

**EVALUATION OF EXISTING INPUT DELIVERY SYSTEMS FOR BANANA AND
LEGUMES BASED SYSTEMS: CASE STUDY OF BURUNDI**

by

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STUDENT'S DECLARATION

I declare that this is my original research work and to the best of my knowledge it has not been presented for the award of degree in any university or college.

Chrystal KIMANA

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ABSTRACT

The purpose of this study is to evaluate the input delivery systems of banana and legume based systems in Burundi. Most farmers are experiencing challenges and constraints as they attempt participation in the development of the agricultural sector in Burundi. The most notable among the constraint and challenge faced is inaccess to farm inputs due mainly to poor delivery systems.

This study dealt with the following research questions: What is the structure of the agro-input systems in terms of the key players and marketing channels? What are the types of inputs stocked and information services provided by the agro-inputs dealers to their customers? How to examine the product differentiation, associated prices and easy of entry into agro-input trade? What are the constraints and challenges faced by the dealers and Non Government Organizations?

The researcher used three research instruments, namely: questionnaires, interviews and observation to arrive at the results of this study. After collection and analysis of data using STATA version 8, the interpretation revealed astounding results that fulfilled the curiosity of the researcher. It was discovered that many agro-input traders stock seeds more than other agro based inputs. It was found out that retailers provide more information to the farmers than wholesalers. Major constraints faced by the agro-input dealers are high transportation costs, delayed-deliverance, price fluctuation, high taxation and packaging materials.

Barriers to entry were determined by establishing the threshold capital required for starting business. Sources of funding and the current operational costs were analyzed to determine both the diversity and ease of access to credit to facilitate entry. At the end, the researcher has made some recommendations and conclusions.

DEDICATION

To my dad NTIRWINYEGEZA Etienne and my mum: Lyduine NDAYISABA.

To my brother and sisters: Yvan-Roger, Chantal and Ange Belyse,

To my cousins, uncles and aunts,

To all my friends.

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LIST OF ABBREVIATIONS AND ACRONYMS

%	: Percent
CIALCA	: Consortium for Improving Agriculture-based Livelihoods in Central Africa
DPAEs	: Direction Provinciale de l' Agriculture et de l' Elevage
GDP	: Gross Domestic Product
Govt	: Government
IITA	: International Institute of Tropical Agriculture
ISTEBU	: Institut de Statistiques et d' Etudes Economiques
Kg	: Kilogrammes
Lts	: Litres
MFIs	: Micro Finance Institutions
N	: Observations
PNSA	: Programme National de Sécurité Alimentaire
RQs	: Research Questions
S.D.	: Standard Deviation
SACCO	: Savings and Credits Cooperatives
UNFAO	: United Nations for Food Agriculture Organizations

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CHAPTER ONE

RESEARCH PROBLEM

The agricultural sector forms the foundation of the Burundi economy. 94% of the Burundi population is engaged with agricultural activities (PNSA-2008). Agriculture contributes 50% to the GDP and 95% of the food supply to the population and contributes 90% to the foreign exchange earnings (ibid). This confirms that agriculture is the mainstay of the Burundi economy. The sector is main source of livelihood for many people and has helped in the fight against poverty by creating employment opportunities, raising income levels, sustaining the environment and standardizing food security.

In Burundi, the most predominant crops are bananas and legumes. These crops are used for domestic consumption and can also be sold in the markets. The actual banana production between 1983 and 2005 has been estimated at 1,587,700 tons with an output average of 9 to 25 tons/ha in rural areas (ISTEBU, 2004).

The production of bananas and legumes has not grown steadily over the years. This is as a result of several factors and reasons which include access to farm inputs and inputs delivery systems. Most farmers do not have access to proper information for agricultural production hence use rudimentary technologies. There exists the problem of pests and crop disease management. This has led to low farm outputs for many households.

Poor farming techniques have resulted into declining soil fertility which has reduced agricultural production. This situation contributes to poor land stewardship, accelerated land degradation, decline in household welfare, and negatively affects farmer investments in farm

inputs and returns to agricultural production (Bashaasha, 2001, pp).

There are setbacks in communication and transport networks for farm inputs. Most farmers are faced with several constraints and challenges in attempting to access quality seeds, fertilizers and pesticides needed for enhancing agricultural production. Most farmers experience inadequate links with the development partners and the government agricultural extension workers. This has negated the improvement of sourcing for better alternatives for agricultural production growth. According to Bairoch (1971,195), the agriculture priority does not constitute the option of underdeveloped countries, but an immediate necessity.

Background of Burundi

Burundi is a country in Central Africa, widget between Tanzania in East, the Democratic Republic of Congo in West and Rwanda in North. It occupies a high plateau divided by several deep valleys. The land is 9.903 square meters (27.830square kilometers). It is a landlocked country. The current population of Burundi is 8,390,505million (<http://www.state.gov/r/pa/ei/bgn/2821.htm>).The population growth rate is currently standing at 3.6 percent. The life expectancy is 50.8 years. The infant mortality rate is 61.9/1000 and the birth rate is 42.6/1000(ibid).

In Burundi, people speak French and Kirundi as the official languages. Currently, certain segments of the population speak English and Kiswahili languages. In terms of religion, 62 percent of the population is Roman Catholic, 23 percent are following the indigenous religions, 10 percent are Muslims and 5 percent are Protestants. Burundi falls within the Equatorial type of climate, high plateau with considerable altitude variations (Ranging from 772 meters to 2670 meters above the sea level).The average annual temperature varies with the altitude and ranges

from 23 to 17 degrees centigrade but it generally moderates as the average altitude is about 1700m. The Average annual rainfall is about 150cm. Its terrain is hilly rising from 2,600ft at the shore of Lake Tanganyika and maintains to more than 2,700 meters (9,000ft) above the sea level. Burundi is a country that has been in war since the mid 1960s to 2003. It is recovering and stabilizing politically and economically (<http://www.state.gov/r/pa/ei/bgn/2821.htm>).

Problem Statement

Most farmers in Burundi are faced with abject poverty. They are meeting lots of challenges and constraints as they attempt an improvement in agriculture production. The most notable among the problems are inaccess to farm inputs due to poor delivery systems. It has also been realized that farming equipments and agro based inputs are relatively expensive.

Most of the farm inputs are imported. The dealers are attaching several costs which are transmitted to the farmers. This has escalated the prices with very high margins. The trade in farm inputs in Burundi is not properly regulated, with few market participants. This has resulted into lack of competition.

The farmers are subjected to high consumer prices. In addition, there are no proper linkages among the small holder farmers, government extension workers and development partners. This has further exacerbated input access by farmers.

Purpose of the Study

This study aims at evaluating the input delivery systems for banana and legumes based systems with the aim of identifying the existing gaps. The study intends to suggest intervention strategies and put recommendations that can tilt around the archaic procedures in developing the farming input delivery systems for the better.

Study Objectives

The overall objective of the study is to evaluate the input delivery systems in banana and legume-based systems in Burundi. The specific objectives of this study are the following:

1. To assess the structure of the agro-input systems for bananas and legumes in terms of the key players and the marketing channels.
2. To investigate the types of inputs stocked and informational services offered by the agro-inputs dealers to their customers.
3. To examine the existence of product differentiation, the associated prices and easy of entry into agro-input trade.
4. To highlight the constraints faced by the key players in the input delivery systems.

Justification of the Study

This study is significant because gaps in farm input delivery systems are used to identify intervention strategies with a view to providing mitigation alternatives. This would lead to access to inputs by farmers in banana and legume based systems thereby leading to increased productivity. The increased productivity has direct impacts on the household diets and income.

Research Questions

The study was guided by the following research questions:

RQ1. What are the structure of the agro-input systems in terms of the key players and marketing channels?

RQ2. What are the types of inputs stocked and informational services provided by the agro-inputs dealers to their customers?

RQ3. How to examine the product differentiation, associated prices and easy of entry into agro-input trade?

RQ4. What are the constraints and challenges faced by the dealers and Non Government Organizations?

Assumptions

The study will be based on the following assumptions;

It is assumed that if input farmers needs and wants are targeted, the farmers will be motivated and there will be an improvement of input quality and quantity.

Since the purchasing power of smallholder farmers is low, the input dealers can apply the policy and the theory of economics of scarcity.

It also assumed that if the agro-input dealers get the expectations of farmers, they will improve input quality, quantity and government revenue will increase.

Delimitation

This study sought the evaluation of the existing input delivery systems for banana and legumes based systems in Burundi.

The research was not focusing on the whole country but on four provinces namely Kirundo, Gitega, Bujumbura Urban and Cibitoke.

The research was limited only to the agro-input dealers and non government organizations.

Limitation

Since, the study had a large sample; it was not possible to accomplish the study on time.

Data analysis technique employed in the study was advanced and the author had to familiarize for some time.

However, the researcher worked in collaboration with the local authorities and managed to get the needed information for this work to materialize.

Scope of the Study

Due to the varieties and dynamics of the Burundi agriculture observed in different regions, the researcher limited the study on four provinces. The sampled provinces' characteristics are a representative of the entire country. However; this study does not intended to present solutions or any interventional strategy or method.

