do you use a cell phone, whether yours or someone else's, to receive information, whether through SMS or voice, that is useful in the farming business? <i>Bushe mulabofya libili libili ka lanya kakuminwe, kuti ni kalamya kenu nango ka kwashima fye, mukupokelelamo amashiwi ayo angamwafwillishako bunonshi bwabulimi?</i>	<input type="text"/>	888	999	
	<input type="text"/> 1 Never <input type="text"/> 2 Sometime <input type="text"/> 4 often				
Q219	How often do you use the Internet to send or receive information in your farming business? <i>Bushe mulabomfya libili libili internet pakutuma nangu ukupokelelamo amashiwi ya pabunonshi bwamu bulimi</i>	<input type="text"/>	888	999	
	<input type="text"/> 1 Never <input type="text"/> 2 Sometime <input type="text"/> 4 often				
Q220	Have you listened to radio programmes broadcasted on agriculture as a business in the past two weeks? <i>Pamilungu yapitapo ibili iyi mwalumfwa ko cilimba pe lyashi lya kuti ubulimi bukwebo?</i>	<input type="text"/>	888	999	
	<input type="text"/> 1 YES <input type="text"/> 2 NO				
Q221	Are there farmer information centres in this or nearby community? <i>Bushe kwaliba ko incende mumushi wenu eko mwingatila eko musanga ilyashi pafyabulimi?</i>	<input type="text"/>	888	999	IF 'NO' GO TO Q214
	<input type="text"/> 1 YES <input type="text"/> 2 NO				
Q222	What type of information is provided by the information centre(s)? <i>Lyashi lyamusangoshi musangako nango tutile lyashi lyamusangoshi lisangwa mucende ine iyi?</i> 1. Information on new or better methods of farming 2. Information on better methods of managing farm enterprises 3. Information on input markets 4. Information on output markets 5. Other (specify) _____		888	999	
Q223	How is the information disseminated? <i>Ilyashi lisabankanihiwa mumusango nshi?</i> 1. By word of mouth 2. Through written material 3. Through radio 4. Through cell phones 5. Through e-mail		888	999	
Q224	Has the information been helpful to you? <i>Bushe ilyashi musangako kuncende ine iyi lyalibapo ilyakumyafulisha?</i>	<input type="text"/>	888	999	
	<input type="text"/> 1 YES <input type="text"/> 2 NO				

INPUT: FERTILIZERS

Q225	How much fertilizer did you buy in the 2004/05 farming season? <i>Bushe mwashitile amasaka yanga ayamufundo uyu mwaka wapwile.</i>	<input type="text"/>	888	999	IF 'ZERO' GO TO Q218															
Q226	How much did you spend on fertilizers in the past farming season (2004/05)? NISHINGA INDALAMA MWAPOSELEPO PALI UYU WINE MUFUNDO.?	<input type="text"/>	888	999																
Q227	Where did you buy most of the fertilizer? <i>Nikwisa mwashitile umufundo wine yu?</i>	<input type="text"/>	888	999																
	<table border="1"> <tr> <td>1</td> <td>From an agent at farm <i>Kubaletela ba shima farm</i></td> <td>2</td> <td>A store outside the community <i>Kwituuka naile ko</i></td> </tr> <tr> <td>3</td> <td>A buying group/association <i>Ku kabungwe akashitisha ifyabulimi mumushi</i></td> <td>4</td> <td>From an agent for a known store in the community <i>Kubaletela ba shimatuka bamumushi ifya kushitisha</i></td> </tr> <tr> <td>5</td> <td>From a store in the community <i>Mwituuka lya muno mushi</i></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td colspan="3">Other (specify) <i>Fimbi(londolola)</i></td> </tr> </table>	1	From an agent at farm <i>Kubaletela ba shima farm</i>	2	A store outside the community <i>Kwituuka naile ko</i>	3	A buying group/association <i>Ku kabungwe akashitisha ifyabulimi mumushi</i>	4	From an agent for a known store in the community <i>Kubaletela ba shimatuka bamumushi ifya kushitisha</i>	5	From a store in the community <i>Mwituuka lya muno mushi</i>			6	Other (specify) <i>Fimbi(londolola)</i>					
1	From an agent at farm <i>Kubaletela ba shima farm</i>	2	A store outside the community <i>Kwituuka naile ko</i>																	
3	A buying group/association <i>Ku kabungwe akashitisha ifyabulimi mumushi</i>	4	From an agent for a known store in the community <i>Kubaletela ba shimatuka bamumushi ifya kushitisha</i>																	
5	From a store in the community <i>Mwituuka lya muno mushi</i>																			
6	Other (specify) <i>Fimbi(londolola)</i>																			
Q228	If you bought fertilizer from a shop, how far away was the shop?	<input type="text"/>	888	999																

	Ngamweleenda fye pakuya mukushita uyu mufundo, palepa shani petuuka mwaleshita uyu mufundo?								
	1	Less than 3 Km	2	Between 3 and 6 km	3	Between 7 & 10 km	4	11km and above	

