

Assessment of marketing channels for crops, livestock and their products and inputs for agricultural production in south eastern Uganda

Laker, C. D; Mugasi, S; Sabiiti, R; Nsubuga, D.K and Akena, F



November 2003

Table of contents

List of Acronyms	4
List of tables	5
Executive Summary	6
Introduction	10
Terms of reference	11
Methodology.....	12
Survey Area.....	12
Data Collection	12
Justification of data collection of the methodology.....	12
The Interviews	13
Secondary data.....	13
Analytical framework	14
 SECTION ONE	 15
1.0 Assessment of the availability and quality of markets	15
1.1 Introduction.....	15
1.2 The structure, conduct and performance of agricultural markets	15
1.2.1 Structure of agricultural markets.....	15
1.2.2 Conduct of Agricultural Markets	16
1.2.3 Performance of Agricultural Markets.....	17
1.3 The Main Agricultural Products by Area	19
1.3.1 Crops produced	19
1.3.2 Livestock Production.....	21
1.3.2.1 Livestock Products	21
1.3.2.2 Livestock Markets	22
1.3.3 Fish Production	22
1.4 Characteristics of Consumers and their preferences.	23
1.5 Seasonality Patterns of Agricultural Production.....	24
1.6 Marketing constraints	25
1.6.1 Primary and secondary level	25
1.6.2 Tertiary level.....	26
1.6 Conclusion	26
1.7 Recommendations	27
 SECTION TWO	 29
2.0 Demand and supply of agricultural inputs in South Eastern Uganda.	29
2.1 Introduction.....	29
2.2 Procurement Pathways for Agricultural Inputs.....	29
2.3 Supply of Agricultural Inputs	32
2.3.1 Crop inputs.....	32
2.3.2 Livestock inputs	35
2.4 Demand for Agricultural Inputs.....	38
2.4.1 Demand for Crop Inputs	38
2.4.2 Demand for Livestock Inputs.....	42
2.5 Constraints faced in procurement and supply of agricultural inputs.....	45
2.5.1 Farmer constraints	45
2.5.2 Stockists' constraints.....	46

SECTION THREE.....	50
3.0 Storage and Processing of Agricultural Products in South Eastern Uganda	50
3.1 Introduction.....	50
3.2 Storage and Processing Practices	50
3.2.1 Storage Practices	50
3.2.2 Processing Practices	51
3.3 Storage and Processing Infrastructure.....	54
3.3.1 Storage Infrastructure	54
3.3.2 Processing Infrastructure	56
3.4 Constraints in storage and processing of agricultural products	56
3.4.1 Storage constraints.....	56
3.4.2 Processing constraints.....	57
3.4.3 Constraints associated with fish storage and processing.....	58
3.5 Conclusion and Recommendations	58
3.5.1 Conclusion	58
3.5.2 Recommendations on storage and processing	59
SECTION 4	63
4.0 Institutional Framework for Marketing of Agricultural Produce/Products	63
4.1 Introduction.....	63
4.2 Institutional Involvement in Marketing of Agricultural Produce	63
4.2.1.1 Local Government Institutions.....	64
4.2.1.2 Central Government Institutions	67
4.3 Constraints in the formulation and implementation of strategies for improved agricultural marketing	75
4.3.1 Constraints facing the Districts	75
4.3.2 Constraints facing farmers associations and co-operative societies.....	76
4.3.3 Constraints facing the private sector	77
4.5 Conclusion	77
4.6 Recommendations.	78
General Concluding Remarks.....	79
References.	82
Annex 1 - Data Collection Instruments.....	83
Annex II. Annual national production figures.....	92
Annex III. Production Data disaggregated by District, Region and Year.....	97
Annex IV – Livestock numbers by type and district	110

List of Acronyms

AGOA	African Growth Opportunity Act
BMU	Beach Management Units
CDO	Cotton Development Organization
COMESA	Common Market for East and Southern Africa
DFID	Department for International Development
EAC	East African Community
FDG	Focus Group Discussion
FITCA	Farming In Tsetse Controlled Areas
IDEA	Investment in Developing Export Agriculture
IFAD	International Fund for Agricultural Development
IITA	International Institute of Tropical Agriculture
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
MT	Metric tons
NAADS	National Agricultural Advisory Services
NARO	National Agricultural Research Organisation
NGO	Non Governmental Organisation
NRI	Natural Resource Institute
PMA	Plan for Modernization of Agriculture
PRIDE	Promotion of Rural Initiatives and Development Enterprises
RA	Rapid Appraisal
SAPS	Structural Adjustment Programs
SODIFA	Soroti District Farmers Association
SCP	Structure Conduct and Performance
UCDA	Uganda Coffee Development Authority
UOSPA	Uganda Oil Seed Producers' Association
UBOS	Uganda Bureau of Statistics
UIA	Uganda Investment Authority
UNCCI	Uganda National Chamber of Commerce and Industry
UBOS	Uganda Bureau of Statistics
UEPB	Uganda Export Promotion Board
UMA	Uganda Manufacturers Association
USAID	United States Agency for International Development
WFP	World Food Programme

List of tables

Table 1.1	Main agricultural products/produce in southeastern Uganda, August, 2003.
Table 1.2.	Cassava Production
Table 1.3.	Maize Production
Table 1.4.	Sweet potato production
Table 1.5	Finger Millet Production
Table 1.6.	Sorghum Production
Table 1.7.	Ground Nut Production
Table 1.8	UBOS Crop Survey Module 1999/2000 Production of Cooking Banana by Region (MT)
Table 2.1	Availability of different crop production inputs in southeastern Uganda, August 2003.
Table 2.2	Availability of different livestock production inputs in six districts in southeastern Uganda, August 2003.
Table 2.3	The demand and supply situation of main agricultural inputs in selected districts in South Eastern Uganda. (2003)
Table 2.4	Level of inputs use as revealed during community focus group discussions (FGD) and meetings with district officials (DO)
Table 2.5.	Annual seed sales from 1997 – 2000 (metric tones)
Table 2.6	Crop input sales for SODIFA for May 2003, Soroti District.
Table 2.7	Crop input sales for Idha Tugye Farm Agency in Bugiri for July 2003.
Table 2.8	Crop Input sales for July 2003 for MK Farm Supply Shop in Mayuge District.
Table 2.9.	Crop input sales for July, 2003 for Kamuli Agriculture Shop, Kamuli District
Table 2.10	Fertilizer sales for July 2003, for Kamuli Farmers' Centre, Kamuli District.
Table 2.11	Crop inputs stocked by Kintu Agro, August 2003, Mukono District.
Table 2.12	Animal drug sales for July 2003 for SDB farm supplies, in Busia Town.
Table 2.13	Livestock input sales for the Idha Tugye Farm Agency in Bugiri for July 2003
Table 2.14	Livestock Input sales July 2003 for Bunya Modern Farmer in Mayuge District.
Table 2.15	Livestock Input sales for July 2003 for Kamuli Farmers Shop, Kamuli District.
Table 4.1	District Farmers' Association and their membership, August 2003.
Table 4.2	NGOs and CBOs operating in different districts, August 2003.

Executive Summary

This report is an output from a study conducted in August 2003. The FITCA Project is introducing a number of interventions, aimed at decreasing losses in productivity due to animal trypanosomosis, while at the same time increasing household incomes for the primary beneficiaries/stakeholders, the livestock keepers. It is therefore critical to assess the main constraints to marketing of agricultural produce in the region where the project is operational. This activity therefore assesses the demand and supply for agricultural inputs and produce (identifies the marketing and distribution channels for inputs (seeds, animal drugs, fertilizers etc), as well as the outlets for agricultural produce (live animals, milk, hides and skins, draft power, eggs etc) in the project area and, the institutional framework available at the district for promotion of agricultural marketing and the storage and agro-processing practices and infrastructure available at household and community levels.

The report provides an assessment of marketing channels for crops, livestock and their products, and inputs for agricultural production in six districts of south eastern Uganda. It gives an overview of the main crop and livestock enterprises in the six districts, production levels and the current market situation, with specific reference to structure of the markets, constraints and opportunities. It also assesses the demand and supply of agricultural inputs, with specific emphasis on the procurement pathways, utilization of inputs by farmers and constraints faced in delivering these inputs. Also documented in the report is an assessment of processing and storage of agricultural produce in the region. Lastly, the report examines the strategies for marketing of agricultural products with a closer look at the institutional framework available at district level for the promotion of agricultural marketing.

The study was largely qualitative, and the methodology used was based on rapid assessment techniques using both primary and secondary data. Primary data was collected through interviews with respondents at district and community level, while secondary data was obtained from literature review and analysis of available data. Data analysis is mainly descriptive with most of the data being presented in tables. Below is a summary of the findings.

Crop production is the main economic activity in all the six districts studied, Maize and cassava are the most important food crops while cotton and coffee are the main cash crops. The region was the largest producer of major grains for the year 2000 in Uganda. Livestock

production is mainly for subsistence consumption of milk and also provision of draft power, with limited trade outside the districts. Fish production is also an important economic activity in all districts except Soroti, with Lake Victoria being the main source. Fish farming is another economic activity but is severely constrained by high investment and maintenance costs.

The structure, conduct and performance (SCP) of agricultural markets in the region are such that farmers do not get their deserved share of the marketing proceeds. Due to poor information flow, poor road networks and poor storage facilities, farmers have very limited trading opportunities. They are mainly price takers with no bargaining powers over their produce. The main recommendations include improvement of the rural road network, improve farm prices through improvement in quality and reduction of post harvest losses, encourage and facilitate formation of farmer groups as a way of reducing marketing transactions costs, strengthen marketing information systems, and provision of rural finance.

The study also revealed that potential demand for agricultural inputs is high given the high number of households engaged in agriculture in the region. However, low household incomes coupled with limited farmers' awareness about the need to use inputs have constrained the use of agricultural inputs. This has meant that very few private businessmen are willing to invest in input supply business, especially in rural areas. Typical of third world economies, this situation of market failure only serves to compound the problem of low agricultural output, low incomes and unending poverty. The problem stems from the fact that the government policy of liberalizing agricultural and veterinary input supply was not followed by appropriate measures to handle the transition. Recommendations for improved input delivery include use of cost recovery approach, creation of community level revolving funds by government to enable farmers purchase inputs, formation of farmers groups, strengthen quality control measures and improve market information systems.

At both household and community levels, no elaborate storage infrastructure exists. As a consequence, farmers store their produce in their residential houses/huts pending disposal. The practice of storing in granaries has greatly reduced as thefts from the granaries increasingly became rampant. In addition, the traditional cribs for maize drying and storage have long been abandoned except for a few isolated areas. This has, as a result, limited the capacity of farmers to attain and maintain the desired quality of produce. In addition, the

farmers are forced to sell off their produce immediately at or after harvest when produce prices are very low. This poses a big policy challenge.

Some crops have emerged with high alternative economic potential and prospects. 'Epuripur' sorghum and vanilla are such two crops whose production should be encouraged and enhanced, as their marketing is both assured and lucrative. Some organisations and institutions have started initiatives to promote agricultural storage and agro-processing through training and demonstrations, whose efforts could be built on to further popularise the activity. At household level, crop processing is limited to primary processing such as drying, threshing and winnowing, with no value addition performed. This limits the price that can be fetched by the farmer. All the districts with no exception face a situation where farmers want to perform all their storage, processing and marketing operations individually. This not only limits their attainment of economies of scale, but also diminishes their chances to expand their performance levels.

For livestock and livestock products, limited storage and processing capacity is a major problem. This is exemplified by limited gazetted livestock markets, few milk collecting centres and milk coolers among other facilities. Recommendation for improving agricultural storage and marketing include strengthening the private sector by the government, sensitisation and training of farmers on storage and processing, encouraging the formation of farmers' groups.

The study also found that the institutional framework and the policy environment is fairly conducive for promoting agricultural marketing. The two policies of decentralization and trade liberalization have created an enabling environment for increased production and marketing. Previously, agricultural marketing was a monopoly of state funded parastatals like the Coffee Marketing Board, Produce Marketing Board and Lint Marketing Board. Under state controlled arrangements, prices were pre-determined and farmers had to wait for payment for long periods for produce already delivered.

At policy level, trade liberalization has enabled farmers to access international markets through private and more efficient marketing agencies. At institutional level, the decentralization framework has brought services closer to the people. For example, the implementation of the Plan for Modernisation of Agriculture (PMA)/National Agricultural

Advisory Services (NAADS) at the local level is a pro-farmer participatory approach as opposed to the previous top-down extension approaches. There is, therefore, an enabling institutional framework at the districts to promote agricultural marketing, in form of local government departments, farmers associations and the private sector. At district level, the main setbacks are mainly administrative inefficiencies and inadequate funding. Recommendations aimed at improving the institutional framework are two fold, namely, increasing government funding and ensuring that there is adequate staffing. District local governments should also establish linkages with the relevant private sector to promote agricultural marketing. There are a number of private sector agencies in all the districts but there seemed to be no clear linkages or complementary efforts geared promoting agricultural marketing.