Definition of Key Terms

In this study, there are key words which were used and that required for concise definitions and clear explanations to help the reader catch the same idea and meaning as intend in this work. Those key words are:

Delivery

The action of setting free or the act of giving or surrendering. (Oxford dictionary 1980)

Traders

Persons engaged in trade.(Dictionary:The Random House College,1392)

System

A set or assemblage of things connected or associated. (Oxford Learneers'Dictionary 1990, 165)

Input

Action of putting something in, the input of additional resources into the project. (Oxford Learneers'Dictionary 1990, 96)

Evaluation

Appraisal or assessment. (Oxford dictionary 1980, 55)

Efficiency

The use of minimal resources to provide a desired volume of output. Oxford Learneers'Dictionary 1990, 46)

Productivity

The ratio of output of goods and services divide by resources used to produce them (Hersey 1996, 388).

Quality

The overall characteristics of a product that allow it to perform as expected in satisfying customers needs (Pride 2004, 446).

Service

Intangible activities that can be exchanged for value to satisfy consumers' needs and wants (Lascu 2004, 604).

Farmer

Person who owns or manages a farm. (Oxford English dictionary 1933, 77)

CHAPTER TWO

LITERATURE REVIEW

This chapter is concerned with what others have researched and discussed about the research topic. According to Peter (1994, 26), the literature review has to provide the needed background information in areas of research interest. It has to formulate defensible thesis statement arguments. It helps to state hypothesis accurately, acceptably and also to ensure how much research has already gone into various aspects of research problem. Finally, it will give the research's writing overall credence as scholarly work. Referring to Mugenda and Mugenda, "Literature review involves locating, reading and evaluating reports of previous studies, observations and opinions related to the planned study. It therefore leads to appreciating and understanding the research that has already been done in one's area of interest" (Mugenda 2003, 14)

The author wanted to know well what has already been said about evaluation of the existing input delivery systems for banana and legume-based systems. Agriculture continues to be the prominent in its contribution to the GDP, export earnings and employment of most countries. The sector plays a key role in the region's food security, trade and industrial development. In Burundi, agriculture is characterized by subsistence smallholder production that exhibits fluctuating production levels, low productivity and low quality which has resulted to most countries in the region becoming food deficit hence net importers of food. According to Kirsten and Vink (2008,16), many traders in the liberalized agricultural markets operate in a context in which prices are not publicly announced, goods are highly differentiated with no

formal standardization and classification system, contracts are oral and non-standardized, there is a little inspection or certification, and virtually no recourse to legal means of contract enforcement. All these factors expose both producers and traders to high vulnerability of being cheated with respect to market prices, qualities and quantities of the delivered good, as well as other contractual terms such as the timing of delivery, and the product spoilage or loss during transport. Other problems that have been cited in the literature review include;

Promoters bearing high transaction costs because of poor infrastructure and dealing with individual farmers scattered over large areas.

Weak farmer organizations with most lacking managerial, leadership and production skills
International trade agreements put up barriers to trade and deny agricultural products from Africa fair to world markets.

High production risks due to crop failure, resulting in insufficient volumes, or products that do not meet the standards.

Inability among farmers to predict prices or factor in unfavorable exchange rates and other marketing risks. This sometimes leads to buyers ending contracts prematurely.

Promoters who take advantage of farmers' weak bargaining position to exploit them.

Linkages Between Smallholder Farmers and Service Providers

In the 1970s and early 1980s, farmers benefited from subsidies in fertilizers that were distributed through the cooperatives established in the communities (Kirsten et al 2001, 200) and their demand for food (Bosman 2001, 208). According to Ewang (1999, 20), many of the farmer organizations formed around the <<cooperative model>> collapsed as soon as the external assistance was withdrawn and this led to the serious doubt on the appropriateness of this model

in rural communities.

Initially, the process of organizing fertilizer dealers organized a meeting during which more than one input supplier addressed farmers representatives on issues related to prices and conditions of delivery of the inputs to the community. Agreements were reached on how payments would be done. They also agreed on the volumes of the inputs to be bought at discounted prices. Farmers' representatives arranged community meetings together with the local leadership for feed back sessions on the agreements with the service providers. It was during these report backs that the final decisions on which appropriate supplier would be agreed on by the communities. Process steps on who will be responsible for collecting funds, depositing the money to the bank account of the supplier and making necessary liaison were well defined for each activity identified. While the procedure above is still followed, it is now a common trend to notice fertilizer input suppliers addressing the whole community on invitations of the local farmer organizations.

In so doing, the step that involves that farmer representative to act as the initiator of the process in linkage with the service providers is eliminated. The meeting between the communities directly with the service providers provides a great opportunity for everybody to get first hand information and contribute to the final agreement. However, it is a costly exercise for the input suppliers where many communities are involved and it works well where the supplier has a community liaison officer who also understands and speaks their own language. With the higher demand of fertilizers especially in the communal areas, this would also limit coverage in terms of making the input to be accessible by the majority of farmers who need it. Due to the latter reason, change of suppliers has been realized annually largely because of;

Suppliers preferring not to deliver inputs to the communities as agreed in the previous year, but still willing to provide services to the farmers.

Fertilizer dealers' representatives who served as linkages between the company and farmers leaving for greener pastures or transferred.

Communities identifying other suppliers with better prices and conditions of delivery of inputs.

Selling of fertilizers was being done at small scale within shops, wholesale and Through cooperatives.

This process led to the following outcomes:

The local truck owners were tempted to increase the price of transportation as the demand for the manure increased.

Many truck owners preferred to collect the manure themselves and sell to the communities directly. While this was good, each bag of manure was comparatively expensive because the truck owners would include the costs of labor, which is not a factor when farmers collect the manure themselves.

Many local cattle owners with kraals started to package the manure into small bags and sold them to the farmers. But farmers complained about high prices of the manure relative to the amount as well as its poor quality.

Impacts of the Process of Linking Farmers and Service Providers

The impact of the soil fertility management process and the linkages and negotiations by farmers and service providers were assessed at different levels:

The level of groups and communities being involved in this whole process and its spreading.

Quantities and quality of inputs purchased.

Farmer assessment of their perceived benefits of the whole process.

Input Delivery Systems

The problem of poor communications, inadequate transport systems and lack of competition among traders generally result in high costs and delivery problems for farm inputs such as drugs and vaccines, and support services such as animal health care and extension advice. In the past basic services, many developing countries were providing this service through the Ministry of Agriculture and Livestock Development Staff. The quality and standard of the services provided has always been open to criticism and subject to budgetary constraints.

The Purchasing Power of the Burundi Population

Burundi is one of the smallest and densely populated nations in Africa. Its poor transportation system and its distance from the sea have tended to limit economic growth. The growth of Burundi is slow; the real growth rate is 5 percent. The economy of a country affects the purchasing power of the people. Purchasing power is the ability of people in the country to buy goods and services. Due to the poor economy, the people in Burundi have low purchasing power (Juliet 2003, 3).

The Effect of Household Wealth on Farm Input Market Participation

The contribution of technological change to agricultural productivity in developing countries is well documented (Arndt et al. 1977, 73). Through fundamental to rural transformation, input technology are often reluctant to use new inputs due to production and price risks that could render input use unprofitable (Kelly et al. 2003, 379).

The ability of households to cope with such risks is often related to the level of wealth of the household (Hardaker et al. 1997, 66). Because wealth is disproportionately distributed among rural households, this paper proposes a novel two-tier approach to the estimation of factors determining improved seed demand at the farm level in developing agriculture. Firstly, rural households must be stratified into pre-determined wealth categories, and secondary improved variety adoption and seed demand models must be specified and estimated jointly for each wealth category. This approach affords the identification of credible policy relevant recommendations for effective targeting of interventions.

Throughout the developing world where input technology has made less dramatic changes in agricultural productivity, the incidence of rural poverty and food insecurity is pervasive. Agricultural development policy has often focused on getting the technology right but not on appropriate targeting strategies, an equally important element of agricultural growth. It is widely acknowledged that the extensive growth in Asia's green revolution created welfare effects beyond the adopting farmers and villages (Rosegrant 2000, 78) and (Renkow 2000, 463). Nevertheless, large numbers of rural households across Asia for whom targeting of the "green revolution" technologies was inappropriate or less effective remain food insecure. Therefore, if improved input technology is to make a mark on the poverty of farm households in developing countries, scientists must design innovative approaches that clearly identify constraints to

improve input uptake.

On the hand, farm input technology such as improved seed is resource intensive. Cash is needed to purchase the seed, which is normally more costly than the local ones, and complementary inputs such as fertility for optimal grain yields. This explains why “access to credit “is often observed as an important determinant of improved variety adoption (Adesina 1993, 297). On the other hand, resource poor farmers in developing countries are usually cash-trapped and have limited access to credit for varied reasons. Consequently, they rely on productive assets to chart a route out of poverty through wealth creation (Moser 1998,99). Given that assets are disproportionately distributed among households, estimating a common demand model for a heterogeneous wealth group masks the real effects of any selected determinants, a recipe for misleading conclusions and policy recommendations.