INPUT: PESTICIDES

Q229	How much pesticide did you buy in the past farming season? <i>Bushe mwalishitilepo umuti wakwipaya utushishi mumabala yenu?. Mwashitile amabotolo(ifipaketi) yanga (finga)?</i>						[]	888	999	IF 'ZERO' GO TO Q222
Q230	How much did you spend on pesticides in the past farming season (2004/05)? <i>Mwaposelepo indalama shinga mukushita umuti wakipaya utushishi mumabalayenu.</i>						[]	888	999	
Q231	Where did you buy most of the pesticides (More than 1 response expected)? <i>Nikwisa mwashtitile umuti wine uyu?</i>						[]	888	999	
	1	From an agent at farm <i>Kubalelela ba shima farm</i>		2	A store outside the community <i>Kwituuka naile ko</i>					
	3	A buying group/association <i>Ku kabungwe akashitisha ifyabulimi mumushi</i>		4	From an agent for a known store in the community <i>Kubalelela ba shimatuka bamumushi ifya kushitisha</i>					
	5	From a store in the community <i>Mwituuka lya muno mushi</i>								
	6	Other (specify) <i>Fimbi(londolola</i> _____								
Q232	If you bought pesticides from a shop, how far a way was the shop? <i>Ngamweleenda fye pakuya mukushita umuti wa mumabala palepa shani petuuka mwaleshita uyu umutio?</i>						[]	888	999	
	1	Less than 3 Km	2	Between 3 and 6 km	3	Between 7 & 10 km	4	11km and above		

INPUT: HERBICIDES

Q233

How much herbicide did you buy in the past farming season?
Bushe mwalishitilepo umuti wakucingilila ukusapa mumabala yenu?. Mwashitile amabotolo(ifipaketi) yanga (finga)?

Q234

How much did you spend on herbicides in the past farming season (2004/05)?
Mwaposelepo indalama shinga mukushita umuti wakucingilila ukusapa mumabala yenu?.

Q235

Where did you buy most of the herbicides?
Nikwisa mwashtitile umuti wine uyu

1	From an agent at farm <i>Kubalelela ba shima farm</i>	2	A store outside the community <i>Kwituuka naile ko</i>
3	A buying group/association <i>Ku kabungwe akashitisha ifyabulimi mumushi</i>	4	From an agent for a known store in the community <i>Kubalelela ba shimatuka bamumushi ifya kushitisha</i>
5	From a store in the community <i>Mwituuka lya muno mushi</i>		
6	Other (specify) <i>Fimbi(londolola)</i>		

Q236

If you bought herbicides from a shop, how far a way was the shop?
Ngamweleenda fye pakuya mukushita umuti wakucingilila ukusapa mumabala yenu , palepa shani petuuka mwaleshita uyu umutio?

1	Less than 3 Km	2	Between 3 and 6 km	3	Between 7 & 10 km	4	11km and above
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INPUT: VETERINARY DRUGS

Q237	How much VETERINARY DRUGS did you buy in the past farming season? <i>Umuti mwashtitile uwakucingilila ifilimwa fyenu kumalwele wafulileshani?</i>						[]	888	999	IF 'ZERO' GO TO Q230
Q238	How much did you spend on VETERINARY DRUGS in the past farming season (2004/05)? <i>Nindalama shinga mwaposelepo pali uyu wine muti mwashtitile uwakucingilila ifilimwa fyenu kumalwele?</i>						[]	888	999	

	Where did you buy most of the VETERINARY DRUGS? <i>Nikwisa mwashitile uyu wine muti uwakucingilila ifilimwa fyenu kumalwele?</i>							888	999	
	1	From an agent at farm <i>Kubalelela ba shima farm</i>	2	A store outside the community <i>Kwituuka naile ko</i>						
	3	A buying group/association <i>Ku kabungwe akashitisha ifyabulimi mumushi</i>	4	From an agent for a known store in the community <i>Kubalelela ba shimatuka bamumushi ifya kushitisha</i>						
	5	From a store in the community <i>Mwituuka lya muno mushi</i>								
	6	Other (specify) _____								
Q239	If you bought VETERINARY DRUGS from a shop, how far a way was the shop? <i>(Ngamweleenda fye pakuya mukushita uyu wine muti uwakucingilila ifilimwa fyenu kumalwele, palepa shani petuuka mwaleshita uyu umuutio?)</i>							888	999	
	1	Less than 3 Km	2	Between 3 and 6 km	3	Between 7 & 10 km	4	11km and above		
Q240	COST OF PURCHASED SERVICES						DK	NR	GO TO	
	How much money did you spend on paying suppliers of the various inputs and services? <i>Nindalama shinga mwaposele ukulipila abamulelela umufundo, imbuto nafimbi ififwaikwa mubilimi</i>									
	Purchased Service				Amount Spent					
	1	Spraying (<i>Ukubika umuti wa kusansa mwibala</i>)				[] [] [] [] [] [] [] [] [] []	888	999		
	2	Oxen tillage (<i>Ukulima ne N'gombe</i>)				[] [] [] [] [] [] [] [] [] []	888	999		
	3	Motorized tillage (<i>Ukulima na tractor</i>)				[] [] [] [] [] [] [] [] [] []	888	999		
	5	Weeding (<i>Ukusekwila</i>)				[] [] [] [] [] [] [] [] [] []	888	999		
	6	Harvesting (<i>Ukosombola</i>)				[] [] [] [] [] [] [] [] [] []	888	999		
	8	HERDING (UKUCEMA)				[] [] [] [] [] [] [] [] [] []	888	999		
	9	Transport				[] [] [] [] [] [] [] [] [] []	888	999		
	10	Hired labour (<i>Kubo mwaleingisha icito ya fikongwani</i>)				[] [] [] [] [] [] [] [] [] []	888	999		
	11	Dipping (<i>Ukubika ifiteka(in'gombe)mu muti</i>)				[] [] [] [] [] [] [] [] [] []	888	999		
	12	feed lot				[] [] [] [] [] [] [] [] [] []	888	999		
	13	Stud (hiring a bull)				[] [] [] [] [] [] [] [] [] []	888	999		
	14	Artificial insemination				[] [] [] [] [] [] [] [] [] []	888	999		
	15	Other (specify) _____				[] [] [] [] [] [] [] [] [] []				