Introduction

Agriculture continues to play a crucial role in the economy of Uganda. Over 90% of the population of Uganda live in rural areas, and the agricultural sector provides 80% of employment and contributed 43% of GDP (Foodnet/IITA, 2002). However, agricultural productivity is severely limited by a variety of constraints, notable of which is the burden of pests and disease, which remain the greatest obstacle to economic progress in developing countries (Kabayo, 2001).

Government has taken deliberate steps to modernize agriculture as a means of eradicating poverty. The Plan For Modernization of Agriculture (PMA) is a government framework for eradicating poverty through modernisation of the agriculture sector. One of the strategic interventions planned under PMA is promotion of agro-processing and marketing. The main actor in realizing this objective is the private sector while government's role is limited to providing support for road network, market infrastructure, market information, international market access, storage and agro-processing, agricultural inputs and legal and regulatory frameworks.

The objectives of FITCA are in line with the government's long-term strategic plan of eradication of poverty. The project aims to contribute to the improvement of the health of the rural population of south-eastern Uganda in order to improve household incomes through improved agricultural productivity. The main thrust of the project is to control tsetse transmitted animal trypanosomosis and sleeping sickness with particular emphasis on enhancing community participation. FITCA is therefore working in close collaboration with the districts to improve rural livelihoods through ensuring improved animal and human health. The project also has a Land Use (Agricultural) component that aims at sustainable crop and livestock production through appropriate land use measures.

This study was, therefore, timely as a way of assessing the availability of inputs and understanding whether the envisaged increased livestock and crop production will find market. It is hoped that the outcomes and recommendations of this study will help the different actors and stakeholders, namely, government, local government authorities, NGOs, the private sector and the communities on how to improve marketing of agricultural products and inputs.

Terms of reference

The main task of the facilitators was under the to carry out a critical assessment of the agricultural markets in south-eastern Uganda, with specific emphasis on current performance, constraints and opportunities, under the supervision and of the FITCA Agricultural Economist. Below are the specific terms of reference:

1. To assess the availability and quality of markets for agricultural products/produce in south-eastern Uganda.
 - (a) Assess the structure, conduct and performance of agricultural markets
 - (b) Identify the main agricultural outputs by area
 - (c) To determine the main characteristics of consumers and their preferences
 - (d) To determine seasonality patterns of agricultural production
 - (e) To identify the constraints to agricultural marketing
2. To assess the demand and supply of agricultural inputs in southeastern Uganda.
 - (a) Assess the main agricultural inputs required used in the region
 - (b) To assess the supply (availability) of inputs in the market
 - (c) To assess the demand for agricultural inputs
 - (d) To determine the main procurement pathways for inputs
 - (e) Identify the constraints to delivery of agricultural inputs
3. Assess the processing and storage of agricultural products in southeastern Uganda.
 - (a) Assess the availability of infrastructure for processing and storage of agricultural products
 - (b) Describe the main activities undertaken for value addition for the main products
 - (c) To identify the constraints to improved processing and storage of agricultural products
4. Assess the strategies for marketing of agricultural products in southeastern Uganda.
 - (a) Identify the institutional framework available at district and community level; to promote agricultural marketing

- (b) Assess the adequacy of policies and actors in place to achieve improved agricultural marketing
- (c) Identify constraints to formulation and implementation of strategies for improved agricultural marketing.

Methodology

Survey Area

The survey was carried out in six representative districts of south eastern Uganda, namely, Soroti, Busia, Bugiri, Mayuge, Kamuli and Mukono. The six districts are among the twelve districts in which FITCA is currently operational. The other six districts are, Iganga, Tororo, Pallisa, Jinja, Mbale and Kayunga. The six districts in which the survey was conducted were selected mainly based on agro-ecological potential because of its influence on agricultural production. There is a clear variation of agro-ecological potential as one moves from Mukono in central Uganda, to Soroti in north-eastern Uganda. The six districts selected for the study represent a stratification of the agro-ecological potential.

Data Collection

The data collection methodology used in this study was that developed by Holtzman (1986) for studying commodity sub-sectors using rapid appraisals. Doing a rapid appraisal (RA) is an efficient way to obtain policy-relevant and intervention-focused information about any agricultural sub-sector. RA avoids the cost, delays and management burden of formal surveys while still providing the experienced analyst with a practical set of tools for identifying constraints and opportunities, cross-checking observations, and planning or monitoring strategic interventions.

Justification of data collection of the methodology

Rapid appraisal has been used in many similar studies with good results. Interest in rapid appraisal grew out of frustrations with lengthy, costly and management-intensive formal surveys in developing countries that rarely generated timely and policy relevant analyses. Although computer advances have made processing of survey data far faster and more efficient than two decades ago, many formal surveys nevertheless bog down in senior analyst supervisory load, logistical problems, non-sampling error, and management difficulties. Rapid appraisal (RA) techniques rely heavily on structured informal interviews with key informants, knowledgeable observers of a sub-sector and a minimum number of participants

at different stages of the sub-sector. Conducted by analysts, not enumerators, these interviews provide an opportunity to clarify and probe, identify causal linkages and relationships, and identify well defined, but poorly understood areas for further formal research.

RA methods can also be useful exercises at the beginning of longer-term programs of applied research and testing of marketing system innovations. In addition, RA can be used to do focused study updates (of earlier formal surveys), and as a complement to a longitudinal, formal research program. Finally, RA surveys can be used to identify agribusiness opportunities, as well as to design, monitor and evaluate donor-funded projects and policy reform programs (World Bank, 2001; Holtzman, 1993). RA was, therefore, found to be most appropriate data collection method for this study.

The Interviews

Data was collected through key informant interviews and focus group discussions using structured questionnaires (Annex I). The main categories of persons and/or groups interviewed were:

1. District technical staff from the Directorate Production (Agriculture, Veterinary, Entomology, Trade, Fisheries, Environment);
2. Representatives of key private sector agencies;
3. Representatives of key Non-Governmental Organizations and Community Based Organisations;
4. Representatives of farmers' associations/co-operatives;
5. Agricultural input stockists; and
6. Farmers

Secondary data

Data was also collected from extensive literature search from information at the districts (local government, private sector, farmers' associations) Uganda Bureau of Statistics, NRI/FoodNet, FITCA, and other related studies.

Analytical framework

Data analysis is mainly in form of descriptive statistics using data collected through the interviews and also from secondary sources. For analyzing the market situation, the Structure-Conduct-Performance framework (SCP) was used. The SCP framework was derived from the neo-classical analysis of markets. In the original application of the framework to markets, the structure of a market (i.e. the number, size and diversity of participants at different levels) influences the conduct of marketing activities (i.e. the reliability or timeliness of activities, control or standardization of quality) which together determine the performance of the marketing system as a whole (i.e. the technical and allocative efficiency of the market, the degree of market integration, price and margin stability, accuracy and adequacy of information flows, etc.).

While it was originally used to examine markets, the framework has wider applications. It can be used to examine service delivery, institutions or planning mechanisms. In its application to service-providing institutions, the structure of, for example, an organisation responsible for agricultural extension (e.g. who determines work plans for fieldworkers?) influences the conduct (e.g. do fieldworkers have the flexibility to determine what information they communicate to farmers and the methods they use?), which together determine the performance of the service as a whole.

SECTION ONE

1.0 Assessment of the availability and quality of markets

1.1 Introduction

This section presents the findings of an assessment of the market situation for agricultural products in six districts of south eastern Uganda. A brief background to the agricultural marketing policies and how they have evolved over time is given, followed by the current market situation in the region. Specific emphasis is given to the structure, conduct and performance of agricultural markets, the main products by areas, seasonality of production and marketing constraints in the region. Production levels of the main crops and livestock are given in comparison with national figures obtained from different sources.

Prior to market liberalization in Uganda, the marketing of produce was a monopoly of government parastatals like Produce Marketing Board, Coffee Marketing Board and Lint Marketing Board. These parastatal companies had the monopoly of buying and selling of produce, and also determined farm gate prices. The ushering in of structural adjustments programs in the 80's saw government divest itself from, among other things, controlling agricultural markets. Today, agricultural markets are completely liberalized and prices are mostly determined by market forces.

1.2 The structure, conduct and performance of agricultural markets

The SCP framework was used to analyse the marketing situation for agricultural products. This framework is an appropriate analytical tool because through it is possible to tell whether or not the current market price is an indicator of the social worth of the goods.

1.2.1 Structure of agricultural markets

There are three types of produce markets in all the districts, namely, weekly markets in gazetted areas, weekly roadside markets, and daily markets in urban centres and trading centres. Farmers who are near these markets prefer to sell their produce in these markets at better prices rather than selling to traders who move around homes.

The structure of agricultural markets in south eastern Uganda is imperfect, typical of food and agricultural markets in the least developed countries. The imperfectness is a result of poor information flow about prices, few produce buyers who dictate prices, high transactions

costs, and lack of an institutional framework in which buyers and sellers meet as well informed equals for a voluntary contract. In all the districts, produce is mainly bought from homes by middlemen moving on bicycles, motorcycles and occasionally motor vehicles. Because farmers lack information about the going markets prices, middlemen buy at low farm gate prices and then sell to processors and exporters who have stores in urban areas (Fig. 1). The other problem is that buyers are few, and farmers are in most cases price takers rather than price makers. This has resulted in lack of an equilibrium price for most products and hence poor allocative efficiency of the markets.

In very few cases, farmers associations help farmers to access better prices. A good example is in Soroti, where Uganda Oil Seed Producers Association (UOSPA) has organized farmers in groups so as to sell in bulk for better prices. In Busia, traders sell their produce to neighbouring Kenya, especially maize, cassava and fish for better prices. Most of the produce sold to Kenya through Busia comes from neighbouring districts like Bugiri, Mbale and Tororo. Traditionally, demand from Western Kenya acts as a safety valve for the disposal of agricultural produce, especially maize, from eastern Uganda. This trade is largely informal and accurate statistics are not available. For the rest of the districts, Kampala is the main final destination of marketed produce for eventual formal export and consumption by city dwellers.

For maize, World Food Programme (WFP) is a main buyer in south-eastern Uganda. They have warehouses in Tororo where they store relief food destined for distressed areas in north east Uganda and northern Kenya.

1.2.2 Conduct of Agricultural Markets

The conduct of agricultural markets in the region is largely influenced by their structure. Because of poor information flow and few buyers, the markets are unpredictable and unreliable. Farmers therefore produce with a lot of uncertainty about the market. It is only crops produced on contract arrangements with farmers that are assured of markets. Good examples are sunflower produced under support by UOSPA and a sorghum variety called *Epuripur* produced under contract arrangement with Nile Breweries. Fish has also not had market problems as demand is always higher than supply. Maize, a major crop in the region, which until recently was not a traditional cash crop, still suffers uncertainty of markets. Farmers reported sharp price fluctuations for maize, with prices sometimes falling from Ushs

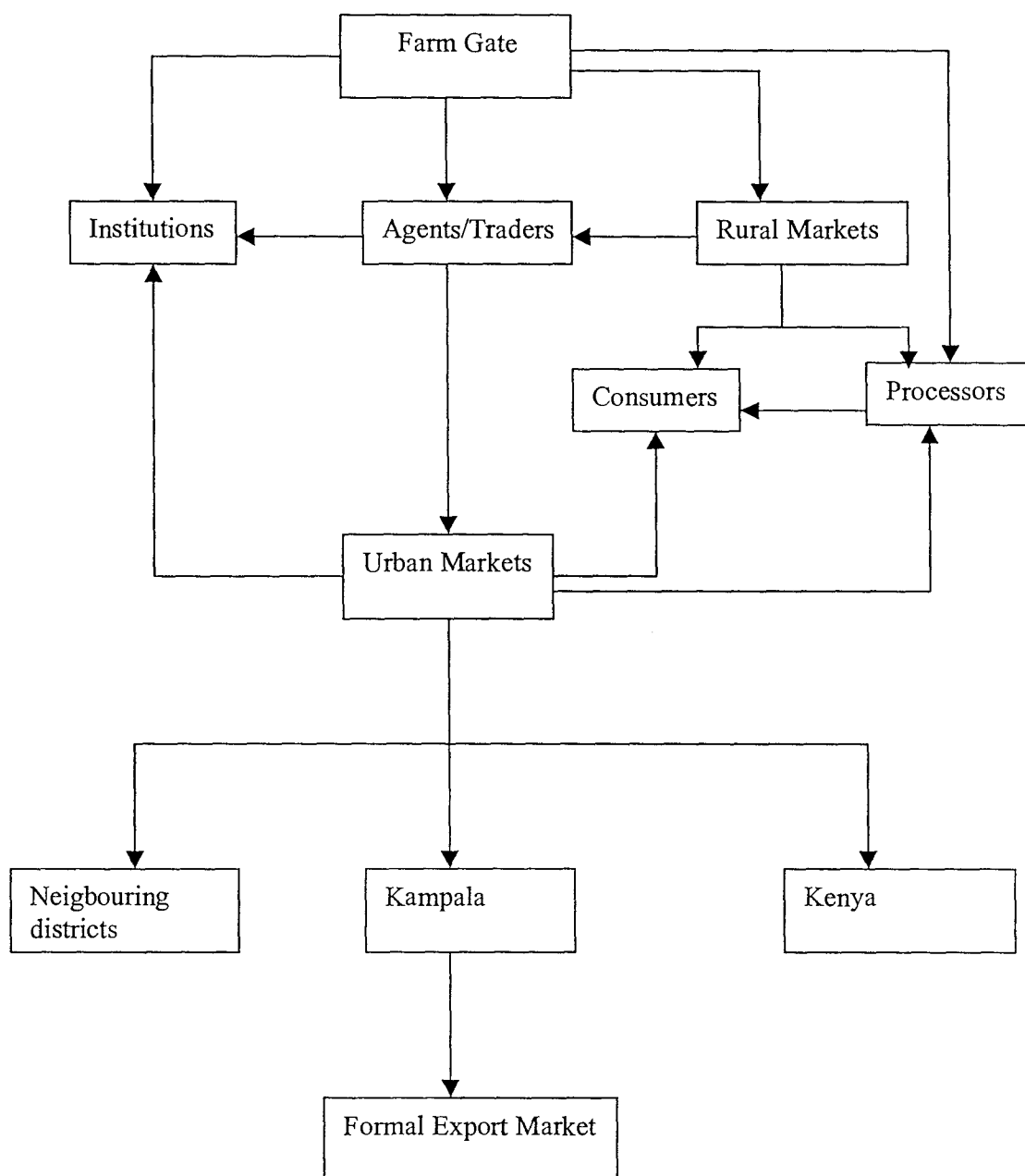
250/kg at the beginning of the year, to around Ushs 100/kg by the third quarter. Such steep price fluctuations negatively affect farmers' ability to plan ahead.