Agriculture: The Leverage Pillar for the Development in Rural Areas

According to (World Bank 2005), 77% of population and 90% of the poor currently live in rural areas. 70% of income of rural dwellers comes from agricultural activities. Therefore agricultural and rural development is a crucial component of the Comprehensive Poverty Reduction and Growth Strategy. It is obvious that, if there is any effort to deploy, it should first be invested into improvement of agricultural techniques and habits. “Agriculture implies the purposefully organized application of human ingenuity and labour to combining natural resources of flora; fauna, soil, water, etc. to produce food and other agricultural products to meet societal needs. Agriculture has been the predominant source of livelihood for most people during several millennia. Institutions that evolved in agrarian societies regulating social hierarchies, governance, property rights, production, distribution, trade and technological change

have remain influential long after these societies became increasingly urbanized and industrialized” (Barraclough 2000,xi).

Different Approaches to Community Development

To go for the community development in rural areas, there are many approaches that are used. The major and most important ones are:(1) The enhancement of substantial improvements in basic public infrastructure investment and service delivery for the poor,(2) Motivating the potential and key role of effective local government in promoting and improving dialogue and partnership between the state, citizens and their communities, civil society and the private sector in local planning and service delivery; and (3) Local capacity building and institutional change, and for national decentralization policy reform(Morris1999,38).Any program which does not consider the latter approaches cannot go farther because of lack of community participation.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This research is dealing with the evaluation of existing input delivery system for banana and legume based systems in Burundi focusing on Kirundo, Gitega, Bujumbura Urban and Cibitoke provinces. This chapter is describing the methodology and tools used in this study. The major components are: research design, population, sample and sampling techniques, research instruments, their validity and reliability, data collection procedures and data analysis techniques and procedure.

Research Design

The design of the research was based on the survey method which is an attempt to collect data from a representative sample of the population in order to determine the current status of that population with respect to one or more variables, and generalize its findings (Mugenda 1999, 196).

Survey is good and an easy way to collect data from the point of views or opinions, information on attitudes and reasons for behaviour (Nachiamas 1996, 23).

Survey research seeks to obtain information that describes existing phenomena by asking individuals about their perceptions, attitudes, behavior or values (Mugenda 1999, 165).

According to Babbie (2004) a survey includes cross-sectional and longitudinal studies using questionnaires of structured interviews for data collection, with the intent of generalizing from a sample to a population.

Pre Testing

The researcher carried out a pre test of the research tools before undertaking the real research. Pre testing was done to see the applicability of the tools. It also aimed at seeing how the questionnaire and the interview guide would be acceptable to the respondents. Pre testing was done in Gitega province. After the pre test, alterations were made to tools which were subsequently in the entire survey.

Target Population

According to Mugenda and Mugenda, a population is a complete set of individuals, cases or objects with some common observable characteristics (Mugenda 1999, 41).

This study is oriented to the agro-input dealers and NGOs operating in the four provinces of Burundi which included Kirundo, Gitega, Cibitoke and Bujumbura.

Population is the aggregate of all cases that confirm to same designated set of specifications (Nachiamas and Nachiamas 1996, 179). The four provinces are wide. The target population was determined through this formula $N = 2 \left[\frac{ZC}{D} \right]^2$.

N=sample size

Z=1.96 confidence interval

C=0.5 of population standard deviation for the variable whose mean one is interested in measuring.

D=0.12 level of accuracy

Sample and Sampling Techniques

To effectively conduct this study, the researcher opted to constitute a “Purposive Sampling” Much to say, the study considered a population of one hundred and thirty (130) people. The researcher selected a presenting and purposive random with a sample size equal to 130 of the population. T

Purposive Sampling was used because it is a sampling technique that allows a researcher to use cases that have the required information with respect to the objectives of this study (Mugenda 2003, 50).The sample consisted of agro-input dealers and Non Government Organizations involved on input delivery systems for bananas and legumes who reside in Kirundo, Gitega, Bujumbura and Cibitoke provinces.

Table 12: Sample of the Study

Provinces	Number of respondents
Kirundo	50
Gitega	40
Bujumbura	25
Cibitoke	15
Total	130

Source: Survey results, 2009

The above table 1 shows the number of respondents interviewed in each study area during the survey.

Research Instruments

The instruments that have been applied in this study were two namely questionnaires forms and interview guides (schedules).

Questionnaire Forms

Questionnaires are commonly used to obtain important information about the population. Each item in the questionnaire is developed to address a specific objective, research question or hypothesis of the study. So, the researcher must know how information obtained from each questionnaire item will be analyzed (Mugenda and Mugenda 2003, 71).

The questionnaires were addressed to different types of input trader.

The table bellow to the type of input trader interviewed in the areas study.

Table 13: Types of Input Traders

Type of input trader	Frequency	%
Wholesaler	7	5.39
Retailer	61	46.92
Wholesaler cum retailer	13	10.00
Government	6	4.62
NGO	9	6.92
Private firm	2	1.54
Others(Manure trader)	32	24.62
Total	130	100.00

Source: Survey results, 2009

The above table2 revealed that the individual trader

Comprise: wholesaler, retailer, wholesaler cum retailer, private firm and others. Retailers

are the most interviewing during survey due to their availability. The institutions such as NGO and Government are also required.

In all processes, open ended and closed ended questions were used. The open-ended are questions for which the respondents are asked to provide his or her own answers. While the closed-ended questions are survey questions in which the respondent is asked to select an answer from among a list provided by the researcher (Babbie 2004, 245).

The questionnaire will be given to respondents in order to give answers and the researcher will recuperate them for analysis.

Interview Guide

According to Creswell (2003; 17), the use of interview schedules or guide during research allows research subjects to freely express themselves and the researcher can easily explore the kind of emotions and feelings they express.

This method has been preferred by the researcher because it is a good away to avoid, or to reduce the wrong answers from the questionnaires that can mislead the study and the instrument provided the important information for this study.

Validity and Reliability of Research Instruments

Validity is an essential element for research instruments. Validity is concerned with the questions “Am I measuring what I intend to measure?” The problem of validity arises because measurement in the social sciences is, with very few exceptions, indirect (Nachmias and Nachmias 1996, 165).

For an instrument to be valid, it must be reliable. Reliability is a matter of whether a particular technique applied repeatedly to the same object, yields the same results each time (Babbie 2004, 141). For the instruments to be validated, the instrument involves pre-testing. A pre-test of the research tool was done in Gitega town. The researcher visited the DPAE in charge of Gitega province, government extension workers, NGO officials and farm in-put dealers. The pre- testing of the tools was done by the researcher, university supervisor, and CIALCA scientist and government extension workers. After the pre-tests, the above mentioned team held a meeting to review the relevance and clarity of the questionnaire and changes were made to them as appropriate. These pre-testing questions are done through pilot study which the questionnaire is given to just a few people (Ciddens 1991, 824).

To overcome the problems related to missing quality responses and data, the researcher made appointments with the would respondents in advance.

Data Collection Procedures

Before collecting data, the researcher received permission from the CIALCA project staff to seek for collaboration with others to carry out the field research.

Data collection was done in Kirundo, Gitega, Bujumbura Urban and Cibitoke provinces.

The arrangements between the researcher and CIALCA were done in order to get access to the vehicle and to stay in the study sites to conduct interview with agro-input dealers and NGOs.

The researcher got a privilege to use the CIALCA materials.

As the result, qualitative and quantitative data were collected at the same time.

Data Analysis and Procedures

Data analysis relates much to the procedures that have been used during data collection. The design method that facilitated the analysis of data was a mixed method. That mixed research method focused on collecting and analyzing both qualitative and quantitative data in a single study as advised by Creswell (2003, 210).

During the analysis, description, statistical studies, figures and tables were used to compare the documentary research collected data from the office to those found from field.

CHAPTER FOUR

RESEARCH FINDINGS AND INTERPRETATION

The study aimed at evaluating the existing input delivery systems for banana and legumes based systems in Burundi. This chapter is dealing with the presentation, interpretation, and discussion of the data collected. The following research questions have been addressed by this study;

RQ1. What is the structure of the agro-input systems in terms of the key players and marketing channels?

RQ2. What are the types of agro- inputs stocked and informational services provided by the agro-input dealers?

RQ3. What are the factors that determine ease of entry to agro-input trade?

RQ4. What are the constraints and challenges faced by agro-input dealers?

This chapter is critically looking at the types of agro-inputs stocked, different types of agro-input traders, the kinds of informational services provided, pricing, constraints and challenges faced in the trade, and the marketing channels in relation to agro-input products.

Types of Inputs Stocked and Information Services

Table 3 shows the different types of inputs stocked services in relation to quantities

Table 14: Type of Farmer Inputs Stocked

Type of farm input	Average quantity stocked	S.D	N
Seeds*	77387.5 kg	449424.4	85
Pesticides	1788.9 Lts	4503.1	7
DAP fertilizers	4178 kg	4638.9	25
Detane fertilizers	20158.3 kg	3952797	6
Equipments**	6355.4	16831.9	15
KCL fertilizers	48864.3 kg	111244.1	7
Organic Manure	158044.4 kg	521363.4	45
Chicken Manure	3000000 kg	-	1
NPK fertilizers	64285.7 kg	212179.2	14
Banana Suckers	48000	-	1
UREA fertilizers	49124.4 kg	239486.7	39
Banana Vitroplants	203610	299365.5	5

Source: Survey results, 2009

n=observations

*Seeds here include legumes: ground nuts, beans, cabbage, maize, onion, potatoes, soja, sorghum, tomatoes.