SECTION 3: OTHER CROPS BACKGROUND DATA

(INSTRUCTIONS TO THE INTERVIEWER: LET RESPONDENT USE THE UNIT OF AREA/ VOLUME THEY ARE MOST FAMILIAR WITH, THEN USE THE CONVERSION TABLE PROVIDED TO CONVERT TO HECTARES/ APPROPRIATE VOLUME)

Q.NO	QUESTIONS AND FILTERS	CODES		WRITE IN	CODES		GO TO
		A) CASH CROP B) FOOD CROP	A/ B		DK (circle)	NR (circle)	
Q355	How much of the total area of the farm was used to plant the major crops last farming season? <i>Ino mwakabelesya nyika ipati buti kusyanga zyisyango zyipati pati mumainza amu 2004/05?</i>	1. Maize		[] [] [] [] [] [] [] [] [] []	888	999	
		2. Groundnuts		[] [] [] [] [] [] [] [] [] []	888	999	
		3. Beans		[] [] [] [] [] [] [] [] [] []	888	999	
		4. Sunflower		[] [] [] [] [] [] [] [] [] []	888	999	
		5. Cassava		[] [] [] [] [] [] [] [] [] []	888	999	
		6. Tobacco		[] [] [] [] [] [] [] [] [] []	888	999	
		7. Rice		[] [] [] [] [] [] [] [] [] []	888	999	
		8. Sorghum		[] [] [] [] [] [] [] [] [] []	888	999	
		9. Millet		[] [] [] [] [] [] [] [] [] []	888	999	
		10 Other _____		[] [] [] [] [] [] [] [] [] []	888	999	
Q356	How much of the major crop(s) did you harvest last farming season (2005)? <i>Ino butebuzi bwakali buti kuzwa kuzyisyango zyipati pati mubutebuzi bwamu 2005?</i>	1. Maize		[] [] [] [] [] [] [] [] [] []	888	999	
		2. Groundnuts		[] [] [] [] [] [] [] [] [] []	888	999	
		3. Beans		[] [] [] [] [] [] [] [] [] []	888	999	
		4. Sunflower		[] [] [] [] [] [] [] [] [] []	888	999	
		5. Cassava		[] [] [] [] [] [] [] [] [] []	888	999	
		6. Tobacco		[] [] [] [] [] [] [] [] [] []	888	999	
		7. Rice		[] [] [] [] [] [] [] [] [] []	888	999	
		8. Sorghum		[] [] [] [] [] [] [] [] [] []	888	999	
		9. Millet		[] [] [] [] [] [] [] [] [] []	888	999	
		10 Other _____		[] [] [] [] [] [] [] [] [] []	888	999	

Q357	How much money did you get from the major crop sales last farming season? <i>Ino mwakajana mali ongaye nomwakasambala butebuza bwanu bwa zyisyango zyipati pati mu 2005?</i>	1. Maize		[]	888	999	
		2. Groundnuts		[]	888	999	
		3. Beans		[]	888	999	
		4. Sunflower		[]	888	999	
		5. Cassava		[]	888	999	
		6. Tobacco		[]	888	999	
		7. Rice		[]	888	999	
		8. Sorghum		[]	888	999	
		9. Millet		[]	888	999	
		10 Other		[]			
Q358	Did you use any irrigation on any of the crops in the 2004/2005 farming season? <i>Bushe mwale tapilisha ifilimwa fimo efyo mwalimine mu mainsa ya 2004/2005</i>		0 = NO	1 = YES			IF 'NO' GO TO Q401
		1. Maize			888	999	
		2. G/Nuts			888	999	
		3. Beans			888	999	
		4. Sunflower			888	999	
		5. Cassava			888	999	
		6. Tobacco			888	999	
		7. Rice			888	999	
		8. Sorghum			888	999	
		9. Millet			888	999	
		10 Other					
Q359	If you used irrigation last year, what was the main irrigation type that you used FOR EACH crop you irrigated? <i>Nga mwaletapilasha musango shi mwaletapilishishamo?</i>	WRITE CODE					
		1. Maize			888	999	
		2. Groundnuts			888	999	
		3. Beans			888	999	
		4. Sunflower			888	999	
		5. Cassava			888	999	
		6. Tobacco			888	999	
		7. Rice			888	999	
		8. Sorghum			888	999	
		9. Millet			888	999	
		10 Other					
Q360	If you used irrigation last year, what was the main source of irrigation water FOR EACH crop you irrigated? <i>Nga mwaletapilasha, Amenshi mwaletapilishisha mwalefumya kwi</i>	WRITE CODE					
		1. Maize			888	999	
		2. Groundnuts			888	999	
		3. Beans			888	999	
		4. Sunflower			888	999	
		5. Cassava			888	999	
		6. Tobacco			888	999	
		7. Rice			888	999	
		8. Sorghum			888	999	
		9. Millet			888	999	
		10 Other					