Another problem affecting the conduct of agricultural markets is lack of standardization and quality control. Farmers produce without a clear understanding of market standards and this negatively affects farm gate prices. Similarly, traders and processors do not observe the recommended standards during storage, processing and packaging and transportation of products, which negatively impacts on the marketing, especially export to international markets.

1.2.3 Performance of Agricultural Markets

The structure and conduct together determine the performance of the marketing system as a whole. One of the major constraints affecting the performance of markets is the high level of transactions costs. Due to transactions costs, price variation between farm gate and the urban market is very high. Some time these costs are prohibitively high leading to market failure for most agricultural produce. The Natural Resource Institute in conjunction with IITA (Foodnet) conducted a transaction cost analysis for agricultural markets in Uganda in 2002. The salient finding was that transactions costs involved in agricultural marketing are high and are responsible for low farm gate prices. They recommended that through formation of Farmer Controlled Enterprises farmers can improve transaction cost efficiencies as way of improving farm gate prices

Fig. 1. Marketing chain of main agricultural products in south eastern Uganda.



1.3 The Main Agricultural Products by Area

1.3.1 Crops produced

According to information obtained from district agriculture departments and focus groups discussions, the main crops in south-eastern Uganda by district are summarized in Table 1.1. Maize, cassava, sweet potatoes and beans are the food crops across all the districts, while coffee and cotton are the main cash crops. Due to shortage of land, the average acreage under crops is about two acres per household. Maize was found to be a very important food and cash crop in the entire region. Indeed, in 1999/2000, maize accounted for 41.6% of agricultural GDP of Uganda (IITA/NRI, 2002). Vanilla is another high value cash crop but is only produced in Mukono among the six districts studied. Data on production level was not readily available at the districts due to lack of capacity to collect, process and store updated information. The data presented in this study was obtained from UBOS and IITA-Foodnet, in Kampala. For purposes of comparing the south-eastern region with the rest of country, national production figures for regions are presented (tables 1.2 - 1.8).

Table 1.1 Main agricultural products/produce in southeastern Uganda, August, 2003.

District	Products
Soroti	Crops: Maize, soy bean, g/nuts, sorghum, finger millet & sunflower); Livestock: Cattle, pigs, goats and chicken
Busia	Crops: Maize, cassava, fruits, sorghum, and g/nuts Livestock: Cattle, pigs, goats and chicken and Fish
Bugiri	Crops: Maize, coffee, rice, cassava, sweet potato & cotton. Livestock: Cattle, pigs, goats, chicken and fish
Mayuge	Crops: Maize, coffee, beans, sweet potato and cassava Livestock: Cattle, pigs, goats, chicken and Fish
Kamuli	Crops: Maize, sorghum, Cassava, cotton, cooking banana & coffee and Fish. Livestock: Cattle, pigs, goats, chicken and Fish
Mukono	Maize, beans, vanilla, coffee, cassava, cooking banana and beans Livestock: Cattle, goats, Chicken and Fish

Data available from IITA-Foodnet and Uganda Bureau of Statistics (UBOS) indicates that the Eastern region was the largest producer of maize, cassava, sweet potato, finger millet, sorghum, and groundnuts for the year 2000. The central region was the largest producer of cooking banana and beans for the year 2000. Production data disaggregated by district is shown in Annex III. Data for Bugiri and Mayuge was not available, however, data from Iganga is given and assumed to be representative of the situation in the two districts.

Table 1.2. Cassava Production in Metric Tonnes (MT)

Cassava
UBOS Crop Survey Module 1999/2000
Production of Cassava by Region (MT)

	Central	Eastern	Northern	Western	Total
1995/1996	110,000	1,659,000	447,000	531,000	2,747,000
1999/2000	195,000	1,213,000	457,000	381,000	2,246,000

Table 1.3. Maize Production

UBOS Crop Survey Module 1999/2000
Production of Maize by Region (MT)

	Central	Eastern	Northern	Western	Total
1995/1996	46,000	282,000	57,000	149,000	534,000
1999/2000	151,000	408,000	61,000	124,000	744,000

Table 1.4. Sweet potato production

UBOS Crop Survey Module 1999/2000 (MT)
Production of Sweet Potatoes by Region

	Central	Eastern	Northern	Western	Total
1995/1996	221,000	1,475,000	297,000	996,000	2,989,000
1999/2000	507,000	1,029,000	51,000	1,034,000	2,621,000

Table 1.5 Finger Millet Production

UBOS Crop Survey Module 1999/2000 (MT)
Production of Finger Millet by Region

	Central	Eastern	Northern	Western	Total
1995/1996	4,000	92,000	35,000	62,000	193,000
1999/2000	10,000	66,000	37,000	72,000	185,000

Table 1.6. Sorghum Production

	Central	Eastern	Northern	Western	Total
1995/1996	6,000	45,000	40,000	111,000	202,000
1999/2000	8,000	44,000	24,000	37,000	113,000

UBOS Crop Survey Module 1999/2000 Production of Sorghum by Region (MT)

Table 1.7. Ground Nut Production

UBOS Crop Survey Module 1999/2000 (MT)
Production of Ground Nuts by Region

	Central	Eastern	Northern	Western	Total
1995/1996	21,000	42,000	30,000	43,000	136,000
1999/2000	23,000	41,000	31,000	30,000	125,000

Table 1.8 UBOS Crop Survey Module 1999/2000 Production of Cooking Banana by Region (MT)

	Central	Eastern	Northern	Western	Total
1995/1996	1,376,797	917,205	90,865	5,524,117	7,908,984
1999/2000	1,687,000	481,000	14,000	3,363,000	5,545,000

1.3.2 Livestock Production

The main livestock types kept in the region are indicated in Table 1.1. Cattle, chicken and goats are the main livestock kept, with varying importance and predominance across the region. Of the six surveyed districts, only Kamuli and Soroti are in the cattle corridor, implying that cattle keeping as an economic activity is very important only in these two districts. Much of this report hence dwells more on crop production and marketing.

Kamuli has the largest cattle population in the region followed by Mukono and Soroti (Table 1.9). This could be attributed to the fact that Kamuli has more land available especially in the north near Lake Kioga, where extensive land enables open grazing. Mukono has the highest number of grade cattle among the six surveyed districts. The district has for long been known for higher levels of commercialisation of agriculture, and this has been boasted by proximity to a large and lucrative market in Kampala, which also means the farmers have better access to inputs. The disaggregated livestock data is presented in Annex IV.

Table 1.9 Livestock type by district, in S.E. Uganda, 2003.

District	Cattle-Exotic	Cattle-Cross	Cattle-Local	Total H/C	Goats	Pigs	Chicken
Busia	0	0	0	14620	31557	2693	166034
Bugiri	0	232	32949	33181	58810	7535	194174
Mayuge	0	0	559	15275	15834	32203	20217
Kamuli	0	0	0	163075	145892	5297	518201
Mukono	1321	6533	27592	61416	57725	6806	485943

Source: FITCA Livestock Census, 2001.

1.3.2.1 Livestock Products

The main livestock products in the region are milk, meat and hides and skins. Production of milk is largely at subsistence level in all the districts, except in Mukono and Kamuli where private businessmen have established coolers and milk processing for commercial purposes. There is limited value addition to the livestock products in form of processing. Details about processed livestock products like yoghurt are presented in section 3.

1.3.2.2 Livestock Markets

The main livestock products brought to the market are live animals for slaughter, and for sale to other farmers for breeding. According to information available at the districts, there is at least one livestock market in each sub-county in all the districts in addition to the butcheries in the urban centres. Throughput of the urban butcheries ranges from 5 –10 cattle per day in the main towns. There are slaughter houses in Mukono and Jinja towns with an average throughput of up to 50 cattle per day. The slaughter house in Jinja also serves the Kamuli area. The slaughter houses and butcheries are under close supervision of the Veterinary Department at the district level.

The main destination of milk from Kamuli is Jinja, while milk from Mukono is mainly sold in Kampala. In Soroti, Busia, Bugiri and Mayuge, milk is mainly sold by vendors who transport it to the urban centres on bicycles in the early morning and in the evenings. Hides and skins are bought by traders from Kampala and Jinja mainly for the export market. According to the Meat Production Master Plan Study (1998), hides and skins are virtually the only products from livestock which have been able to break into the export market. Exports of raw (salted and dried) hides and skins increased from 5,781 tonnes in 1993 to 14,285 tonnes in 2001 (Livestock Development Project Document, 2002).

1.3.3 Fish Production

Fish is a major product in all the six districts. At least one landing site was visited in the five districts to assess operations in the fishing sector. All the districts largely depend on Lake Victoria for fishing, except Kamuli which depends on Lake Kioga and River Nile, with limited production from aquaculture. The major commercial fish species include Nile perch (*Lates niloticus*), Tilapia (*Oreochromis niloticus*), and mukene (*Rastreneobola argentea*), of which Nile perch is the major export commodity to the markets of Europe, Australia and South-east Asia.

Most fishing is carried out using small wooden (plank built) boats of 8-10m in length, which use sail and oars. Only 15% of the boats are motorized, apart from collection boats used by fish merchants and their agents. Access to the lake resources does not seem to be a problem facing the fishermen. Their small boats are able to carry them to and from the fishing grounds with full loads of fish. For areas neighbouring the lake, fishing is the main economic activity.

Fish is mainly sold fresh due to high demand. Details of fish handling and processing are discussed in section three of this report.

There have been efforts in all the five districts to promote aquaculture as a means of supplementing lake harvests. Each of the districts has more than 50 ponds being operated privately. Fish farmers are receiving support from NAADS through provision of fish breeding stock. Commercial fish farming offers a unique opportunity to increase the volume of export, and also access to basic food production technology and increased food security. To date, most of the fish farming in the region is carried out at subsistence level for production of Tilapia. Commercial fish farming has been an initiative by a few local entrepreneurs and has not had any substantial donor or government support. It has been highlighted as an area for development in the National Fisheries Policy, but is currently at a very early stage of development. From the poverty perspective, aquaculture is not for poor producers. According to the ponds owners visited during the survey, the fixed and working capital is far too high and cannot be afforded by poor farmers. However, according to DFID's Aquaculture Project, some potential exists in small-scale fish farming sited away from the major lakes and far north to take advantage of higher temperatures which increase yield.

One salient observation made during the survey was that the supply of fish from Lake Victoria is highly inelastic, especially in the short-run. This is supported by findings of the IITA/NRI (2002) transaction cost analysis study of Ugandan fish market. This means that, correcting for seasonal variations, the quantity of fish harvested and brought to the market remain roughly constant regardless of price variations. This economically counter intuitive observation could partly explain the tendency of over harvesting, characteristics of free access resources.

1.4 Characteristics of Consumers and their preferences.

Consumer preference is largely a function of level of income but can also be conditioned by culture. The consumers of agricultural products can be divided into three categories, rural households, urban households, and institutions (schools, hospital, prisons etc.), characterised by income level and function/type of business. Rural households consist mainly of low income earners who consume products in fresh form, dried or semi-processed. As already mentioned, maize, cassava and sweet potatoes are the main staple foods in rural households across the region. In rural areas, for example, maize is consumed mainly in bread form

prepared from flour but is also consumed fresh either by roasting or cooking. There are no wide variations among the rural households in preference across districts, and this is hypothesized to be due to the relatively uniform income levels.