**Equipments contain: hoes, hoe handles, watering cans.

Many agro-input dealers stock seeds more than the rest of the other inputs. According to the study, 77387.52 kg of seeds on the average are stocked annually. This is possible because seeds are easier to market than other farm inputs. Inorganic fertilizers such as UREA, KCL, Detane and NPK are stocked in large amounts due to the availability to the source as opposed to

DAP which is expensive. Chicken manure is also in demand by farmers hence it has market as showed in the table above.

Banana suckers are in small quantity than banana vitroplants due to the development of vitroplants by private organizations like Agrobiotec, Vitrolab, Scophar and Phytolab.

The table shows that farming equipments are in short supply in all the study areas. In contrast, the demand for pesticides by smallholder farmers is increasing due rampart damages of pesticides.

Table 4 shows the different types of information services offered by the traders to their customers in answering RQ2.

Table 15: Number of Farmers who Benefited from the Purchase Outlets

Type of information offered	Proportion of traders offering the information (%)	Main type of trader offering the information
Appropriate application rates	61.5	Retailers (51.3%)
Protective clothing during application	24.6	Retailers (40.6%)
Appropriate storage	34.6	Retailers (42.2%)
Product content	27.7	Retailers (36.1%)

Source: Survey results, 2009

The table 4 presents a summary of types of information services available to farmers in relation to traders providing the former. Most traders provide information regarding application rates as opposed protective clothing and appropriate storage of farm inputs. It was found out that retailers provide more information to the farmers than wholesalers. The wholesalers are focusing more on the retailers.

Constraints Faced by Traders to Source and Sale Constraints

Table 16: Proportion of the Input Trader and Constraints Faced by the Trader to the Source

Constraints	wholesaler	Retailer	Government /NGOs	Private firm	Manure trader
Bad road to carry the input	11.1	0	0	0	13.6
Corruption	20	6.1	0	0	0
Delaying in deliverance	0	3	78.6	0	0
Equipment are not available	0	0	34.3	0	31.8
Price fluctuation	0	57.6	0	0	0
High transport cost	40	32.3	0	100	13.6
Lack of drugs	0	0	10	0	18.2
Customers officers are not collaborate well with the dealers	0	11.1	14.3	0	0
Less quantity to the source	0	6.1	48.6	0	4.6
Protectionism	0	22.2	0	0	0
Lack of labor	0	0	10	0	9.1
No means of follow-up	0	3	24.3	0	0
Problem of security	20	6.1	0	0	0
Problem of storage	0	0	0	0	4.6
High taxes	0	17.1	0	0	0
Don't pay on time	0	9.1	0	0	0
Time losing to purchase inputs	20	3	0	0	0
Problem of package	0	0	0	0	4.6

Source: Survey results, 2009

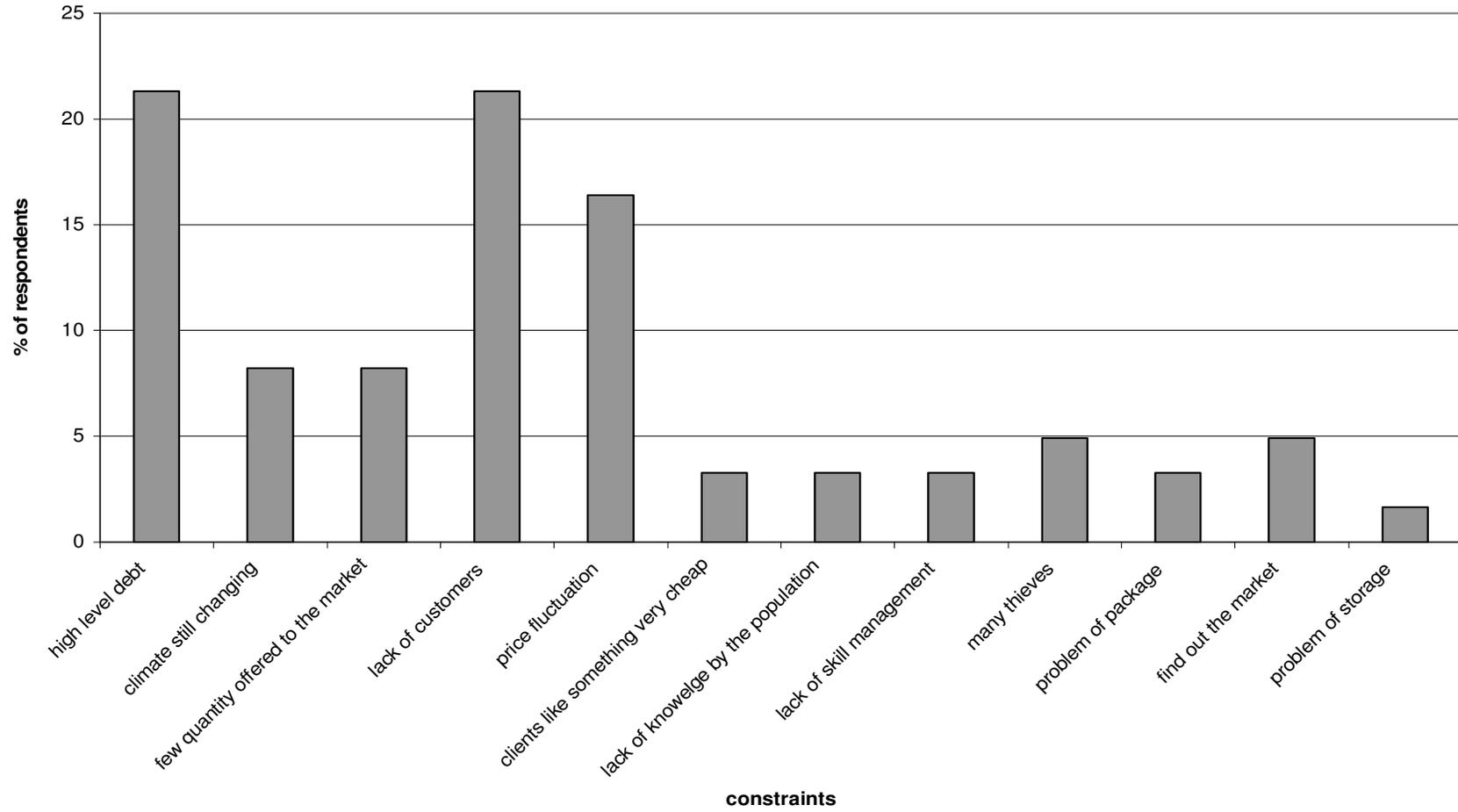
Table 5 shows that the major constraints faced by the agro-input traders are the high transportation costs, delayed deliverance, price fluctuations, high taxation, and packaging materials.

Government or NGOs provide farm inputs through the DPAEs but they lack access to inputs regularly. They also have inadequate transportation facilities and credit facilities to small holder farmers. They also lack enough capital bases to buy farm equipments to give the latter.

From the table, it can also be realized that there is lack of drugs to be supplied to the small farm holders. This is largely due to resource availability by the government and NGOs sources.

Figure1 presents the constraints to sell as mentioned in RQ4.

Figure 7: Sale Constraints



The graph presents the major constraints by the agro input traders. The major constraints are inadequate customers, high levels of debts and price fluctuations. The other problems include inadequate storage facilities, insecurity, inadequate knowledge of the target customers, and lack of management skills in the trade. Most traders lack the working capital for business continuity. This is due to inaccess to loaning facilities. It can be deduced that all the costs that traders incur are transferred to the farmers. This reduces the levels to which farmers can access farm inputs for improved agricultural development in Burundi. The study hence found out that there is inadequate policy support for improved agro input sourcing. Some agro input dealers have the problem of market inaccess. From the study, the problems are associated with insecurity, and lack of marketing skills. They need capacity building support policies for them to escalate the marketing capabilities. The study also found out that there is need for adequate infrastructural development as a strategy for improving markets access.

Table 6 and 7 presents the result of product differentiation in areas study

Table 17: Farm Inputs Differentiation in Terms of Branding

Type of farm input	Brand name	Sale unit	Average per unit	S.D	N
Inorganic fertilizers	DAP Chapameli 18:46.0	Kg	1800	-	1
Inorganic fertilizers	DAP Chapameli 18:46.0	Kg	1550	129.1	4
Inorganic fertilizers	DAP Meya	Kg	1666.7	152.7	3
Inorganic fertilizers	DAP Chapameli 18:40.0	Kg	1525	50	4
Inorganic fertilizers	DAP Chapameli 18:40.0	Tone	1500000	-	1
Inorganic fertilizers	DAP Meya	Kg	1650	288.7	4
Inorganic fertilizers	Small UREA	Kg	900	-	1
Inorganic fertilizers	Big UREA	Kg	1000	-	1
Seeds	Yellow beans	Tone	1950000	-	1
Seeds	Yellow beans	Kg	833.3	152.8	3
Seeds	Local beans	Kg	551.9	88.5	11
Seeds	Small beans	Kg	666.7	28.9	3
Seeds	Local beans	Kg	575	64.6	4
Seeds	Red beans	Kg	600	-	1
Seeds	Yellow beans	Kg	801.9	96.106	11
Seeds	Big peanut	Kg	1000	-	1
Seeds	Small peanut	Kg	1200	-	1
Seeds	Red Onion-Kenya	250g	12000	-	1
Seeds	Red Onion-Uganda	250g	10000	-	1
Seeds	Red Onion-Holland	250g	15000	-	1

Source: Survey results, 2009

The above table reveals the importance of the brand name of farm input type and price differentiation associated with farm input types. The findings show that there are two brand names for DAP; DAP Chapameli 18:46.0 and DAP Meya. Chapameli DAP has more customers than DAP Meya due to its lower price. Most farmers are also more familiar with the latter's quality. The former are not accustomed to the new quality brand of DAP.