SECTION 4: FARMING TECHNOLOGY AND PRACTICES

Q446	Have you received any advice or training or information in farming the past one year? <i>Bushe mwalipanshiwako amano nango ukasambilako pa fyabulimi muli mwaka wapwile?</i>				888	999	IF 'NO' GO TO Q501
	1	YES	2	NO			
Q447	Please tell me the sources of training received in the last one year and how useful the advice, training, or information that you received was <i>Mukwai kuti mwanjebako ukomwasambilile elyo nefyo ayo masabililo nango amano bamu pandileko yali kuli imwe</i>						
	Code	Source of Training, Advice or Information <i>Lemba uko amasambililo, abakupansha amino bafumine</i>			Usefulness of TA 1. VERY USEFUL <i>Ayasuma ayangabomfiwa sana</i> 2. MODERATELY USEFUL <i>Yasuma kuti ya bomfiwa</i> 3. NOT USEFUL <i>TETI YABOMFIWE NAKALYA</i>		DK NR GO TO
	1	Ministry of Agriculture Extension officers <i>Iciputulwa ca kamfulumende icilolekesha pa fya bulimi</i>					888 999
	2	Other extension officers <i>Ababomfi ba ciputulwa ca kamfulumende icilolekesha pa fya bulimi abendela abalimi</i>					888 999

3	Suppliers of chemicals and fertilizers (<i>Balya batwala umuti no mufundo kubalimi</i>)		888	999	
4	Shops supplying inputs <i>Amatuuka ayo bashitishamo umufundo imbuto nafimbi ififwaikwa mu bulimi</i>		888	999	
5	Seminars and meetings (<i>Ukumana pamo nokulanshana</i>)		888	999	
6	An agribusiness company		888	999	
7	Radio, TV (<i>Cilimba, no mulabasa wafikope</i>)		888	999	
8	PROFIT		888	999	
9	POSTERS (IFIPAMPA)		888	999	
10	Newspapers, magazines (<i>Amapela ye lyashi</i>)		888	999	
11	Producer association (<i>Akabungwe kabakampanga</i>)		888	999	
12	Buyers of crops (<i>Bakashita ba filimwa</i>)		888	999	
13	Other (Specify) <i>Fimbi londolola</i>		888	999	

SECTION 5: GROUP DYNAMICS

Q524	Are there farmer groups in this community? <i>Mwalibako utubungwe twabalimi muli uno mushi</i>	GROUP	1. YES	CODES		GO TO
			2. NO	DK	NR	IF 'NO' GO TO 509
Q525	If so, what are their names? <i>Nge motwaba kuti mwanjebako amashina ya utu twine tubungwe</i>	Group 1: _____ Group 2: _____ Group 3: _____ Group 4: _____	888 888 888 888	999 999 999 999		
Q526	What type of group is [NAME OF GROUP] _____? [ASK FOR EACH GROUP MENTIONED IN Q501] CODES 1. A marketing cooperative 2. A buyer cooperative 3. A marketing/buyer cooperative 4. A producer association 5. Other (specify) _____	WRITE CODE FOR TYPE OF GROUP				
		Group 1: []	888	999		
		Group 2: []	888	999		
		Group 3: []	888	999		
		Group 4: []	888	999		
Q527	Are you a member of [NAME OF GROUP] _____? [ASK FOR EACH GROUP MENTIONED IN Q501] 1. YES 2. NO	GROUP Group 1: [] Group 2: [] Group 3: [] Group 4: []	888 888 888 888	999 999 999 999		
Q528	What benefits are you currently getting from being a member of [NAME OF GROUP] _____? [ASK FOR EACH GROUP MENTIONED IN Q504] 17. Easy access to inputs 18. Easy access to credit 19. Easy access to extension services 20. Easier to sell farm produce 21. Source of production and market information 22. Easier to negotiate for good price 23. Easier to Organize transport 24. Other (specify): _____	Group 1: [] Group 2: [] Group 3: [] Group 4: []	888 888 888 888	999 999 999 999		
Q529	What benefits would you like to get from being a member of [NAME OF GROUP] _____? [ASK FOR EACH GROUP MENTIONED IN Q504] 17. Easy access to inputs 18. Easy access to credit 19. Easy access to extension services 20. Easier to sell farm produce 21. Source of production and/or market information 22. Easier to negotiate for good price 23. Easier to Organize transport 24. Other (specify): _____	Group 1: [] Group 2: [] Group 3: [] Group 4: []	888 888 888 888	999 999 999 999		