In urban areas, preferences are different, with consumers going more for protein-based foods like beef, fish and milk and fruits and vegetables. There were no major variations in preferences among the urban consumers across the region. However, in Mukono, there were more fast food restaurants indicating that there are consumers who do not like the traditional products and dishes.

Institutions, on the other hand, prefer dry foods especially maize, cassava, beans and in some case cooking bananas. Like rural households, institutions rarely purchase commodities like fish, and livestock products like meat and milk. The main market for such products, therefore, lies in urban areas. Districts proximal to Kampala like Mukono and Kamuli, are able to tap the huge market for fruits, vegetable, meat, fish and milk, while the distant ones like Soroti, Busia only depend on small urban markets.

1.5 Seasonality Patterns of Agricultural Production

Agricultural production in south eastern Uganda, like all other parts of the country, is entirely rain fed. Production is inevitably determined by rainfall patterns. There are two pronounced rainy seasons in the year, February – May and September – December. This seasonal pattern enables farmers to produce two crops each year.

In extreme eastern districts of Soroti, Busia and Bugiri, land preparation for annual crops starts in January and stretches into February. Planting starts in February and extends into March. Harvesting commences in June and stretches into July. Planting for the second season starts in August/September. In the central districts of Mukono and Kamuli, land preparation commences in February and stretches into March. Harvesting commences in July and stretches into August. Planting for the second season starts in August/September.

During the harvesting periods, prices plummet due to excess supply and low demand. Prices shoot up again after planting through growing season. The excess supply during the harvest period is compounded by the fact that all farmers produce the same crops and since there are

limited efforts to store the excess due immediate financial needs by households, markets are flooded.

Rainfall patterns have sometimes been unpredictable in the region with both extremes of excessive rainfall (El Nino) and extensive drought being reported in different years. The Early Warning Systems Department periodically announces rainfall forecasts to help farmers plan accordingly. However, the trickling down of such information to the remote rural farmers is limited.

1.6 Marketing constraints

The marketing of agricultural produce/products faces a wide range of constraints, some of which are unique to different types of commodities, different types of markets and different levels of the marketing chain. However, the constraints presented are general for the main commodities but are explained by taking into account the different stages in the marketing chain.

1.6.1 Primary and secondary level

The primary level includes the farm gate, agents/traders' stores, while the secondary levels of the marketing chain include village markets and urban markets. At farm level, the main constraint is land shortage, which means that farmers are limited in output and hence have less marketable surplus. This is exacerbated by high unit costs of production, which results in low profitability.

Poor quality of produce at farm gate resulting from poor harvesting methods, poor post harvesting handling is another constraint, which leads to low prices to farmers. Furthermore, poor quality leads to a high percentage of rejection of produce by traders. For example, there are minimum standards required for moisture content for most grains (cereals), coffee, and other produce. For livestock products, quality appears not to be a problem since most of the products (milk and beef) are locally consumed.

Another major constraint is poor and often complete lack of market information at farm gate level, and the inadequate road network. This results in some farms being inaccessible to traders, particularly in the rainy season implying that farmers in remote areas have no market for their produce. The transactions costs of accessing markets by such farmers are

prohibitively high such that they give away their produce at very low prices to traders who venture into remote areas.

Lack of storage facilities at both the household and rural trading centres level is also a major constraints that has both quality and price implications. Due to inadequate storage facilities farmers have limited trading opportunities and are inevitably price takers, with little or no bargaining power to enable them to exploit competition amongst traders.

1.6.2 Tertiary level

The tertiary level involves large-scale traders who buy produce from main urban centres destined for the Kampala market or for export. The major constraint at this level is high transportation costs, particularly from distant districts like Soroti and Busia. There is limited trade in livestock and livestock products in the region at tertiary level. Much of the demand for livestock and livestock products in Kampala is mainly covered by inflows from central and south western Uganda.

1.6 Conclusion

Crop production is the main economic activity in all the six surveyed districts, with maize and cassava being particularly important food and cash crops. The region was the largest producer of major grains for the year 2000. Livestock production is mainly for subsistence consumption, with limited trade outside the districts. Fish production is also an important economic activity in all districts except Soroti, with Lake Victoria being the main source. Fish farming is increasing but is constrained by high investment and maintenance costs.

Production levels for both crops and livestock are limited due to land shortage. With an average land holding of about 2 acres per household, farmers are unable to produce enough output for consumption and marketing. Increasing production under fixed land availability would require intensive husbandry methods using improved crop varieties and animal breeds and the required inputs. Inputs are not easily available in remote areas and prices are unaffordable. The result is that very few farmers in the region produce for the market.

The structure, conduct and performance of agricultural markets in the region are such that farmers do not get their deserved share of the marketing proceeds. Due to poor information flow, poor road networks and poor storage facilities, farmers have very limited trading

opportunities. They are mainly price takers with no bargaining powers over their produce. Commercialisation of agriculture in rural areas is therefore seriously constrained.

1.7 Recommendations

Any recommendation that will help farmers must be aimed at improving access to markets and ensuring a better bargaining power for their commodities. The following recommendations, which are in line with governments' Plan for Modernization of Agriculture, are therefore suggested. Some of these recommendations are similar to those proposed by IITA/NRI to the PMA Secretariat.

1. *Improve the road network in rural areas:* There is need to improve rural accessibility by upgrading rural feeder roads. This is one of the PMA strategic interventions meant to improve marketing and agro-processing.
2. *Improve farm gate prices:* Since prices are determined by market forces in the liberalized world, the only way to improve price indirectly is by improving quality and reducing post harvest loss. Such initiatives can be implemented as part of the NAADS service delivery programmes.
3. *Encourage and facilitate formation of farmers groups.* Where farmers' marketing groups exist like in Soroti, there is better marketing efficiency. These groups enable farmers to store and market their produce in bulk thereby reducing transaction costs. Groups would also enable farmers to have a common bargaining voice for better prices.
4. *Provision of rural finance.* Farmers largely depend on their meagre incomes to finance their agricultural investment. Farmers need to be supported with affordable loans for purchase of inputs and trading working capital. There are NGO's in the region helping farmers with loans like Promotion of Rural Initiatives and Development Enterprises (PRIDE), but they are limited in coverage. There is need for a deliberate government policy on rural finance as a means of fighting poverty. The rural finance component of PMA needs to be strengthened.
5. *Improvement market information systems.* Mechanisms should be put in place at district level, and if possible at sub-county level to disseminate market information.

The current initiatives such as the IITA-Foodnet market information services need to be expanded and supplemented in order to reach rural areas. Government in collaboration with the private sector could handle this by taking advantage of the mushrooming FM radios all over the country.

SECTION TWO

2.0 Demand and supply of agricultural inputs in South Eastern Uganda.

2.1 Introduction

This section presents an overview of the delivery systems for agricultural inputs in the six districts of southeastern Uganda. Inputs constitute an important component of agricultural production. Until the early 1980s, most inputs used for agricultural production were delivered by government agencies either free or at highly subsidized rates. During that period, government was involved in the procurement and sale of the bulk of inputs to farmers through District Veterinary and Agriculture Offices.

Introduction of the Structural Adjustments Programmes (SAPs) in 1980s and 90s, led to an inevitable reduction in operational funds available to state veterinary and agricultural services, paving way for the privatisation of delivery of inputs systems. The procurement and sale of inputs has since been largely left to the private sector, with government only limiting itself to providing an enabling environment through improvement of infrastructure. Part of this study was aimed at assessing the demand and supply of agricultural inputs (both crop and livestock inputs) in southeastern Uganda, with specific interest in the procurement pathways, utilization of inputs by farmers and constraints faced in the delivery these inputs.

2.2 Procurement Pathways for Agricultural Inputs

The procurement and sale of agricultural inputs is the responsibility of the private sector (importers and wholesalers), from whom retail stockists, and in rare cases NGOs and farmers' associations obtain their stock. The retail stockists purchase their stock of inputs mainly from dealers and wholesalers in Jinja and Kampala, except for Busia district where some are procured from Kenya. Individual stockists have the responsibility of transporting their stock from Kampala to their respective destinations. However, two major input dealers, namely, Coopers (U) Ltd and Quality Chemicals Ltd, sometimes deliver to the stockists' premises depending on the quantities purchased. In Mukono, for example, these two major suppliers often deliver inputs to the private stockists, mainly because they buy in bulk and distances are shorter. Fig. 2.1 shows a schematic presentation of the procurement and supply pathways for inputs in southeastern Uganda.

In all the six districts, the major stockists are based in urban areas while very few and often under-stocked farm supply shops exist in the rural areas (Table 2.1). There are also a few mobile vendors in some districts who sell inputs in weekly markets. However, are being discouraged by the district officials and are instead required to establish shops. In Kamuli District efforts have been initiated by NGOs to train some of the vendors to equip them with basic skills for handling inputs.

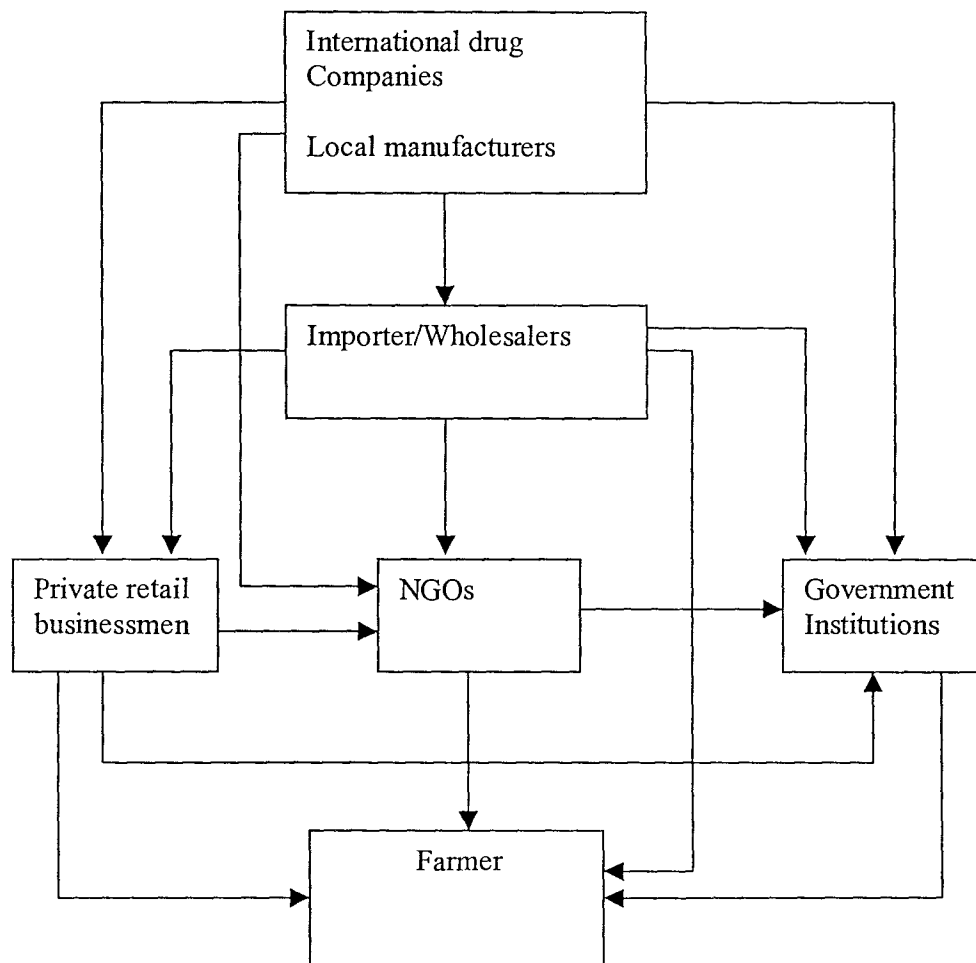


Fig. 2.1. Procurement and distribution channels for agricultural inputs in South-eastern Uganda, August 2003.

Apart from private stockists, there are number of NGOs and farmers associations involved in the sale and distribution of inputs. The main NGOs involved in delivery of inputs in the south eastern region include Ssasakawa Global 2000, Church based organisations, Africa 2000,

District Farmers' Associations. Government through Ministry of Agriculture, Animal Industry and Fisheries, (Farming In Tsetse Controlled Areas Project, NAADS, PMA), Cotton Development Organisation (CDO), and Uganda Coffee Development Authority (UCDA) also helps farmers to access inputs (Table 2.1). For example, the supply of coffee seedlings is mainly handled by UCDA while cotton seedlings are supplied CDO. UCDA distributes free coffee seedlings to farmers in Mukono, Kamuli, Mayuge and Bugiri, particularly to replace those destroyed by coffee wilt. On the other hand, CDO distributes free seed and also subsidized chemicals to farmers. Both UCDA and CDO are also involved in training farmers in husbandry practices, and to a limited extent provision of extension services.

The NGOs, particularly SG 2000 and Africa 2000, are largely involved in training and establishment of 'on-farm' demonstrations aimed at increasing awareness of inputs used and seed multiplication. In some districts, NGOs operate input outlet shops in addition to offering extension services.