They do not have enough information about the new quality. But the farmers recognized that to purchase Chapameli DAP per ton is cheaper than buying the other brand of DAP. There are two brand types of Urea. This is based on packaging. It is packaged in small and large quantities. The price of the large bags per unit kilogram is higher than the small bags.

The findings revealed that most small holder farmers prefer to buy local seed of beans because of familiarity as opposed to the hybrid seeds which are expensive. The findings show two varieties for peanut both big and small. But there is a differentiation about prices for both big and small peanut. The big peanut is expensive than the smallest due to the quality acquired by the smallholder farmers. The table 6 shows different varieties of red onion from different countries. The average price is different due to the distance covered by both agro-input dealers and smallholder farmers.

Table 18: Farm Input Differentiation in Terms of Packaging Sizes

Input types	Package Size 1/4kg		Package Size 1/2kg		Package Size 1kg		Package Size 5kg		Package Size 50kg		Package Size 100kg	
	Mean price	S.D.	Mean price	S.D.	Mean price	S.D.	Mean price	S.D.	Mean price	S.D.	Mean price	S.D.
Beans			324	107	553	115	2750		11625	3668	46500	2121.3
Chapameli DAP 18:46.0			771	27	1542	54						
DAP Meya					1650	-			85000	-		
Detane	2190	85	4375	177	9000	-	45000	-				
Lava	4000	-			16000	-						
Mancozeb	4000	-			16000	-						
NPK					1325	71	6500	-	65000	-		
Onion					9000	-						
Petit poids			450	-	900	-						
Peanut					1200	-	5000	-				
Sorghum									20000	-	40000	-
Tafgor			7000	-	14000	-						
Urea			700	87	1167	208	4500	-	45000	-		
Yellow beans					700	-	3000	-				

Source: Survey results, 2009

The above table7 revealed different sizes of package and the appropriate prices. The findings show that beans packaged in large sizes is cheaper than the small size packaging. This is probably due to the economics of scale but yellow beans is expensive than other varieties of beans due to the quality.

Ease of Entry into Agro-input Trade

Barriers to entry were determined by establishing the threshold capital required for starting business. At the same time, sources of funds and the current operational costs were analyzed to determine both the diversity and ease of access to credit to facilitate entry.

Minimum Capital

Table 8 presents the result of minimum capital required for starting the agro input business.

Table 19: Type of Input Trader and Minimum Capital

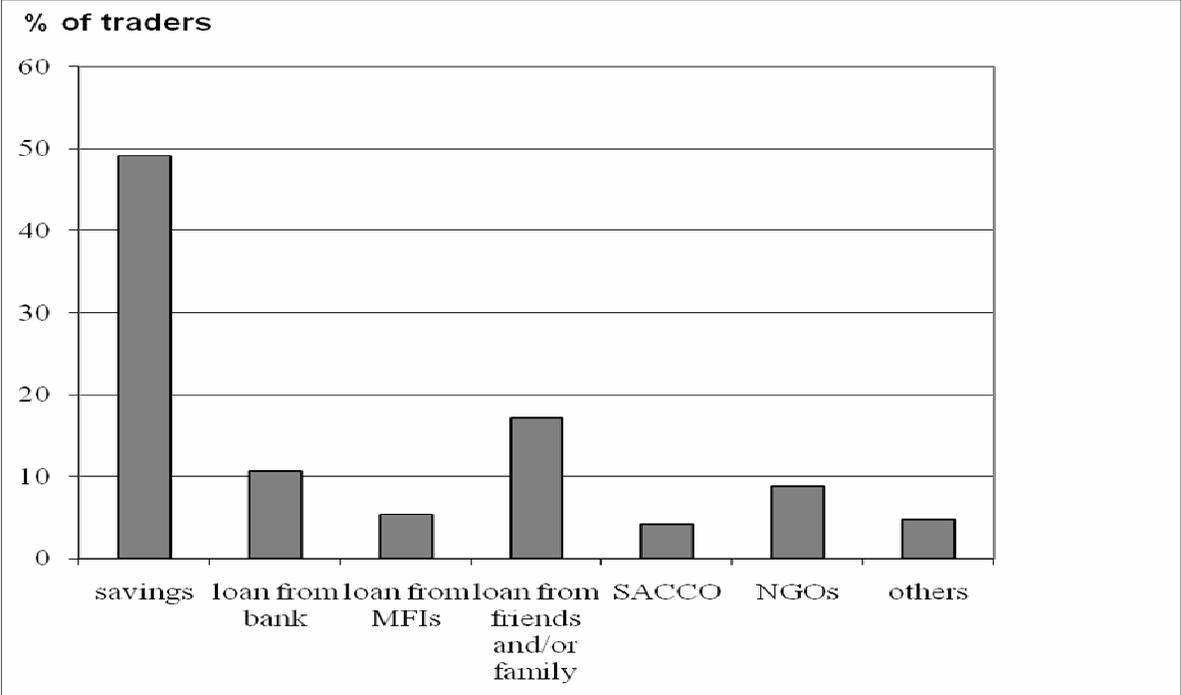
Type of input trader	Average minimum capital (BIF)	S.D.	N
Wholesaler	5114286	6809902	7
Retailer	866508.2	1153543	61
Wholesaler cum retailer	6967355	1.3400000	13
Government	8.3700000	9.5800000	6
NGOs	1.37000000	1.89000000	9
Private firm	1.00000000	1.41000000	2
Manure trader	2687031	6362224	32

Source: Survey results, 2009

The above table 8 presents the types of input traders and their minimum capital. The findings show that the institutions such as NGOs and the government require high minimum

capital. This is possible because NGOs have problems of sourcing for support funds for traders while the government has little resources to facilitate them. Individual traders also require large capital inputs for them to establish agro input trading. The findings show that it is not easy to enter into agro input trade as a wholesaler because it is expensive due to the factors previously discussed

Figure 8: Funding Sources for Initial Capital



The findings show that more than 40% of traders relied on savings only for their initial capital. 17.16% obtained loans from friends and/or family; 11% obtained loans from banks. The under 10% of traders found their initial capital in the following funding sources; loan from MFIs (5.33%), SACCOs (4.14%), NGOs (8.88%) and others (4.73%).

Table 20: Proportion of Type of Input Trader and their Funding Sources

Funding sources	Wholesaler	Retailer	Wholesaler-retailer	Govt	NGO	Private firm	Manure trader
Savings	42.9	58.4	47.6			50	51.3
Bank loan	35.7	2.6	19.0		12.5	50	10.3
MFIs loan	14.3	5.2	9.5				2.6
Loan- friends /family	7.1	22.1	9.5				23.1
SACCO		3.9	4.8				7.7
NGOs		2.6	4.8	50	87.5		5.1
Others		5.2	4.8	50			

Source: Survey results, 2009

The table 9 reveals the funding sources by type of input trader. The findings show that the individual traders relied on savings for their initial capital. The institutions such as NGOs and Government have their proper capital elaborate before starting the trade. Government mainly gets money from UNFAO to buy fertilizers and give to the associations through DPAEs. Wholesalers and wholesalers cum retailers obtained loans from banks because they are sure to pay back but retailers relied on savings only because they can access to ask a loan from bank or MFIs. The objective of MFIs is to facilitate micro-credit services to small traders. This shows that MFIs are not well developed in this country because they do not support the individual trade.

Costs Associated with Trade

Figure 3 shows the most requirements from the government to start the input trading.

Figure 3: Restrictions from Government



Source: Survey results, 2009

The above figure 3 shows the restrictions from the government for allowing the traders of inputs to start their activities. The majority of the respondents indicate that 45% pay taxes. 32% registered with commerce department, under 10% registered with traders.

Table 10 represents several costs of licence and taxes in business input.

Table 21: Licensing and Taxes per year, by Different Trader Types

Type of cost	Wholesaler		Retailer		Wholesaler-retailer		Private firm	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Register commerce	2000	-	11388.9	1301.7	20000	-	56000	-
Taxes commune	174000	81163.2	106444.4	259295.2	12666.7	4041.4		
Customers tax	660000	763675.2	-	-	-	-	-	-
Transport taxes	-	-	379600	319886	-	-	-	-
Impot	-	-	28500	2121.3	-	-	-	-
Tax market	-	-	946200	3503808	49914.5	11522.1	-	-

Source: Survey results, 2009

The above table 10 revealed that the private firms pay more than others for register commerce due to the import and export taxes they must pay to the foreign ministry. The institutions such as government and NGOs do not pay taxes and register commerce because they are exonerated. For the commune tax, retailers pay more due to the observations which are high in commune than other trader.