Q530	As a member of [NAME OF GROUP] _____, how often have you attended group meetings in the past 6 months? [ASK FOR EACH GROUP MENTIONED IN Q504] 7. Always 8. Sometimes 9. Rarely	Group 1:	<input type="text"/>	888	999	
		Group 2:	<input type="text"/>	888	999	
		Group 3:	<input type="text"/>	888	999	
		Group 4:	<input type="text"/>			
Q531	Why are you not a member of [NAME OF GROUP] _____? [ASK FOR EACH GROUP NOT MENTIONED IN Q504] 1. Too busy to attend meetings 2. I see no reason to join 3. Too many restrictions on membership 4. Short of money to pay for what they need 5. Lack of info or not knowing how to begin. 6. Other (specify) _____	Group 1:	<input type="text"/>	888	999	
		Group 2:	<input type="text"/>	888	999	
		Group 3:	<input type="text"/>	888	999	
		Group 4:	<input type="text"/>	888	999	
Q532	Did you put resources together with one or more other farmers in order to buy agricultural inputs? <input type="checkbox"/> 1 YES <input type="checkbox"/> 2 NO					
Q533	Did you jointly acquire any services with one or more other farmers in the 2004/5 farming season? <input type="checkbox"/> 1 YES <input type="checkbox"/> 2 NO			888	999	
Q534	Did you join up with one or more other farmers for the sake of selling your produce in the 2004/05 farming season? <input type="checkbox"/> 1 YES <input type="checkbox"/> 2 NO					

SECTION 6: LIVESTOCK AND FARM ASSET OWNERSHIP

Q601	Do you own any livestock? Bushe mwalikwatapo ifitekwa ? 1. YES 2. NO						DK 888	NR 999	GO TO IF NO GO TO Q603
Q602	If yes, please tell me the types and numbers of livestock you own NGABALIKWATA, MUKWAI KUTI BAJEBAKO UMUTUNDU WAFITEKWA BAKWATA ELYO NE PENDWA.?								
	Livestock	No. owned	DK	NR	Livestock	No. owned			
	1 CATTLE (IN'GOMBE)		888	999	7 CHICKENS (NKOKO)		888	999	
	2 DONKEY (UNDA)		888	999	8 Guinea fowls (nkanga)		888	999	
	3 SHEEP (MPANGA)		888	999	9 DUCKS (MBATA)		888	999	
	4 Goats (mbushi)		888	999	10 Pigeons (nkunda)		888	999	
	5 Pigs (nkumba nangu Kapoli)		888	999	11 Other[specify] _____ Fimbi lonndolola _____		888	999	
	6 Rabbits (Ba kalulu)		888	999					
Q603	Do you own any farm assets? 1. YES 2. NO						888	999	
Q604	If yes, please tell me the types and numbers of farm assets you own								
	Asset	No. owned	DK	NR	Asset	No. owned			
	1 Hoes		888	999	9 Crop sprayers		888	999	
	2 Ploughs		888	999	10 Ox-carts		888	999	
	3 Ridgers		888	999	11 Tractors		888	999	
	4 Harrows		888	999	12 Rippers				
	5 Cultivator		888	999	13 Other [specify] _____		888	999	
	6 Shaka hoes		888	999	14 Hand grinding mill				
	7 Farm motorcycle		888	999	15 Hammermill				
	8 Maize Sheller		888	999	16 Fishing boat				

*****THE END*****

ANNEX 4

QUALITATIVE RESEARCH DISCUSSION GUIDES

DISCUSSION GUIDE FOR SMALLHOLDER FARMERS AND LIVESTOCK PRODUCERS

1. Production

- A description of the methods of production currently in use
- Current production levels and sales/earnings
- Changes in the volume of your production and sales/earnings
- If there has been change in the volume of the product, has this been profitable?
- Perception of smallholders on the underlying factors in the shifts in production?
- Has there been a shift in production costs?
- Changes in practices in production and sales
- Reasons for making changes in production and sales
- Impact on production and sales/earnings of changes in production and sales
- Production inputs – (Types, sources, prices, quantities)

2. Marketing

- Identify persons or entities to whom the farmers sell product
- Describe why they sell to these persons/entities, including how they compare to other buyers in areas such as cost, convenience, honesty, service, etc.
- Any changes that have occurred in number/type of buyers?
- Any perceived changes in the behavior of buyers?
- Changes in product's (selling) price
- Who determines the selling prices for products?
- Are there problems selling the products? If so, what are they?
- Constraints to accessing new markets
- Have there been changes in the marketing conditions in the last five years
- Responses of players to changes in the marketing conditions
- Are there any market regulations? If so what are they and how do they affect business?

3. Support institutions/agencies (Development Activities by NGOs, Cooperating partners, producer groups, etc)

- What are the major support institutions present in the area? What type of activities do they promote?
- Any contact with some of the support institutions/agencies? Which ones?
- [Conduct institutional mapping (venn diagrams) to establish which institutions/agencies are important to the smallholder farmers.]
- Development activities/schemes of interest to smallholder farmers which are being promoted by existing NGOs and other cooperating partners.
- Determine whether smallholder farmers participate or have participated with any of support institutions, what the type of support was given, and how they benefited (e.g., practices adopted, impact on production and sales/earnings, etc.)

- Whether smallholders belong to producer groups. What are the aims of the producer group smallholder is in.
- What services the producer group offers. How well the group operates. How effectively the group operates.
- What is the level of trust and transparency that exists between members and leaders
- What benefits the farmers have received from the producer group.
- Access to financial institutions, agriculture extension services or business development institutions

4. Horizontal Cooperation

- Whether and the degree to which smallholder discuss or otherwise share information regarding production and marketing with other smallholders, for example, issues such as what to produce, production practices, when and where to sell, prices, transportation, post harvest activities, etc.
- Whether and degree to which cooperate with other smallholders in areas such as production practices, selling, transportation, post harvest activities, etc.