Farmers' associations are also involved in training, and to a limited extent in selling of inputs. One particular example is Soroti District Farmers' Association (SODIFA), which operates one of the biggest crop input supply shops in the district. Farmers' associations across the districts are also involved in providing marketing information and post harvest handling. NAADS is involved in helping groups of farmers in sourcing, procurement and delivery of a wide range of agricultural inputs for priority enterprises, in Soroti, Busia, Kamuli and Mukono. The main inputs that NAADS has helped to procure in the region include:

- (i) Improved cocks;
- (ii) Improved male goats;
- (iii) Artificial insemination kits;
- (iv) Improved pig breeds;
- (v) Improved groundnut seed;
- (vi) Moringa seed;
- (vii) Passion and Mango seedlings;
- (viii) Fish fry

3.3 Supply of Agricultural Inputs

3.3.1 Crop inputs

A wide range of crop inputs are supplied in agro-vet shops in the region. These include seed (for maize, beans, sunflower, soyabean, cassava, tomatoes, cabbage, watermelon, onions and carrots), fertilizers, herbicides, and insecticides. (Table 2.1). Three stockists were visited in each district to assess the supply of agricultural inputs. In all the districts there was at least one crop input supply shop except Busia, where one of the three input shops stocked only tomato seeds.

Farmers in Busia purchase other crop inputs, like maize seed, herbicides, fertilizers and pesticides from the nearest towns like Tororo and neighbouring Kenya. Mukono and Kamuli had the widest range of crop inputs supplied by shops followed by Bugiri, while Mayuge, Busia and Soroti had a limited range of inputs. The limited range of crop inputs supplied in Mayuge, Busia and Soroti could be attributed to the long distance to Kampala, and the relatively low agro-ecological potential of the three districts.

All the six districts had at least one supplier of fertilizers, pesticides and herbicides in varying quantities in the main towns, except Busia where none of the farm supply shops stocked any of these inputs. Stockists in Busia blamed failure to stock these inputs on the poor demand by farmers and lack of capital for increase their stocks. Shops in Mukono and Kamuli district stocked the highest amounts of fertilizers with an average of over ten tonnes of fertilizers (especially DAP and UREA) being sold per month. In the other districts supply of fertilizers was relatively low with an average of one ton being sold per season. The high supply of fertilizers in Kamuli was attributed to the high utilization of the input by large scale sorghum (*Epuripur*) growers, while in Mukono it was attributed to higher agro-ecological potential and higher levels of commercialisation of agriculture.

Table 2.1 Availability of different crop production inputs in southeastern Uganda, August 2003.

Input		District					
		Soroti	Busia	Bugiri	Mayuge	Kamuli	Mukono
Seed	Maize	A	A	A	A	A	A
	Beans	A	A	A	A	A	A
	Soya bean	A	-	-	-	-	-
	Sun flower	A	-	A	-	-	-
	Tomatoes	A		A	A	A	A
	Cabbage	A	A	A	A	A	A
	Onions	-	-	A	A	A	A
	Red pepper	-	-	-	-	-	A
	Okra	-	-	-	-	-	A
	Water melon	-	-	A	A	A	A
	Carrot	-	-	A	A	A	A
	Egg plant	-	-	A	A	A	A
	Spinarch	-	-	-	-	-	A
Fertilizers	DAP	A		A		A	A
	UREA	A	-	A	-	A	A
	NPK	-	-	-	-	A	A
	SSP	-	-	-	-	A	A
	Rapid Gro	-	-	A	A	A	A
	TSP	-	-	-	-	A	A
Pesticides & Fungicides	Dithane M45	A		A	A	A	A
	Dursban 4E	-	-	-	-	-	A
	Tagfor 40 EC	-	-	A	A	A	A
	Cyperlacer	-	-	A	A	A	A
	Bayfolan	-	-	-	-	-	A
	Troban 48 EC	-	-	A	A	A	A
	Ambush	A	-	A	A	A	A
	Diazinon	-	-	-	-	A	A
	Pyrinex 48 EC			A	A	A	A
	Dimethoate	-	-	-	-	-	-
	Dudu dust	A	-	A	A	A	A
	Antiboorer	-	-	-	-	A	A
	Indofil M 45	A		A		A	A
	Malathion	-	-	A	-	A	A
	Mancozeb			A		A	A
Herbicides	Round up	A	-	A	A	A	A
	Butanil	-	-	-	-	A	A

A Input was available at least in one of the agro-vet shops visited

- Input was not available in any of the agro-vet shops visited

Table 2.2 Availability of different livestock production inputs in six districts in south eastern Uganda, August 2003.

August 2005.		District					
	Input	Soroti	Busia	Bugiri	Mayuge	Kamuli	Mukono
Insecticides	Decatix	A	A	A	A	A	A
	Spoton	A	A	A	A	A	A
	Bimitraz	A	A	A	A	A	A
	Tsetse tick	A	A	A	A	A	A
	Bayticol	A	-	-	-	A	A
	Bliztdip	-	-	A	-	-	A
	Renegade	A	-	-	-	-	A
	Alfapor	-	-	A	-	-	A
	Supona	A	A	A	A	A	A
	Taktik	-	-	-	-	-	A
	Norotraz	A	-	A	-	-	A
Trypanocidals	Samorin	A	A	A	A	A	A
	Diminaphen	A	A	A	A	A	A
	Ethidium	-	-	-	-	-	A
Wormicides	Wormicid	A	A	A	A	A	A
	Levafas	A	-	A	A	A	A
	Levoxy	A	-	A	A	A	A
	Aldebendazole	A	-	A	A	A	A
	Ascarex	A	A	A	A	A	A
	Wormita	-	-	A	-	A	A
Poultry drugs & Vitamins	Fural	-	-	-	-	-	A
	Ancomycin egg formula	-	-	A	-	A	A
	Neocyl	-	-	-	-	-	A
	Tetroxy egg formula	A	-	A	-	A	A
	Medmycin	-	-	-	-	-	A
	Alamycin egg formula	-	-	-	-	A	A
	Afavil	-	-	-	-	-	A
	V&E plus	-	-	-	A	-	A
	Ampro-sul	-	-	-	-	A	A
	Ascarex	A	-	A	A	A	A
	Fuzul	-	-	-	-	-	A
	Plotricin	A	-	A	A	A	A
	Contromycin	-	-	-	-	A	A
	Vitastress	-	-	A	-	-	A
	OTC Vit plus	A	-	-	-	A	A
Poultry Feeds	Layers marsh	-	-	-	A	-	A
	Growers marsh	-	-	-	A	-	A
	Broiler march	-	-	A	A	-	A
	Sun flower cake	-	-	A	A	-	A
Cattle feeds	Dairy meal	-	-	-	A	-	A
	Bone meal	-	-	-	A	-	A
	Fish meal	-	-	-	A	-	A
	Cotton seed cake	-	-	A	A	-	A

A Input was available at least in one of the agro-vet shops visited

- Input was not available in any of the agro-vet shops visited

2.3.2 Livestock inputs

The supply of livestock inputs followed almost the same pattern as crop inputs. Each district had at least one veterinary input supply shop located in the town. Stockists in Mukono, followed by Kamuli, and then Bugiri supplied the widest range of inputs including insecticides, trypanocidals, dewormers, antibiotics, poultry drugs and feeds. (Table 2.2). Stockists in Soroti, Busia and Mayuge, on the other hand, supplied a limited range and quantities of livestock inputs. This can also be attributed to the location of these districts in terms of distance to Kampala and agro-ecological potential.

It is important to note, however, that all agro-vet shops visited in the six districts stocked at least one type of insecticide, especially Decatix®, Spoton®, Tsetse Tick® or Milbitraz® and at least one type of trypanocidal drug (Samorin® and Diminaphen®). This is an indication that tsetse and tick control are being addressed in the region. FITCA has taken great strides in availing tsetse and trypanosomosis control technologies to farmers in high-risk areas in all the six districts visited through district veterinary department. The FITCA interventions, however, are meant to bring down tsetse challenge and disease and allow the farmers to take over control in the long run through community-based programmes. With all districts having acaricides and trypanocidals stocked in agro-vet shops, farmers should be able to fight the tsetse and trypanosomosis problem, which will in turn lead to increased agricultural production.

Table 2.3 The demand and supply situation of main agricultural inputs in selected six districts in South Eastern Uganda. (2003)

District	Main inputs used	Demand for inputs	Main suppliers	Constraints
Soroti	Improved seed (maize, soya bean, g/nuts & sunflower) Fertilizers, Herbicides, Pesticides, Animal traction; Acaricides, antibiotics, trypanocides, dewormers, improved breeds (cattle, pigs, goats and chicken)	High for maize & sunflower seed Low for fertilizers herbicides and pesticides Moderate use of animal traction; Low for most livestock inputs	Private stockists (3 in Soroti town – 2 run by vets 1 run by businessman), NGOs like SODIFA, UOSPA, SOCADIDO, and government (NAADS, PMA).	Farmers: Lack of information about need for use, source and quality of inputs; Lack of stockists in rural areas; High input prices; Stockists: Distance to Kampala, seasonal demand, low capital.
Busia	Improved seed (Maize, cassava, fruits, g/nuts) Fertilizers, Herbicides, Pesticides, Animal traction; Acaricides, antibiotics, trypanocides, dewormers, improved animal breeds	High for maize seed Low for fertilizers herbicides and pesticides Low use of animal traction; Low for most livestock inputs	Private stockists (3 in Busia town, 2 run by vets 1 run by businessman, none stocks seed) ' Farmers' associations, NGOs, and government	Farmers: Lack of information about need for use, source and quality of inputs; Lack of stockists in rural areas; High input prices; Stockists: Distance to Kampala, seasonal demand, low capital.
Bugiri	Improved seed (Maize, coffee & cotton) Fertilizers, Herbicides, Pesticides, Animal traction; Acaricides, antibiotics, trypanocides, dewormers, feeds	High for maize & cotton seed Low for fertilizers herbicides and pesticides Moderate use of animal traction; Low for most livestock inputs	Private stockists (4 in Bugiri town, all run by businessmen, 11 others in rural areas), Farmers' associations, SG 2000, CDO, UCDA, and government	Farmers: Lack of information about need for use, source and quality of inputs; Lack of stockists in rural areas; High input prices; Stockists: Distance to Kampala, seasonal demand, low capital.
Mayuge	Improved seed (mainly maize, coffee & cotton) Fertilizers Herbicides, Pesticides Acaricides, antibiotics, trypanocides, dewormers	High for maize, cotton, & coffee seed Low for fertilizers herbicides and pesticides Low use of animal traction; Low for most livestock inputs	Private stockists (3 in Mayuge town, 2 run by vets 1 run by businessman, 6 others in rural areas), farmers' associations, Africa 2000, UCDA, CDO, ADRA and government	Farmers: Lack of information about need for use, source and quality of inputs; Lack of stockists in rural areas; High input prices; Stockists: Distance to Kampala, seasonal demand, low capital.
Kamuli	Improved seed (maize, sorghum, Cassava, cotton, & coffee), Fertilizers, Herbicides, Pesticides, Animal traction; Acaricides, antibiotics, trypanocides, dewormers, improved breeds	High for maize, cotton & coffee seed Low for fertilizers herbicides and pesticides Low use of animal traction; Low for most livestock inputs	Private stockists (7 in Kamuli town, 10 others in rural areas) Farmers' associations, SG 2000, IDEA, CDO, UCDA and government	Farmers: Lack of information about need for use, source and quality of inputs; Lack of stockists in rural areas; High input prices, adulteration; Stockists: Seasonal demand, low capital.
Mukono	Improved seed (maize, beans, vanilla, coffee, cassava) Fertilizers Herbicides, Pesticides Animal traction; Acaricides, antibiotics, trypanocides, dewormers, animal feeds, improved breeds (cattle, goats and Chicken)	High for maize, beans, coffee and vanilla seed. Relatively high for fertilizers and herbicides. Very low for animal traction, relatively high for animal drugs and feeds.	Private stockists (5 in Mukono town, more than 10 scattered in rural areas), Farmers' associations, NGOs, UCDA and government	Farmers: Lack of information about need for use, source and quality of inputs; Lack of stockists in rural areas; High input prices, adulteration; Stockists: Seasonal demand, low capital, competition.

2.4 Demand for Agricultural Inputs

2.4.1 Demand for Crop Inputs

Data was collected from at least one crop and livestock input supply shop to assess the demand for inputs basing on their sales turnover. This was supplemented by data gathered from community focus group discussions (FGD) and discussions with districts officials (DO) (Table 2.6). Both consultations generally revealed similar information about the level of use of inputs. Improved seeds and acaricides are the most highly used crop and livestock production inputs respectively. There were, however, minor discrepancies on the level of used of the specific inputs as portrayed by FGD and DOs but these could be ignored as purely methodological.