Table 22: Other Operational Costs per Year

Other costs	Wholesaler		Retailer		Wholesaler-retailer		Govt		NGO		Private firm		Manure trader	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Storage			9000	8485			1200	-						
Packaging	660000		204646	1400			276030	84811	10000	-				
Hired Labor	1380474	1374138	306169	686922	2170002	305150	181202	84852	3600000	-	9600000	-	106000	136800
Electricity	1200	-	27000	4242	180000	84853	320199	366344	240000	-	16800000	-	120000	-
Others	700000	551543	221071	301248	1030285	1272612	240	-	3600000	-	14400000	-		

Source: Survey results, 2009

The above table 11 revealed other operational costs incurred in the input business trade.

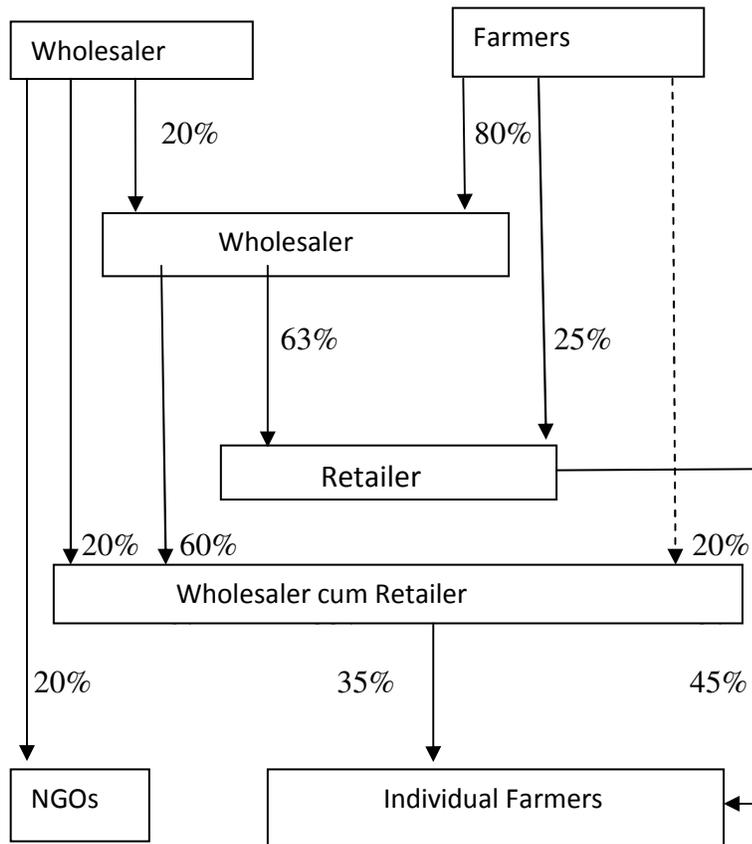
Retailers pay a lot of money for storage facilities. Wholesalers pay more for packaging.

Government needs to package the inputs for guaranteeing the quality of inputs when sending the inputs to the DPAEs. The private firms pay more for electricity than others.

Structure of Agro-input Systems

In the agro-input systems, there is no perfect competition. Marketing channel is a set of practices or activities necessary to transfer the ownership of goods, and to move goods from the point of production to the point of consumption and as such, which consists of all the institutions and all the marketing process. Figure 4 presents the marketing channel for seeds.

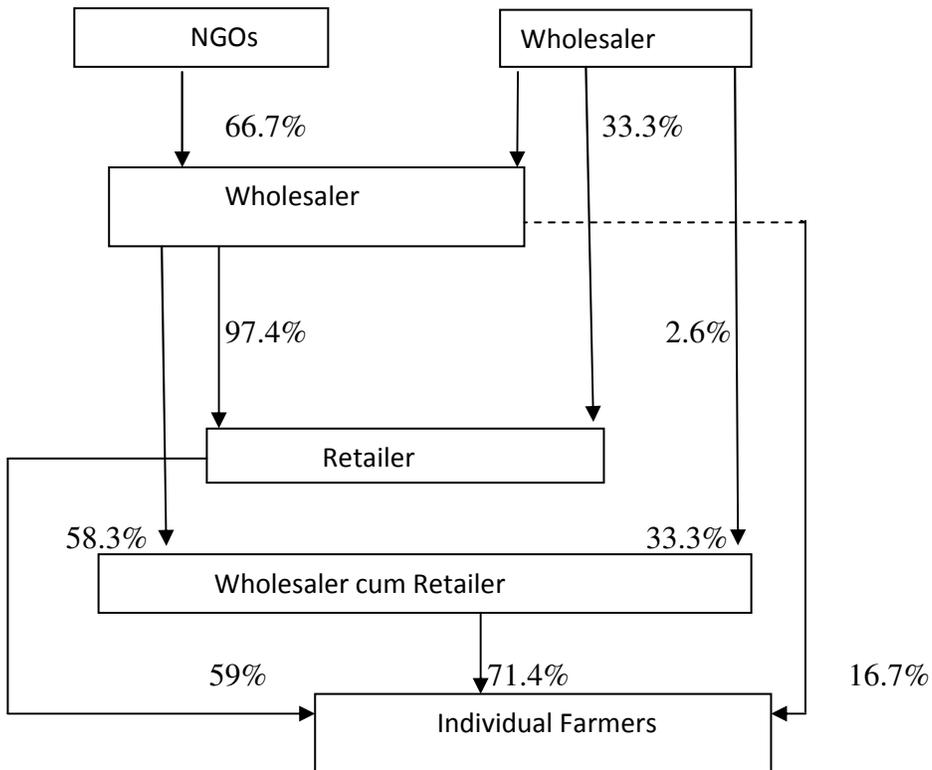
Figure 4: Marketing Channel for Seeds



The above figure 4 shows the chain involved in the delivery system of seeds. Wholesalers purchase the seeds from large wholesalers. Farmers purchase from the retailers and wholesalers cum retailers. The sources for retailers are the wholesalers. 45% of the respondents indicated that individual farmers have access to the seeds through retailers and wholesalers cum retailers. They do not have enough capital to purchase the seeds from large traders.

Figure 5 represents the marketing channel for fertilisers.

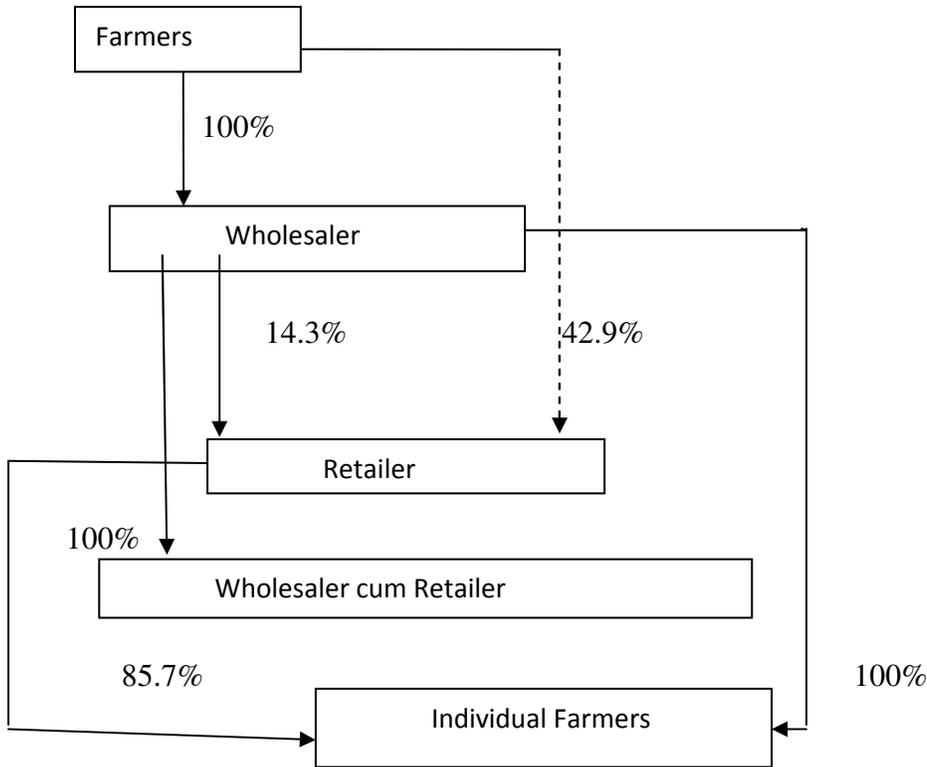
Figure 5: Marketing Channel for Fertilizer



Sixty seven percent of the traders indicated that wholesalers purchase the fertilizers to the private business and NGOs such as FAO, CRS, ODAG, and GTZ. Retailers get their sources from the wholesalers and the wholesalers cum retailers. The individual farmers get fertilizers from the wholesalers cum retailers due to the accessibility of financial means than to go to purchase from the wholesalers.

Figure 6 shows the marketing channel for manure.