5. Changes in infrastructure

- Description of the infrastructure utilized at various levels (production, marketing etc)
- Description of infrastructure improvements/deteriorations in the last 5 years? What caused the improvement or deterioration? How has this affected business?
- What is your assessment of the adequacy of infrastructure and impact on your business?

6. The Supply Situation

- What are the sources of input and which do smallholder farmers use? Why these as compared to others?
- Location of suppliers of inputs
- Do prices change over time? If so why? How?
- Any problems getting supplies? If so what are they?

7. Services provision

- Which service providers are present in the area?
- Any linkages with any of these service providers? What type of services do they provide?
- Are you linked to a full time or part time service provider? Why these service providers as compared to others?
- What is the quality of services provided?

8. Linkages, Collaborations and Cooperating organizations/institutions

- Description of the collaborative activities involved in and with who
- Collaborative activities which are most effective and why
- Collaborative activities which are least effective and why
- Links existing between smallholders and (1) input suppliers (2) service providers and (3) buyers. (Seek examples of cooperation and coordination and try to learn how it can contribute to efficiencies, improved competitiveness, and increased benefits to smallholders in the value chain).
- Embedded services (e.g., advice, training, grading, extension, credit, crop or herd protection, etc.) offered by input suppliers, service providers, and buyers and those used by smallholders.
- Frequency, cost, and quality of embedded services provided and benefits received by smallholders.
- Issues of trust, power relationships, cultural biases, and information flows between smallholder MSEs and those to whom they are linked in the value chain.

- Communication channels with the cooperating organizations/group – What form of communication channels are in use?
- Note: *Probe to determine whether any of the above answers involve PROFIT or PROFIT implementing partners.*

9. Upgrading (Improvements in business practices)

- Describe any changes made in production or sale of cotton, beef, or other products, including, but not necessarily limited to: type or variety, farming or livestock rearing practices, harvesting (cotton), and post harvesting (cotton)
- Describe the reasons why you made these changes
- Did you receive external help to make these changes, for example from NGO, government extension agent, buyer, service or input provider, etc?
- Describe the impact of the changes in terms of, for example, production, productivity, employment, sales, earnings, etc.
- Describe the obstacles you encountered in making these changes?
- Are the changes likely to be permanent? Why or why not?

DISCUSSION GUIDE FOR PRODUCER GROUP LEADERS

1. Group membership and operations

- When did group/association start operations?
- Who is eligible for membership and what is the actual composition of group members?
- What is leadership structure and how does it operate?
- Major aims of the group/association?
- Services provided and other benefits to members for joining the group/association?
- Frequency of meetings and what is covered in meetings
- How are decisions made in the group?
- How are disputes between members or between members and leadership resolved?

2. Services operations

- What services the producer group offers
- Do the members of the group operate collectively or as individuals at times?
- How effectively the group operates
- What is the level of trust and transparency that exists between members and leaders
- Has there been any change in the services/ or volume of products members produce since the association/group started operations?
- If there has been change has this been profitable?
- What is the group's perception on the underlying factors in the changes?
- Constraints in operations?

3. Services received by the group

- What service organizations are present in the area?
- Does the group have any linkages with any of these service providers?
- What is the quality of services provided?
- Role and importance of different service providers (e.g. transporting, storage, processing, wholesaling, exporting and retailing as well as technical advice, information, or training received)
- How readily availability are the critical support services and impact
- Proposals for improving quality and quantity of services

4. Government policies and programs & the associated incentives and risks

- What is the group's perception of the policy environment and its impact on your business?
- Do you feel you have influenced policy in any way?
- What are the barriers to participation in policy formulation and implementation? (Factors affecting the level of involvement)

DISCUSSION GUIDE FOR SERVICE PROVIDERS

1. Services charged and type

- Services provided
- Value of services provided
- Intended beneficiaries
- Operational areas (Geographically)
- Number of people reached by the service provider
- Ability to reach all the intended beneficiaries
- Constraints faced in trying to reach all the intended beneficiaries
- Any contractual arrangements with the smallholder farmers

2. Changes in market

- Changes which have occurred in the market
- Demand for services
- Efforts in providing new type or improved services (e.g., grading, training, extension, crop or herd protection).
- Associated incentives and risks for providing new or improved services
- Whether or not smallholders have an incentive to adopt new methodologies/management systems/technology/, etc.
- Are there positive technological or management changes that have been made by some smallholder farmers which could be reinforced through the project or with modification of the technology/management?
- What changes will the smallholder farmers have to make in order to adopt the new technology and will they be feasible?
- How would the smallholder farmers benefit from the proposed technology change? What could be the possible negative repercussions?

3. Linkages and Collaborations

- Links that exist between service provider and the smallholders (Seek examples of cooperation and coordination and try to learn how it can contribute to efficiencies, improved competitiveness, and increased benefits to smallholders in the value chain).
- Established communication channels with the smallholder? What form of communication channels are in use?

4. Impact on smallholder

- Most important successes relating to service providing
- The major factors responsible for the successes
- Least successful interventions to smallholder farmers
- Factors that contributed to the perceived difficulties
- Opportunities and incentives for service providers to improve on their activities/operations.