Table 2.4 Level of inputs use as revealed during community focus group discussions (FGD) and meetings with district officials (DO)

District	% of households using improved seed		% of households using fertilizers		% of households using herbicides		% of households using pesticides		% of households using acaricides		% of households using feed supplements	
	FGD	DO	FGD	DO	FGD	DO	FGD	DO	FGD	DO	FGD	DO
Soroti	40	30	8	5	5	5	5	3	65	70	10	8
Busia	30	25	5	5	0.5	1	2	2	65	70	5	3
Bugiri	45	30	1	2	1	2	2	2	75	70	8	5
Mayuge	40	30	0.5	0.5	0.5	0.5	0.3	0.2	55	60	5	7
Kamuli	60	65	8	5	5	8	5	5	70	75	15	10
Mukono	75	60	15	10	10	15	10	15	100	95	25	30

Based on seasonal stock turn over, the most highly demanded and utilized crop input was seed, especially maize seed (Tables 2.7 – 2.92). Farmers showed particular interest for Longe 1 as compared to Hybrid maize variety. This preference is specifically price related, as a kilo of Longe 1 goes on average for 1,200 Shs, while Hybrid maize goes for 2,500 Shs. Faced with a trade-off of income saving by planting low price seed and losing income due to low yield potential of Longe 1, farmers in all districts tended to overlook the high yield potential of Hybrid maize. The stockists visited sold an average of one ton of maize seed each planting season, with highest demand being in Soroti where Soroti District Farmers' Association sold over two tons of Longe 1 in the first season of the 2003.

Table 2.5. Annual Sunflower and Soybean seed sales from 1997 – 2000 by UOSPA (metric tonnes)

Seeds type	1997	1998	1999	2000
Sunflower	0.79	1.94	5.726	8.67
Soybean	-	0.04	0.508	2.99

Source: UOSPA, Soroti District, Sales records

Table 2.6 Crop input sales for SODIFA for May 2003, Soroti District.

Input	Qty stocked	Source	Delivery	Qty sold	Unit Price	Main buyers
Maize seed Longe 1	2,000 kg	K'la	Stockist	1,200	1,200	Farmers
Bean seed	750 kg	K'la	Stockist	500	1,200	Farmers
DAP fertilizer	750	K'la	Stockist	500	1,000	Farmers
UREA	750	K'la	Stockist	600	1,000	Farmers
SSP	750	K'la	Stockist	500	1,000	Farmers
Pesticides	27 litres	K'la	Stockist	6	7,000	Farmers
Herbicides	80 Sachets	K'la	Stockist	26	4,000	Farmers
Rice seed	800 kg	K'la	Stockist	800	1,000	Farmers
Groundnut seed	2,000 kg	K'la	Stockist	1750	3,500	Farmers

Demand for fertilizers, herbicides and pesticides was found to be low in all the districts as revealed by the stockists. The demand is low despite the fact that on-farm demonstration trials have been established in most districts to show the importance of these inputs. The highest sales of 10 tons of DAP by a single shop was recorded in Kamuli district (Table 2.91), while the lowest (200 kg) was in Mayuge District for the first season of 2003 (Table 2.8). In Soroti, stockists sold an average of 500 kg of DAP fertilizer in the first season of 2003 (Table 2.5), while in Bugiri stockists sold an average of 500kg for the first season of 2003 (Table 2.6). Similarly, in Mukono District, demand for fertilizers was high, but stockists did not reveal specific amounts citing suspicion of taxation.

The main users of fertilizers in all districts were mainly large-scale maize growers who constitute a very small percentage of the farming households. The demand and utilization of pesticides and fungicides was almost uniform in all districts and users were mainly cotton, vegetable and fruit growers. The small-scale farmers do not use fertilizers, and this is affecting their yields especially those planting improved seeds with expectations of high yields. In Busia District, the demand for fertilizers, herbicides and pesticides was low for the first season of 2003 as revealed from the community focus group discussions. The group discussion was the only source of information since none of the agro-vets shops stocked fertilizers, herbicides and pesticides.

From information gathered during the community focus group discussions, farmers generally believe their soils are still fertile, and hence seem not to appreciate the need for fertilizers. Others have negative attitudes about fertilizers and associate them with soil degradation. The few farmers who have applied fertilizers reported low yields for subsequent seasons mainly because of inconsistent application methods, leading to yield

Table 2.7 Crop input sales for Idha Tugye Farm Agency in Bugiri for the Month of July 2003.

Input	Qty at beginning of month	Source	Delivery	Qty sold	Unit Price	Main Buyers
Fungicide (Mancozeb)	500 kg	K'la	Stockist /supplier	500 Kg	7,000	Farmers, retailers
Cypermethrin Insecticide	100 litres	K'la	Stockist /supplier	75 litres	9,000	Farmers, retailers
Dimethoate Insecticide	50 litres	K'la	Stockist /supplier	40 litres	12,000	Farmers, retailers
Maize seed (Longe I)	1000 kg	K'la	Stockist /supplier	1000 kg	1,200	Farmers, retailers
Maize (Hybrid)	500 kg	K'la	Stockist /supplier	500 kg	2,500	Farmers, retailers
Fertilizer (DAP)	500 kg	K'la	Stockist /supplier	500 kg	900	Farmers, retailers
Fertilizer (Urea)	100 kg	K'la	Stockist	100 kg	800	Farmers, retailers
Nematicide (Furacarb)	40 kg	K'la	Stockist	30 kg	600	Farmers, retailers
Pesticide (Malathion)	10 Dozens (400 gm)	K'la	Stockist	10 Doz	1,200	Farmers, retailers
Round-up	20 litres	K'la	Stockist	20 litres	15,000	Farmers, retailers
Herbicide (Butanil)	40 litres	K'la	Stockist /supplier	40 litres	15,000	Farmers, retailers
Cabbage seed	400 tins (50 gm)	K'la	Stockist /supplier	300 tins	2,000	Farmers, retailers
Tomato seed	100 tins (50 gm)	K'la	Stockist /supplier	80 tins	6,500	Farmers, retailers
Water melon seed	100 tins (50 gm)	K'la	Stockist /supplier	40 tins	4,000	Farmers, retailers
Knapsack sprayer (15 l)	5 Pcs	K'la	Stockist /supplier	5 Pcs	75,000	Farmers, retailers

Source: Idha Tugye Farm Sales Records

Table 2.8. Crop Input sales for the month of July 2003 for MK Farm Supply Shop in Mayuge istrict.

Input	Qty stocked	Source	Delivery	Qty sold	Unit Price	Main buyers
Maize seed Longe	400 kg	K'la	Stockist	350	1,200	Stockist
Cabbage seed	30 tins (50 gm)	K'la	Stockist	20	2,500	Farmers
Tomato seed	3 tins (50 gm)	K'la	Stockist	3	6,500	Farmers
Water Melon seed	10 tins (50 gm)	K'la	Stockist	5	4,500	Farmers
Onion seed	5 tins (50 gm)	K'la	Stockist	2	4,000	Farmers
Indofil M45 fungicide	40 sachets	K'la	Stockist	30	1,700	Farmers
Cyperlacer insecticide	20 tins (200 ml)	K'la	Stockist	15	1,300	Farmers
Malathion dust	12 Bottles	K'la	Stockist	12	1,000	Farmers
Emthane M45 fungicide	40 Pcs	K'la	Stockist	30	1,500	Farmers
Round up herbicide	4 bottles (1 litre)	K'la	Stockist	3	15,000	Farmers
Mamba herbicide	4 Bottles (1 litre)	K'la	Stockist	2	14,000	Farmers
DAP fertilizer	200 kg	K'la	Stockist	200	900	Farmers
UREA fertilizer	200 kg	K'la	Stockist	200	700	Farmers
Rapid Gro fertilizer	5 Bottles (250 ml)	K'la	Stockist	5	4,500	Framers

Source: MK Farm Supply Shop Records.

Table 2.9. Crop input sales for the month of July, 2003 for Kamuli Agriculture Shop, Kamuli District.

Input	Qty stocked	Source	Delivery	Qty sold	Unit Price	Main buyers
Maize seed Longe	2,000 kg	K'la	Stockist	2,000	1,200	Farmers
Cabbage seed	100 tins (50 gm)	K'la	Stockist	50	2,000	Farmers
Tomato seed	100 tins (50 gm)	K'la	Stockist	50	7,000	Farmers
Water Melon seed	30 tins (50 gm)	K'la	Stockist	10	4,000	Farmers
Onion seed	30 tins (50 gm)	K'la	Stockist	10	3,000	Farmers
Egg plant seed	10 tins (50 gm)	K'la	Stockist	5	3,000	Farmers
Dimethoate insecticide	12 Bottles (I litre)	K'la	Stockist	6	12,000	Farmers
Malathion dust	24 bottles (400 gm)	K'la	Stockist	12	1,300	Farmers
Dithane M45 fungicide	30 kg	K'la	Stockist	20	10,000	Farmers
Round up herbicide	10 litres	K'la	Stockist	10	14,000	Farmers
Rapid Gro fertilizer	12 litres	K'la	Stockist	12	4,000	Farmers
Knap sack sprayer	5 pcs (15 litre)	K'la	Stockist	3	35,000	Farmers
Watering can	10 pcs	K'la	Stockist	10	6,000	Farmers

Source: Kamuli Agriculture Shop Sales Records.

Table 2.10 Fertilizer sales for the month of July 2003, for *Kamuli Farmers' Centre, Kamuli District.

Input	Qty stocked	Source	Delivery	Qty sold	Price/kg	Main buyers
DAP	10 tons	K'la	Supplier	10	800	Farmers, NGOs
TSP	1.2 tons	K'la	Supplier	1	750	Farmers
SSP	1 ton	K'la	Self	0.5	750	Farmers
UREA	10 tons	K'la	Supplier	9	750	Farmers, NGOs

Source: Kamuli Farmers' Centre Sales Records. * Deals in only fertilizers.

Table 2.11 Crop inputs stocked by Kintu Agro, August 2003, Mukono District.

Input	Qty stocked	Source	Delivery	Qty sold	**Unit Price	Main buyers
Maize seed Longe	5,000 Kg	K'la	Stockist	4,500		Farmers
Bean seed	3,500 Kg	K'la	Stockist	3,500		Farmers
Cabbage seed	200 tins (50gm)	K'la	Stockist	100		Farmers
Tomato seed	200 tins (50gm)	K'la	Stockist	120		Farmers
Water Melon seed	100 tins (50gm)	K'la	Stockist	75		Farmers
Spinarch seed	150 tins (50gm)	K'la	Stockist	50		Farmers
Red pepper	150 tins (50gm)	K'la	Stockist	80		Farmers
Onion seed	200 tins (50gm)	K'la	Stockist	120		Farmers
Okra	150 tins (50gm)	K'la	Stockist	50		Farmers
Egg plant seed	150 tins (50gm)	K'la	Stockist	80		Farmers
Dimethoate insecticide	12 Bottles (I litre)	K'la	Stockist	8		Farmers
Malathion dust	48 bottles (400 gm)	K'la	Stockist	20		Farmers
Dithane M45 fungicide	4830 kg	K'la	Stockist	15		Farmers
Round up herbicide	20 litres	K'la	Stockist	10		Farmers
Rapid Gro fertilizer	24 litres	K'la	Stockist	20		Farmers
Knap sack sprayer	10 Pieces (15 Litre)	K'la	Stockist	10		Farmers
DAP	12 Tonnes	K'la	Supplier	8 tonnes		Farmers
NPK	5 Tonnes	K'la	Supplier	2 tonnes		Farmers
UREA	5 Tonnes	K'la	Supplier	3 tonnes		Farmers
Watering can	50 Pieces (10 litre)	K'la	Stockist	15 Pieces		Farmers

Source: Kintu Agro, August 2003.

**Did not reveal sales and price.

uncertainty and risk of losses. Due to risk averseness, farmers tend to opt for natural farming practices with low uncertainty instead of improved practises with high yield uncertainty.

2.4.2 Demand for Livestock Inputs

In general, the demand for livestock inputs was found to be much lower than that for crop inputs basing on agro-vet shop sales records. This arises from the fact that crop production is more predominant than livestock production as an economic activity in south-eastern Uganda. Even in Mukono District, with the highest proportion of grade animals in all the six districts, stockists were not satisfied with the demand for livestock inputs. This, however, can be attributed to the fact that some farmers in Mukono prefer to purchase their inputs from wholesalers in Kampala.

Table 2.12 Animal drug sales for the month of July 2003 for SDB farm supplies, in Busia Town.