Figure 6: Marketing Channel for Manure



One hundred percent of the respondents indicated that wholesalers get the manure from farmers due to the accessibility. Retailers have their source from both farmers and wholesaler and sell to the individual farmers. Conclusively, the author found that there is need to enhance the growth of agro input dealing in Burundi. This will reduce the major setbacks enshrined in the trade.

Summary of the Findings

The analysis and interpretation of data was done in order to reveal the strengths of existing input delivery systems for banana and legumes based systems. The results obtained were answering the research questions of this study. Results indicate that the most commonly inputs stocked include seeds with mean of 77387.5kg, followed by the inorganic fertilizers include DAP(4178kg), Urea(49124.4kg), NPK(64285.7) and KCL(48864.3kg). Banana vitroplants(203610) and banana suckers(48000) were commonly stocked by private firms and NGOs. Other services provided by agro-dealers are appropriate application rates(61.5%), protective clothing during application(24.6%), appropriate storage(34.6%), and product content(27.7%). These services are provided by retailers(100%) because they are in direct contact with smallholder farmers.

High transport cost(70%), low demand(26.5%), lack of market information(5%), lack of storage facilities(12.6%), limited business knowledge(13.9%), less quantity(8%), and lack of security(6%) were the most important constraints faced by agro-dealers. According to the survey, farm inputs are differentiated in terms of branding and packaging sizes with their associated prices. The traders frequently mentioned two barriers to entry into agro-input trade: institutional restrictions and initial capital requirements. The traders interviewed said that it was difficult to obtain the initial capital. Only 17.1% obtained a loan from friends, 11% obtained a loan from bank these are wholesaler and private firm who are able to pay debt. 5.3% received funding from MFIs. So 40% of the traders relied on savings for their initial capital. Due to the fairly high initial capital requirement, entry for inputs is difficult provides protection to those already established. Finally the government requires to the traders to pay taxes, register commerce, and to have a place where to sell.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of the research study, conclusions, and recommendations for further research.

Conclusion

This study sought to evaluate the existing input delivery systems for banana and legumes based systems in Burundi. The study was carried out in the four provinces namely Kirundo, Gitega, Bujumbura Urban and Cibitoke. Eight areas of related literature were reviewed. The review involved general information on agricultural activities, linkages between smallholder farmers and service providers, impacts of the processes linking farmers and service providers, input delivery system, purchasing power of the farmers, effects of household income on market participation, and different approaches in agro based development.

The study was guided by four research questions. The first research question was meant to show the structure of the agro-input systems in terms of the key players and marketing channels.

The second research question dealt with the types of input stocked and informational services offered by the agro-input dealers to their customers.

The third research question was used to examine the existence of product differentiation, the associated prices and ease of entry into agro-input trade.

The fourth research question was used to show the constraints faced by the key players in the input delivery systems.

The research questions were answered by using three research instruments namely interview, observation and questionnaires.

After collecting, analyzing and interpreting data, the findings revealed some gaps related to the hypothesis of the subject under study. The study revealed that inasmuch as the number of agro- input dealers in Burundi has been growing, the growth is still far from achieving what is targeted. Apart from limited business incentives, most of the agro-input dealers in the study areas face numerous problems like poor infrastructural facilities and low demand. Most of the agro- input dealers travel long distances to source different agro- inputs, a situation which has resulted into high farm-level prices for farm inputs. The problem of high unit price of agro-inputs is compounded by the fact that credit services are rarely accessed by the smallholder farmers. The agro-input dealers also lack adequate working capital for increased stocking of agro inputs. Few agro-input dealers are able to provide small scale farmers with many services.

An important element of the study was to assess the main farm services provided by agro- input dealers, constraints, challenges faced and the policy and institutional frameworks. They would prefer a situation where there is improvement of their services with support from the stakeholders. This would enhance the sustaining of service deliveries to farmers.

Recommendations

The findings of the study are useful to the dealers of agro-input trading in Burundi, future researchers and investors. Recommendations are as follows:

Government should facilitate access to credit so that many traders can enter into the business;

To encourage micro-finance institutions to offer credit facilities to traders so that they can expand their businesses;

Government should improve inspection of quality farm inputs and increased competition.

Barriers to entry for importers should be relaxed;

Finally, the government should consider lowering taxes on farm input, to make agricultural inputs cheaper for farmers.

Suggestions for Further Research

The researcher did not exhaust the whole research as expected. Further research should be carried out in the other provinces of Burundi to find out the opportunities and challenges in input delivery systems

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APPENDIX A

LETTER OF INTRODUCTION

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January,2009
Subject:Request for research permissoin
And assistance
To:CIALCA-IITA project

Dear Sir,

I am chrystal kimana,a student of Hope Africa University pursuing a bachelors of Arts Degree in Business Administration and Economics,concentration of Management Information Systems.I am doing my research of Evaluation of Existing Input Delivery Systems for Banana and Legumes based Systems in Burundi as requirement to the graduation.

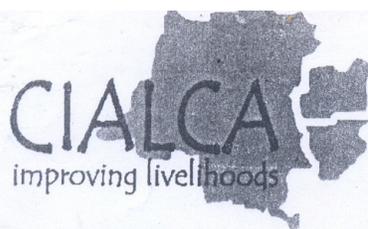
I intend to fully carry out my research work in your office,a process that will require the company management and staff by helping in regards to types of input trader.

Therefore your approval shall be of great importance, and thereby promise that the obtained responses shall be a dealt absolutely with high confindentiality.

Your support and cooperation will be highly appreciated

Yours sincerely,
Chrystal KIMANA

Appendix B



Consortium for improving agriculture-based livelihoods in Central Africa

Réf: 007/BCC-KJP/09

Bujumbura, 27/03/2009

A Monsieur le Directeur de la Direction
Provinciale de l'Agriculture et de
l'Elevage en Province de Kirundo
à
Kirundo.

Objet: Enquête socioéconomique.

Monsieur le Directeur,

Nous avons l'honneur de porter à votre connaissance que, dans le cadre de compléter l'enquête de base que le CIALCA a réalisée en 2006 auprès des ménages des Collines **Yaranda** en Commune Kirundo et **Murore** en Commune Busoni, nous organisons un complément d'enquête sur quelques uns des anciens ménages visités (à Gitega, Kirundo et Cibitoke) par une équipe de 2 étudiants de l'Université Espoir d'Afrique de Bujumbura du 8 Avril au 8 Mai 2009.

Ces étudiants sont **Chrystal KIMANA** et **Richard NSHIMIRIMANA** et pourraient avoir besoin dans un premier temps de l'appui des agronomes communaux de Kirundo et Busoni avec la logistique CIALCA. Vous pourrez également faciliter leur contact avec les administratifs de ces localités et les groupes d'agriculteurs de ces zones mandataires de CIALCA.

Pour plus de détails nous enjoignons à la présente les originaux des questionnaires renseignant sur les données recherchées.

Comptant sur votre habituelle franche collaboration, nous vous prions d'agréer, Monsieur le Directeur l'assurance de notre considération la plus distinguée.

Ir. Jean Prosper KANYARUGURU
Coordinateur National.

TCPI à:

- ✓ - M. Le Gouverneur de Province de Kirundo
à Kirundo
- Mgr.Dr.Elle BUCONYORI, Récuteur HAU
- Dr.NIKOBARI Siméon, Vice-Récuteur HAU
à Bujumbura



IITA



The Consortium for Improving Agriculture-based Livelihoods in Central Africa (CIALCA) is a Consortium of the International Institute of Tropical Agriculture (IITA), Bioversity International, and the International Centre for Tropical Agriculture (CIAT) and their national research and development partners, supported by the Belgian Directorate General for Development Cooperation (DGDC), and aiming at improving livelihoods through enhancing income, health, and the natural resource base of smallholder farmers in Central Africa. Contacts in the region are:

Burundi: Jean Prosper Kanyaruguru, c/o ISABU, Avenue de la Cathédrale, B.P. 795, Bujumbura, Burundi; Email: kanyarugurujp@yahoo.fr; **DR Congo - Sud-Kivu:** Dieudonné Katunga, 6 Av. Kasongo, Bukavu, D.R.Congo; Email: katungamusale@yahoo.fr; **DR Congo - Bas-Congo:** Jean-Paul Lodi Lama, INERA, 13 Avenue des Cliniques, B.P.2037, Kinshasa, D.R.Congo; Email: lodilama_jeanpaul@yahoo.fr; **Rwanda:** Solange Zawadi, CIAT Rwanda, Boulevard the l'Umuganda, Kigali, Rwanda; Email: solange.zawadi@gmail.com

APPENDEIX C

FIELD QUESTIONNAIRE

*Consortium for the Improvement of Agriculture-based Livelihoods in Central Africa
(CIALCA) in Collaboration with Université Espoir d’Afrique au Burundi*

**QUESTIONNAIRE ON EVALUATION OF EXISTING INPUT DELIVERY SYSTEMS
FOR BANANA AND LEGUME-BASED SYSTEMS IN CENTRAL AFRICA**

Part A: GENERAL

Date of Interview: [__ / __ / __] Questionnaire number [_____]

Time started [_____] Time ended [_____]

Country Province/Territoire.....