5. PROFIT Project (If relevant)

- What is the PROFIT project doing for them?
- What has it promised to do for them?
- What is their place in the PROFIT project?

DISCUSSION GUIDE FOR INPUT SUPPLIERS

1. Changes in supply & the associated incentives and risks

- What is the value of inputs supplied?
- Who determines the prices of inputs?
- Where do input suppliers get their supplies from?
- What type of supply arrangements have been in place? (Transport for the buyers, Discount? etc). Costs associated with this type of arrangement?
- Trends in the supply situation - what changes have occurred?
- If any changes, what are the underlying factors in the shifts in the supply situation?
- Efforts in providing new type or improved commodities or services (e.g., grading, training, extension, crop or herd protection).
- Incentives and risks for supplying new or improved varieties of commodities or services?
- Whether smallholders have an incentive to adopt new methodologies/technologies, etc?
- Are there positive technological or management changes that have been made by some smallholder farmers which could be reinforced through the project or with modification of the technology/management?
- What changes will the smallholder farmers have to make in order to adopt the new technology and will they be feasible?
- How would the smallholder farmers benefit from the proposed technology change? What could be the possible negative repercussions?

2. Linkages and collaboration

- What are the existing incentives for input suppliers?
- How profitable is the business?
- What opportunities exist for business growth?
- What risks are involved in the business?
- Do input suppliers work together to address issues of common interests? Which ones?
- Is there a committee, or anything like that, to coordinate input suppliers and their activities?
- Links that exist between input providers and smallholders (Seek examples of cooperation and coordination and try to learn how it can contribute to efficiencies, improved competitiveness, and increased benefits to smallholders in the value chain.)
- Established communication channels with the smallholder. What forms of communication channels are in use?

3. Constraints

- What constraints/problems do input suppliers face?
- Anything which is being done to address these constraints/problems?
- Who is involved?

4. PROFIT Project

- What is the PROFIT project doing for them?
- What has it promised to do for them?
- What is their place in the PROFIT project?
- What has been the impact of collaboration with PROFIT on operations and performance?

DISCUSSION GUIDE FOR FEED LOT

1. Production/Operations

- Volume (and type) of activities (if possible, get access to written records, or make note of them)
- Description of how feed lot system operates
- Opportunities/incentives for increasing volume of activities
- Materials and supplies – sources, storage, cost
- Prospects for new, better/cheaper sources and storage

2. Clientele

- Types of clientele (smallholder, medium, large scale commercial?)
- Relative importance of each type of clientele

3. Smallholder farmers

- General perceptions of smallholders as a group and as a market for veterinarians
- Culture and its impact on feed lots
- Nature and volume of commercial activities involving smallholders
- Nature of relationship with smallholders (for example, level of trust, cooperation, repeat transactions, familiarity, types of linkages, etc.)
- Opportunities in dealing with smallholder farmers
- Incentives in dealing with smallholder farmers
- Risks and constraints involved in dealing with smallholder farmers
- Options for increasing transactions with smallholders

4. Support (With particular focus on PROFIT)

- Institutions and forms of support given (with particular focus on PROFIT)
- Expectations (of feed lot owner)
- Impact of support given (with examples of specific actions taken or in planning stage)

5. Coordination and Cooperation

- List of activities needing the cooperation of others
- Opportunities and risks involved in cooperating with others
- How joint activities are coordinated

6. Constraints

- Any production/operational constraints (e.g. in the areas of finance, production, marketing/information, etc)?

7. PROFIT Project

- What is the PROFIT project doing for them?
- What has it promised to do for them?
- What is their place in the PROFIT project?
- What has been the impact of collaboration with PROFIT on operations and performance?

DISCUSSION GUIDE FOR VETERINARIANS

1. Veterinary services

- Current status of veterinary services market in terms of customers, sales, earnings, stability, growth, constraints, etc.
- Types of veterinary service providers, relative strengths and weaknesses of each, position in marketplace,
- General opportunities, risks, constraints in veterinary services market

2. Smallholder farmers

- General perceptions of smallholders as a group and as a market for veterinarians
- Culture and its impact on vet business
- Volume of commercial activities involving smallholders
- Nature and volume of relationship with smallholders (for example, level of trust, cooperation, repeat transactions, familiarity, types of linkages, etc.)
- Opportunities in dealing with smallholder farmers
- Incentives in dealing with smallholder farmers
- Risks and constraints involved in dealing with smallholder farmers
- Options for increasing transactions with smallholders

3. Operations

- State of affairs in transportation of animals, communication/contact with smallholder farmers
- Opportunities and risks related to transportation of animals, communication/contact with smallholder farmers
- State of affairs in terms of morbidity, mortality, general status of small-holder stock and reasons why
- Common practices among smallholders and whether there is any evidence of change
- What can or should be done to change the current practices and state of affairs?
- What are veterinarians doing, or what can they do, to change the current practices and state of affairs?
- Overall, what is the level of impact of veterinarians on state of affairs among smallholders? What are impediments and possible solutions to having a bigger impact?

4. Institutional Support

- Support received from PROFIT
- Support received from other institutions
- Impact of support given (with examples of specific actions taken or in planning stage)

5. PROFIT Project

- What is the PROFIT project doing for them?
- What has it promised to do for them?
- What is their place in the PROFIT project?
- What has been the impact of collaboration with PROFIT on operations and performance?