Input	Qty stocked	Source	Delivery	Qty sold	Price	Main buyers
Vegetable seeds	24 sachets	K'la	Stockist	20	1000	Farmers
Poultry vitamin	30 packets	K'la	Stockist	5	3000	Farmers
Decatix	10 sachets (10mls)	K'la	Stockist	10	1000	Farmers
Spoton	24 bottles (200mls)	K'la	Stockist	13	12000	Farmers
Samorin	10 one dose sachets	K'la	Stockist	10	2000	Farmers
Diminaphene	50 sachets	K'la	Stockist	50	1000	Farmers
Ascarex	10 packets	K'la	Stockist	5	1500	Farmers
S-dime	50 tablets	K'la	Stockist	50	400	Farmers
Wormicid	60 tablets	K'la	Stockist	45	500	Farmers

Source: SDB farm supplies sales records

Table 2.13 Livestock input sales for the Idha Tugye Farm Agency in Bugiri for the month of July 2003

Input	Qty stocked	Source	Delivery	Qty sold	Price	Main buyers
Supona	12 Bottles (200 mls)	K'la	Stockist	8 bottles	15000	Farmers
Tsetse tick	24 bottles (250 mls)	K'la	Stockist	15 bottles	17000	Farmers
Amitix	80 Pcs (200 mls)	K'la	Stockist	60 pcs	4000	Farmers
Decatix	200 Pcs (10 mls)	K'la	Stockist	100 Pcs	1500	Farmers
Alfapor	40 Pcs (100 mls)	K'la	Stockist	30 Pcs	5500	Farmers
Milbitraz	20 Pcs (500 mls)	K'la	Stockist	10 Pcs	15,000	Farmers
Wormicid	10 Bottles (1 litre)	K'la	Stockist	5 Bottles	6500	Farmers
Wormicid	20 Pkts (1g tablets)	K'la	Stockist	15 Pkts	10,000	Farmers
Levafas	72 bottles (250 mls)	K'la	Stockist	60 Bottles	3000	Farmers
Albendazole	40 Bottles (100 mls)	K'la	Stockist	40 Bottles	4000	Farmers
Salt lick	5 cartons (100 kg)	K'la	Stockist	4 cartons	1000	Farmers

Source: Idha Tugye Farm Agency sales records

Table 2.14. Livestock Input sales for the month of July 2003 for Bunya Modern Farmer in Mayuge District.

Input	Qty stocked	Source	Delivery	Qty sold	Price	Main buyers
Decatix	24 Pcs (200 ml)	K'la	Stockist	5	17,000	Farmers
Tsetse tick	5 Pcs (250 ml)	K'la	Stockist	5	16,000	Farmers
Supona	5 Pcs (200 ml)	K'la	Stockist	5	15,000	Farmers
Spoton	1 Pc (200 mls)	K'la	Stockist	1	12000	Farmers
Samorin	10 Sachets	K'la	Stockist	5	2000	Farmers
Diminaphene	10 Sachets	K'la	Stockist	6	1000	Farmers
Ascarex	20 packets	K'la	Stockist	10	1500	Farmers
Levafas	2 Bottles (1litre)	K'la	Stockist	1	13,000	Farmers
Levoxy	1 Bottle (1 litre)	K'la	Stockist	0.5	16,000	Farmers
Oxytetra 200	10 Sachets	K'la	Stockist	7	*N/A	Farmers
Wormicid	25 Boluses	K'la	Stockist	25	500	Farmers
Poultry vitamin	15 Sachets	K'la	Stockist	10	3000	Farmers
Cotton seed cake	3 Bags (100 kg)	Iganga	Stockist	3 Bags	*N/A	Farmers
Sun flower cake	3 Bags (100 kg)	Iganga	Stockist	3 Bags	N/A	Farmers
Bone meal	1 Bag (100 kg)	Iganga	Stockist	1 Bag	N/A	Farmers
Fish meal	2 Bags (100 kg)	Iganga	Stockist	2 Bags	N/A	Farmers

Source: Bunya Modern Farmer Sales Records. * Price not revealed

Acaricides were the most highly demanded inputs in all districts, with strong preference being shown for Amitix® and Supona®, specifically for tick control. Again, this preference is price related and not efficacy related. For tsetse control, farmers tend to prefer Decatix® as compared to Spoton®, most likely because of the application method, rate and costs. A 200 ml bottle of both acaricides costs almost the same price, but the 200 ml of Decatix® when diluted can treat up to 80 heads of cattle while the same amount of Spoton® will only treat about 5 heads of cattle. As a result, agro-vet shops stock very limited quantities of Spoton® compared to other insecticides. It was also observed that farmers prefer inputs packed in small, and therefore affordable quantities. Similarly, agro-vet shops tended to stock more of inputs packed in small quantities in response to farmers' preference.

In all the districts, farmers in some villages are operating communal crushes for the control of tsetse flies with support from FITCA. Under this arrangement, farmers contribute money ranging from 100 – 400 Shs. per animal treated. The money collected is then used to replenish the acaricide and to make any required repairs on the crush or pump. The approach seems to be working well in some districts, except that farmers contributing less than 200 shs are finding it difficult to replenish the acaricide.

Table 2.15. Livestock Input sales for July 2003 for Kamuli Farmers Shop, Kamuli District.

Input	Qty stocked	Source	Delivery	Qty sold	Unit Price	Main buyers
Tsetse tick	10 bottles (250 mls)	K'la	Coopers	10	17,000	Farmers
Decatix	100 sachets (10 ml)	K'la	Coopers	50	1,500	Farmers
Spton	5 Bottles (200 ml)	K'la	Coopers	3	15,000	Farmers
Milbitraz	50 Bottles (100 ml)	K'la	Stockist	50	3,600	Farmers
Bayticol	50 Bottles (100 ml)	K'la	Stockist	35	6,000	Farmers
Samorin	15 Sachets (10 doze)	K'la	Stockist	5	10,000	Farmers
Diminaphen	500 sachets (1 doze)	K'la	Stockist	50	800	Farmers
Levoxy	50 Bottles (125 mls)	K'la	Stockist	40	2,700	Farmers
Levoxy	15 Bottles (1 litre)	K'la	Stockist	8	16,000	Farmers
Wormicid	10 Bottles (1 litre)	K'la	Stockist	7	7,000	Farmers
Oxytetra injectable	30 sachets (30 gm)	K'la	Stockist	30	3,500	Farmers
New Castle Vaccine	5000 dozes	K'la	Stockist	3000	10	Farmers
Poltricin chick formula	50 Sachets (50 gm)	K'la	Stockist	40	800	Farmers
Vitastress Poultry vit	5 Packets (250 gm)	K'la	Stockist	2	12,000	Farmers
Contromycin Poultry vit	5 Packets (200 gm)	K'la	Stockist	2	N/A	Farmers
Fuzol Poultry drug	50 sachets	K'la	Stockist	30	700	Farmers
Gomboro Chicken vaccine	2000 dozes	K'la	Stockist	1200	20	Farmers
Ascarex poultry dewormer	20 Sachets (30 gm)	K'la	Stockist	12	1,300	Farmers
Lanodip Mastitis control	5 litres	K'la	Stockist	1	10,000	Farmers

Source: Kamuli Farmers Shop Sales Records.

Table 2.9.7 Livestock inputs sales for CMS Agro-vet Shop for July, 2003, Mukono District.

Input	Qty stocked	Source	Delivery	Qty sold	Unit Price	Main buyers
Decatix	24 bottles (200 ml)	K'la	Coopers	6	17,000	Farmers
Spton	24 bottles (200 ml)	K'la	Coopers	2	13,500	Farmers
Bimitraz	12 bottles (200 ml)	K'la	Quality Chemicals	4	5,000	Farmers
Tsetse tick	24 bottles (250 ml)	K'la	Quality Chemicals	6	17,500	Farmers
Bayticol	12 bottles (200 ml)	K'la	Stockist	2	16,000	Farmers
Bliztdip	12 bottles (200 ml)	K'la	Stockist	1	13,000	Farmers
Milbitraz	12 bottles (200 ml)	K'la	Stockist	12	4,000	Farmers
Taktik	12 bottles (100 ml)	K'la	Quality Chemicals	2	5,000	Farmers
Amitix	12 bottles (250 ml)	K'la	Stockist	1	8,000	Farmers
Supona	12 bottles (250 ml)	K'la	Stockist	1	14,000	Farmers
*Samorin		K'la	Stockist			Farmers
*Diminaphen		K'la	Stockist			Farmers
*Ethidium		K'la	Stockist			Farmers
Levoxy	12 bottles (125 ml)	K'la	Stockist	12	4,000	Farmers
Levafas	12 bottles (125 ml)	K'la	Stockist	12	3,000	Farmers
Albendazole	12 bottles (125 ml)	K'la	Stockist	12	4,000	Farmers
Oxytetra injectable	60 Sachets	K'la	Quality Chemicals	12	8,000	Farmers
Erythromycin (Poultry drug))	12 Sachets	K'la	Stockist	12	3,500	Farmers
Ancomycin (Poultry drug)	20 Sachets	K'la	Quality Chemicals	5	5,500	Farmers
Nioceryl (Poultry drug)	12 Sachets	K'la	Stockist	8		Farmers
Coci-plus Poultry Vit	12 Sachets	K'la	Stockist	4	4,500	Farmers
Ampro-sul (Poultry drug)	12 Sachets	K'la	Stockist	5	7,000	Farmers
OTC Poultry Vit plus	24 Sachets	K'la	Quality Chemicals	8	4,500	Farmers
Layers marsh	6 Bags (70 kg)	K'la	Stockist	6	22,000	Farmers
Growers marsh	6 Bags (70 kg)	K'la	Stockist	6	22,000	Farmers
Broiler march	6 Bags (70 kg)	K'la	Stockist	6	22,000	Farmers
Salt lick	24 Pcs	K'la	Stockist	5	3,500	Farmers
Dairy meal	6 Bags (70 kg)	K'la	Stockist	6	17,000	Farmers

Source: CMS Agro-vet Shop, August 2003.

*Did not reveal sales and price.

The other livestock inputs demanded by farmers include cattle dewormers, cattle feeds, and poultry drugs and feeds. Poultry drugs and feeds were on relatively higher demand especially in Mukono and Kamuli districts, where poultry keeping is a major farming enterprise. In other districts, demand for poultry inputs was not as high mainly because birds are kept on free range.

2.5 Constraints faced in procurement and supply of agricultural inputs

2.5.1 Farmer constraints

Farmers mentioned a wide range of constraints they face in accessing agricultural inputs. Below are the most frequently cited constraints listed in order of importance.

- High input prices – farmers in all the six districts complained about the high inputs prices and low output prices. The combined effect of this price imbalance is that farmers who are largely producing for home consumption are unable to purchase inputs.
- Poverty – high poverty levels have meant that farmers are forced to prioritise their expenditures. In most cases, they have immediate and more pressing needs so that instead of ploughing back some of the income from farming into purchase of inputs, all the money is spent on other household needs. The expectation that government should provide free or heavily subsidized inputs is still lingering in peoples' minds.
- Lack of agro-vet shops in rural areas – farmers have to travel up to 10km or more to purchase inputs. This compounds the problem of high costs of inputs.
- Inadequate market information systems – farmers lack information about source, price and quality of inputs. The drive towards privatisation of delivery of agricultural inputs and services was based on the assumption that markets are perfect, and that information is freely available to all economic agents. To the contrary, markets are grossly imperfect with

limited availability of information especially to the illiterate farmers. This leads to opportunism on the part of input suppliers, who, in most cases withhold information about the quality of their inputs. Farmers sometimes buy expired drugs and later complain that the drugs are not working.

- Packaging of products – Products are in most cases packed in large and expensive quantities. However, most farmers prefer products packed in small and hence affordable sizes.

2.5.2 Stockists' constraints

Stockists mentioned a wide range of constraints they face in procurement and selling of agricultural inputs. Below are the most frequently cited constraints listed in order of importance.

- Low and seasonal demand for inputs – demand for most inputs, especially crop inputs, is seasonal meaning that for certain periods of the year sales are low. Even in the growing season, demand is not high as very few farmers can afford to purchase inputs. The result of these two problems is that prospects of expanding businesses and therefore extending services to rural areas are very limited.
- Distance to source of inputs – most retail stockists obtain inputs for their shops from wholesalers in Kampala. Since most of them purchase in small quantities, they have to transport their stock to their respective destinations. This is a big constraint to stockists in distant districts and rural locations.
- Taxes – drug shop operators are required to pay Ushs.120, 000/= to the National Drug Authority as license fees, Ushs. 100,000/= to in the Inland Revenue Department and Ushs. 50,000/= to the Town Council. Given the low sales, agro-vet operators see these fixed taxes as prohibitively high.

- Shortage of inputs – stockists sometimes fail to get some of the inputs needed by farmers from wholesalers in Kampala. This problem is common especially with inputs packed in smaller quantities because wholesalers run short of them due to high demand. Stockists of maize seed often run short of stock due to high demand and inconsistent supply from research stations.

2.5 Conclusion

From this study it was observed that potential demand for agricultural inputs is high given the large number of households engaged in agriculture in the region. However, low demand for inputs resulting from low household incomes coupled with limited awareness of farmers about the need to use inputs have constrained the level of agro-vet input supply business. This implies that very few private businessmen are willing to invest in input supply business, especially in rural areas. As is typical of third world economies, this situation of market failure only serves to compound the problem of low agricultural output, low incomes and unending poverty and hence calls for urgent government intervention. The problem stems from the fact that the government policy of liberalizing agricultural and veterinary input supply was not followed by appropriate measures to handle the transition. Below are some recommendations on how this problem could be overcome.

2.6 Recommendations

These recommendations are mainly aimed at helping farmers access inputs with less difficulty.