Commune/District/Chefferie Zone/Secteur/Groupement.....

Colline/Cellule/Localité..... Village.....

Name of interviewer

Part B: GENERAL INFORMATION

B/1. Respondent’s name

B/2. Name of the input trader (owner of the business).....

B/3. Gender of the input trader (owner of the business) [____]

1 = Male

2 = Female

B/4. Highest education level attained by the input trader (owner of the business) [____]

(please use codes below)

B/4. Education level

- 1 = none
 2 = adult literacy
 3 = primary school
 4 = secondary short cycle – 4 years
- 5 = secondary long cycle – 7 years
 6 = undergraduate (university)
 7 = postgraduate
 8 = other(s) specify _____

B/5. Age of the input trader (owner of the business) *please use codes below* [____]

B/5. Age category

- 1 = 18 – 25 years
 2 = 26 – 30 years
- 3 = 31 – 40 years
 4 = 41 – 50 years
- 5 = > 50 years

B/6. Type of input trader [____] (*please use codes below*)

B/6. Type of input trader

- 1 = wholesaler
 2 = retailer
 3 = distributor
- 4 = wholesaler cum retailer (both)
 5 = Government (e.g. MINAGRI, IRAZ)
 6 = NGO
- 7 = private firm
 8 = Other (specify) _____

Part C: INPUT STOCK AND SOURCING INFORMATION

C/1. What are the different types of farm inputs stocked by the trader?

[____] [____] [____] [____]

C/1. of inputs traded in

- 1 = inorganic fertilizers
 2 = germplasm/seeds
 3 = fungicides
 4 = pesticides
- 5 = manure (organic fertilizer)
 6 = equipments
 7 = other (specify) _____

C/2. Quantities of farm inputs stocked for legume and banana enterprises (*indicate for an average production year*)

Type of farm input	Average quantity stocked in a year	Unit (please use codes below)
1. _____	[_____]	[____]
2. _____	[_____]	[____]
3. _____	[_____]	[____]
4. _____	[_____]	[____]
5. _____	[_____]	[____]

C/2. Stocking units

- | | |
|----------------|----------------|
| 1. Kg | 4. 50 Kg bags |
| 2. Tonnes | 5. Lorryload |
| 3. 100 Kg bags | 6. Others_____ |

C/3. What are the different sources and pricing of farm inputs that you stock for **an average production year**? (*Please fill the table below*)

Farm input	Source point (<i>codes</i>)	Distance to source point (Km)	Amount sourced and pricing			Transport mode and cost from source	
			Amount	Purchase unit (<i>codes</i>)	Purchase price per unit	Mode (<i>codes</i>)	Cost per unit
1. _____	[____]	[____]	[____]	[____]	[____]	[____]	[____]
2. _____	[____]	[____]	[____]	[____]	[____]	[____]	[____]
3. _____	[____]	[____]	[____]	[____]	[____]	[____]	[____]
4. _____	[____]	[____]	[____]	[____]	[____]	[____]	[____]

C/3. Source point

- 1 = Government
- 2 = wholesaler
- 3 = NGOs
- 4 = retailers
- 5 = private business
- 6 = farmers
- 7 = others_____

C/3. Purchase unit

- 1. Kg
- 2. Tonnes
- 3. 100 Kg bags
- 4 = 50 Kg bags
- 5 = Lorryload
- 6 = others

C/3. Mode

- 1 = foot
- 2 = bicycle
- 3=private vehicle
- 4=public vehicle
- 5 = others

C/4. What are the **constraints** you experience as regards **sourcing of the farm inputs**?

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____

C/5. Do you have any quality issue constraints from your farm input source points?

[_____] 1 = Yes 2 = No

C/6. If yes in C/5, what are the quality constraints?

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____

APPENDIX D

FARM INPUTS SALES AND MARKETING

D/1. What are the **marketing outlets** for your farm inputs stocked? *(Please fill the table below and indicate for an average sales year)*

Farm input	Sale point	Area of sales (put names)	Amount of sales and pricing		
			Amount of sales	Sale unit <i>(use codes)</i>	Sale price per unit
1. _____	[__] [__]	_____	[_____]	[__]	[_____]
2. _____	[__] [__]	_____	[_____]	[__]	[_____]
3. _____	[__] [__]	_____	[_____]	[__]	[_____]
4. _____	[__] [__]	_____	[_____]	[__]	[_____]
5. _____	[__] [__]	_____	[_____]	[__]	[_____]
6. _____	[__] [__]	_____	[_____]	[__]	[_____]
7. _____	[__] [__]	_____	[_____]	[__]	[_____]

D/1. Sales point

1 = wholesalers

2 = retailers

3 = farmers

4 = organizations

5 = NGOs

6 = others

D/1. Sales unit

1. Kg

2. Tonnes

3. 100 Kg bags

4 = 50 Kg bags

5 = Lorry load

6 = Others _____

D/2. Do you control the price setting of the farm inputs that you sell? [_____]

1 = Yes

2 = No

D/3. Do you set the farm input prices according to the input brands? [_____]

1 = Yes

2 = No

D/4. If **yes**, in **D/3** please fill the table below for the differential prices according to input brands.

Farm input type	Brand name	Sale unit (<i>use codes</i>)	Sale price per unit
1. _____	_____	[____]	_____
2. _____	_____	[____]	_____
3. _____	_____	[____]	_____
4. _____	_____	[____]	_____
5. _____	_____	[____]	_____
6. _____	_____	[____]	_____
7. _____	_____	[____]	_____

D/4. Sales unit

- 1. Kg 4 = 50 Kg bags
- 2. Tonnes 5 = Lorry load
- 3. 100 Kg bags 6 = Others _____

D/5. Are your inputs differentiated into different package sizes offered for sale? [____]

1 = Yes 2 = No

D/6. If **yes** in **D/5**, what is the different product package sizes offered for sale?

Farm input type	Package sizes	Corresponding sales price per package size	Packaging material
1. _____	[____] [____] [____]	[____] [____] [____]	_____
2. _____	[____] [____] [____]	[____] [____] [____]	_____
3. _____	[____] [____] [____]	[____] [____] [____]	_____
4. _____	[____] [____] [____]	[____] [____] [____]	_____

D/7. Do you provide the following information services to your customers?

- a) appropriate application rates [____] 1 = Yes 2 = No
- b) protective clothing during application [____] 1 = Yes 2 = No
- c) appropriate storage [____] 1 = Yes 2 = No
- d) product content [____] 1 = Yes 2 = No
- e) Other services (specify)_____ [____] 1 = Yes 2 = No

D/8. What are the **licence and tax** costs associated with your trade?

Type of cost (licenses and taxes)	Payment amount		Payment unit (<i>use codes</i>) 1 = daily 2 = monthly 3 = annual 4 = volume based, specify rate _____ 5 = others
	Amount	Currency 1 = BIF 2 = RWF 3 = FC 4 = US\$	
1. _____	_____	[____]	[____]
2. _____	_____	[____]	[____]
3. _____	_____	[____]	[____]
4. _____	_____	[____]	[____]
5. _____	_____	[____]	[____]
6. _____	_____	[____]	[____]

D/9. Besides transport and licensing, what are the **other operational costs** that you incur in the input business trade?

Type of cost	Payment amount		Payment unit (<i>use codes</i>)
	Amount	Currency	1 = daily 2 = monthly 3 = annual 4 = volume based, specify rate _____ 5 = others
		1 = BIF 2 = RWF 3 = FC 4 = US\$	
1. Storage	_____	[_____]	[_____]
2. Packaging	_____	[_____]	[_____]
3. Hired labor	_____	[_____]	[_____]
4. Electricity	_____	[_____]	[_____]
5. Others(specify) _____	_____	[_____]	[_____]
6. Others(specify) _____	_____	[_____]	[_____]
7. Others(specify) _____	_____	[_____]	[_____]

D/10. Do you face any **constraints associated with farm inputs sales and marketing?** [___]
1 = Yes 2 = No

D/11. If yes, in **D/10**. What are the constraints?

1. _____
2. _____
3. _____
4. _____

APPENDIX E

CONDITIONS OF ENTRY INTO FARM INPUT TRADING

E/1. According to you, what is the minimum capital required for starting the input business you are dealing in? Amount [_____] Currency [____]

E/1. Currency

1 = Burundi Francs (BIF) 3 = Congolese Francs (FC)

2 = Rwandese Francs (RWF) 4 = US Dollars

E/2. What was the funding source (s) for your initial capital? [____] [____] [____]

E/2. Funding sources

1 = savings 3 = loan from MFIs 5 = SACCO

2 = loan from Bank 4 = loan from friends and/or family 6 = Others (specify) ____

E/3. Are there any requirements/restrictions from the government in order to start the input trading business? [____] 1 = Yes 2 = No

E/4. If yes, what are the requirements/restrictions?

E/5. Does the government play a role in:

a) Licensing? [____] 1 = Yes 2 = No

b) Checking input quality standards? [____] 1 = Yes 2 = No.

If yes, please indicate the number of times in a year a government inspector has visited your business for quality inspections? [____]

The end, Thank you for your time and contribution

APPENDIX F

RESEARCHERS IN THE FIELD