DISCUSSION GUIDE FOR AGENTS/BROKERS

1. Agents/Brokers operation

- Description of how the agents/brokers system operates
- What are the existing incentives for agents and brokers?
- How profitable is the business?
- What opportunities exist for business growth?
- What risks are involved in the business?

2. Constraints

- What constraints/problems do agents/brokers face?
- Anything which is being done to address these constraints/problems?
- Who is involved?

3. Smallholder Farmers

- General perceptions of smallholders as a group and as a market for agents/brokers
- Culture and its impact on agent/broker business
- Volume of commercial activities involving smallholders
- Nature and volume of relationship with smallholders (for example, level of trust, cooperation, repeat transactions, familiarity, types of linkages, etc.)
- Opportunities in dealing with smallholder farmers
- Incentives in dealing with smallholder farmers
- Risks and constraints involved in dealing with smallholder farmers
- Options for increasing transactions with smallholders

4. Cooperation & Coordination

- Do agents/brokers work together to address issues of common interests? Which ones?
- Is there a committee, or anything like that, to coordinate agents/brokers and their activities?

5. PROFIT project

- What is the PROFIT project doing for them?
- What has it promised to do for them?
- What is their place in the PROFIT project?
- What has been the impact of collaboration with PROFIT on operations and performance?

DISCUSSION GUIDE FOR RETAILERS

1. Retailer services

- What are the existing incentives for retailers?
- How profitable is the business?
- What opportunities exist for business growth?
- What risks are involved in the business?

2. Smallholder Farmers

- General perceptions of smallholders as a group and as a market for retail services
- Culture and its impact on retailer business
- Nature and volume of commercial activities involving smallholders
- Nature of relationship with smallholders (for example, level of trust, cooperation, repeat transactions, familiarity, types of linkages, etc.)
- Opportunities in dealing with smallholder farmers
- Incentives in dealing with smallholder farmers
- Risks and constraints involved in dealing with smallholder farmers
- Options for increasing transactions with smallholders

3. Constraints

- What constraints/problems do retailers face?
- Anything which is being done to address these constraints/problems?
- Who is involved?

4. Cooperation & Coordination

- Do agents work together to address issues of common interests? Which ones?
- Is there a committee, or anything like that, to coordinate retailers and their activities?

5. PROFIT project

- What is the PROFIT project doing for them?
- What has it promised to do for them?
- What is their place in the PROFIT project?
- What has been the impact of collaboration with PROFIT on operations and performance?

DISCUSSION GUIDE FOR THE LEAD FIRM

1. Lead firm services

- What are the existing incentives for in the outgrower business?
- How profitable is the business?
- What opportunities exist for business growth?
- What risks are involved in the business?
- Who are the competitors and position in marketplace relative to the competitors?

2. Smallholder Farmers

- General perceptions of smallholders as a group and as a market
- Culture and its impact on lead firm
- Nature and volume of commercial activities involving smallholders
- Nature of relationship with smallholders (for example, level of trust, cooperation, repeat transactions, familiarity, types of linkages, etc.)
- Opportunities in dealing with smallholder farmers
- Incentives in dealing with smallholder farmers
- Risks and constraints involved in dealing with smallholder farmers
- Options for increasing transactions with smallholders

3. Operations

- Common practices among smallholders and whether there is any evidence of change
- What can or should be done to change the current practices and state of affairs?
- What is lead firm doing, or what can it do, to change the current practices and state of affairs?
- Overall, what is the level of impact of lead firm on state of affairs among smallholders? What are impediments and possible solutions to having a bigger impact?

4. Constraints

- What constraints/problems do are being faced?
- Anything which is being done to address these constraints/problems?
- Who is involved?

5. Cooperation & Coordination

- Do lead firms work together to address issues of common interests? Which ones?
- Is there a committee, or anything like that, to coordinate lead firms and their activities?

6. PROFIT Project

- What is the PROFIT project doing for them?
- What has it promised to do for them?
- What is their place in the PROFIT project?
- What has been the impact of collaboration with PROFIT on operations and performance?

DISCUSSION GUIDE FOR INPUT WHOLESALER OR MANUFACTURER

1. Wholesaler or manufacturer

- What are the existing incentives for wholesalers or manufacturers?
- How profitable is the business?
- What opportunities exist for business growth?
- What risks are involved in the business?

2. Smallholder farmers

- General perceptions of smallholders as a group and as a market
- Culture and its impact on your business and wholesalers or manufacturers in general
- Nature and volume of commercial activities involving smallholders
- Nature of relationship with smallholders (for example, level of trust, cooperation, repeat transactions, familiarity, types of linkages, etc.)
- Opportunities in dealing with smallholder farmers
- Incentives in dealing with smallholder farmers
- Risks and constraints involved in dealing with smallholders
- Options for increasing transactions with smallholders

3. Constraints

- What constraints/problems are being faced?
- Anything which is being done to address these constraints/problems?
- Who is involved?

4. Cooperation & Coordination

- Do input wholesalers/manufacturers work together to address issues of common interests? Which ones?
- Is there a committee, or anything like that, to coordinate lead firms and their activities?

5. PROFIT Project

- What is the PROFIT project doing for them?
- What has it promised to do for them?
- What is their place in the PROFIT project?
- What has been the impact of collaboration with PROFIT on operations and performance?