- Cost recovery – because of budgetary resource constraints, government cannot assure the regular delivery of inputs and because of poor incomes farmers are unable to purchase inputs. It may, therefore, be necessary to apply cost recovery as a way of financing sustainable services with government and/or private providing the initial inputs. Cost recovery offers an opportunity for a gradual shift from subsidization of services to full privatisation. A noteworthy example is IFAD's successful experience

in the Central African Republic, where the implementation of full cost recovery was instrumental in increasing the availability of drugs. A highly positive correlation was established between the introduction of full cost recovery and drug availability.

- Revolving funds – in conjunction with cost recovery programmes government should encourage establishment of revolving funds at community level. Government would then place revenues obtained from the sale of inputs (such as drugs) and the use of facilities (such as dips and crushes) into revolving funds to ensure that sufficient funds will be available for the services to be supplied. To manage funds successfully, however, farmers will need training to improve their management, technical, financial and procurement skills. This approach produced promising results in Sudan with IFAD support.
- Technical support - there should be efforts to promote and provide technical support to traditional groups and training initiatives. This is currently being explored by NAADS. For example, districts can train community animal and crop husbandry workers and deploy them in rural areas to increase awareness and promote attitudinal change.
- Farmers' input shops – it also important to encourage the establishment of farmers' associations that supply agricultural inputs. For example, Soroti District Farmers' Association is doing very well in supplying inputs. Since these associations are run by farmers, they can demand for delivery of better services rather than relying on private and often unprofessional stockists.
- Quality control and market information systems – there is need for government to strengthen the existing measures for input quality control. This would greatly help farmers especially since they lack information about quality of inputs. Market information systems also need to be strengthened. Market information cannot be adequately delivered by the private sector given the public good nature of such information.

Government can take advantage of the mushrooming FM radios to disseminate market information on inputs sources, prices, quality and application methods.

SECTION THREE

3.0 Storage and Processing of Agricultural Products in South Eastern Uganda

3.1 Introduction

Storage and processing of agricultural products have strong implications for food security, value addition and marketing. Traditional storage and processing facilities of agricultural produce exist in the region, and are mainly aimed at ensuring food preservation to increase shelf life of the food products for food security for the household and not for commercial purposes. This is because the majority of farmers produce at subsistence level mainly for home consumption and not at commercial levels.

Commercial storage for specific crops namely maize and beans existed under the Produce Marketing Board and its country network of depots prior to the enactment and implementation of the privatisation, liberalisation and divestiture policies. Implementation of these policies led to liberalised produce marketing where the private sector has taken the leading role in all marketing aspects and activities including purchasing and bulking, transportation, storage and selling. In addition, the collapse of the Cooperative arrangement saw producers starting to store and sell their produce individually, a shift from earlier joint operations under the Cooperative Movement. With these developments, use of the aforementioned commercial storage facilities by the farmers progressively dwindled and the storage structures have continued to dilapidate while denying the producers access to appropriate storage.

3.2 Storage and Processing Practices

3.2.1 Storage Practices

Storage practices in the region encompass a wide range of primary activities, differing from one crop to another, but in most cases simple and basic. Similarly, storage practices for similar products do not vary across the six study districts, and are mainly done at household level. No joint or communal storage was reportedly practiced at the community level. The following are the salient diverse storage practices for the major crops in all the districts.

Grains from the field are first dried on the ground after which they are put in bags and sacks and placed in the residential houses. In most cases, however, farmers store their dry grains on bare floors of their huts/houses.

During storage, some farmers apply indigenous knowledge to control storage pests. For example, ash is mixed with maize and beans to control weevils. Mixing dust with beans and residues from the threshed beans controls weevils, while Neem tree extracts are used to preserve grains against insects. Few farmers reportedly used pesticides like malathion to control storage pests.

Root tubers, especially cassava and sweet potatoes, are first split into chips and left in the sun to dry after which they are also stored in the same residential houses with other produce.

For livestock and livestock products, no storage processes were reportedly undertaken as most of them were either sold or consumed in their raw/unprocessed form. Fish is first treated using different methods for the different species prior to storage. Lungfish for example is first cleaned, eviscerated and smoked while *Rastrineobola* species “mukene” are sun-dried, placed in baskets and then stored within the residential houses.

3.2.2 Processing Practices

Processing of crop produce

There is no elaborate agro-processing done in the region. At household level agro-processing is very limited as in most cases food crops are consumed fresh from the field, while the surplus is sold to produce buyers. Across the six districts, processing practices are generally similar for similar crops.

After harvesting, grains are left to dry in the sun, either on mats, or in most cases, on bare ground. After drying, they are put in bags and placed in the residential houses for storage. Maize, millet and sorghum, and to some extent coffee, are similarly treated and stored in this manner.

Still at household level, only primary processing is done for dried crops. Activities involved include shelling of groundnuts and maize, threshing of millet and sorghum and then rice hulling, followed by winnowing and cleaning. Dried cereals especially maize, sorghum and millet are milled in towns and trading centres for both home consumption and trade. In most areas millet flour is commonly commercially used for local brew. Hulled rice is also commonly refined for both the market and home consumption.

The sorghum variety called *epuripur* is progressively gaining prominence as it is commercially produced, especially in Soroti and Kamuli, on contract for Nile Breweries for beer brewing. The harvested and dried seed is bought, transported and stored by Nile Breweries on terms and conditions mutually agreed upon between Nile Breweries and the contract farmers. The major processing of this sorghum variety therefore is beer brewing, which presents a high potential for poverty eradication and food security of the farmers and entire population living in the area.

For oil crops like sunflower, the dried crops are sold to processing companies through Uganda Oil Seed Producers Association (UOSPA). Mukwano industries are the main buyers and processors of oil seeds.

Processing of Livestock Products

Live animals, meat and meat products

Farmers sell most of the animals live to livestock dealers, traders and butchers for slaughter in gazetted areas mainly located in trading and urban centres. One prominent farmer in Kamuli however breeds and sells breeding cattle in addition to selling culls and steers for beef within the region.

Milk and dairy products

Storage and processing of livestock products are very uncommon in the region, probably because livestock production is not a major economic activity. Small scale processing of milk exists only in Kamuli and Mukono towns. Some of the milk is pasteurised, homogenized, and packed for sale. In Kamuli in particular, one prominent farmer

pasteurises, packs and sells milk within the Eastern Region. The farm however operates sub-optimally, as only 2500 lts of milk is pasteurised per day compared to its capacity to pasteurise 1000 lts of milk per hour. In Mukono, the processed milk is sold locally and also transported to Kampala, while in Kamuli most of the processed milk is sold locally due to low milk output and associated high transport and marketing costs. In Mukono some of the milk considered excess is processed into yoghurt for the local and Kampala markets.

Hides and Skins

Traders buy hides and skins from homes and abattoirs when they are either dry or fresh. The fresh ones are preserved using salt prior to storage. The process involves placing the hides and skins on a flat surface and then pouring onto them an average of one kilo of salt per hide. Other skins and hides are sun-dried and then piled in the stores prior to dispatch, although the market is increasingly demanding salt preserved ones as they are of higher quality and estimated to stay for more than six months without being spoilt.

Processing of poultry and poultry products

At the commercial farms, birds are dressed prior to their transportation to urban markets. Otherwise, local chicken from the small farmers are sold as live birds in small numbers to either individual consumers or traders who in turn sell them to hotels and individuals in the urban areas.

Fish

Prior to smoking, fish are first eviscerated, cleaned and then stacked in kilns on layers on top of firewood, and then fires lit from below. During the drying, the fish are constantly turned to ensure that they are well dried and do not burn due to excessive exposure to intense heat. Lungfish is often smoked prior to cooking, while some fish especially *Rastroniobola* species “mukene” is sun-dried on a small-scale artisanal level, especially near or at the landing sites.

3.3 Storage and Processing Infrastructure

3.3.1 Storage Infrastructure

Storage Infrastructure for crop produce

Storage infrastructure is generally poorly developed in all the six districts. At household level storage is mainly done for food security and not for commercial purposes. The study observed that in all the six districts, storage infrastructure is basically similar but with the following worth noting:

Some granaries exist in the rural areas at household level as traditional storage structures for cereals especially millet and other grains. However, farmers have largely stopped the practice of storing in these structures as cases of food thefts from the granaries are increasingly becoming rampant.

Most farmers store their produce in bags and sacks while others use pots and plastic jerry cans to store their produce especially cereals within their residential houses/huts. This puts to question the quality of the product especially due to poor aeration. In addition the practice is unhygienic for the people dwelling in those houses/huts considering that different products and live animals such as chicken share the same houses with their owners.

No communal storage structures or any other forms of storage infrastructure exist at the community level. In Soroti, however, UOSPA has organized farmers into groups with communal stores. Under the arrangement, farmers collect all their produce at the communal stores from where UOSPA buys it. In the case of Mayuge, high capacity stores belonging to the defunct farmers' co-operative society exist but are neither available nor accessible for the farmers' utilisation, as there is neither a properly organised system nor enabling arrangement. Interestingly, the stores were being used as private school classrooms instead of agricultural produce storage.

There are some trading centres with privately owned and privately operated commercial stores. These, however, only temporarily store private produce dealers' merchandise

while in transit to other areas. These stores also present a big opportunity for use by farmers when the private owners are not utilising them. At the district level, only big middlemen and produce dealers privately own stores to hold their stocks, a situation that limits most farmers' access to urban markets.

Both the Investment in Developing Export Agriculture (IDEA) project and Sasakawa Global 2000 (SG 2000) have been promoting construction and demonstration of improved storage facilities in the region. In Kamuli, for example, the IDEA project has supported the construction of modern cribs through demonstrations. In the same district, SG 2000 has constructed 128 local and 7 improved granaries. This initiative should be supported and promoted in other districts to improve storage of crop produce by farmers.

Storage of livestock products

Milk and hides/skins are the main livestock products in the region. At household level, milk is mainly stored in plastic containers and to a very limited extent in metal cans as a temporary handling measure because of perishability. Milk coolers and short duration milk collecting centres owned by milk retailers exist in Mukono and Kamuli towns. In other districts, milk vendors move around on bicycles collecting and selling their milk. In the case of Bugiri town, a 2000-litre capacity milk cooler installed in the 1970s is lying idle due to low milk production levels.

Although hides and skins are produced in all the districts, storage infrastructure was only reported in Mukono and Kamuli. In these towns, private dealers own stores where they hold the hides and skins' prior to transporting to Kampala for sale.

Storage of fish

Some fish landing sites have privately owned rooms designed to store 'mukene'. Other fish species such as lungfish are either sold fresh or briefly stored in residential houses/huts prior to their disposal. In the case of Kamuli, storied fish-smoking kilns exist at Bukungu landing site although they are currently not operational as fish catches have continued to appreciably dwindle over time.

3.3.2 Processing Infrastructure

Across the six districts, processing infrastructure for both crops and livestock products is poorly developed. For crop produce the main processing infrastructure consists of maize mills, which also process millet and cassava, and rice hullers. Maize mills exist in all towns and some trading centres of the districts owing to the fact that maize is a major crop in the region. However, the distribution of the mills varies from district to district. High capacity commercial mills are only available in towns that have electricity. In rural areas and especially trading centres, low capacity diesel powered mills exist in almost every sub-county in the six districts for mainly milling grain for home consumption.

Rice hullers on the other hand only exist in rice growing districts like Bugiri, Kamuli and Busia. The biggest rice processing plant is Tilda-Uganda at Kibimba in Bugiri District, which mainly produces and processes rice for export. The factory also greatly benefits many rice out growers in the vicinity by providing them a ready market for their rice.

3.4 Constraints in storage and processing of agricultural products

3.4.1 Storage constraints

A number of storage constraints afflict and affect farmers in different ways. Notable among them are:

- Rampant thefts from granaries, cribs and other storage structures, which have forced farmers to resort to storing produce within their residential houses/huts. This practice is both unhygienic to the house dwellers and detrimental to produce quality.
- Pests and diseases are also a big menace as both field and storage pests of economic importance. Insects, especially weevils and termites and then rodents especially rats, cause untold crop losses if not appropriately checked.
- Due to inadequate storage facilities and fear that the produce would get spoilt in storage, farmers rush to sell most of their produce at the beginning of the harvest season when prices are still relatively high. High financial demands force most farmers to sell most of their produce immediately after harvest when prices have dramatically plummeted. It is estimated that 85% of the produce is sold within

three months after harvest when the prices are lowest, and this is mainly attributed to lack of storage.

- The quality of any produce determines its price. However, the quality of farmers' produce is affected by poor storage facilities such use of polythene bags, which tend to be airtight, a situation exacerbated by the disappearance of good gunny bags.
- Middlemen cheat farmers by employing different tricks ranging from manipulation of weighing scales to offering low prices in rural areas since buyers dictate prices to farmers.
- Lack of information and guidance to farmers on enterprise selection, mix and prioritisation limits farmers' prospects and ability to access markets.
- Lack of regulated marketing especially for cash crops exposes farmers to unfair market conditions. The current situation where government only sets indicative prices with no ceilings for the different products is considered to leave the farmers being exposed and exploited by the dealers, traders and businessmen.
- Inadequate technology and technical skills for storage and agro-processing is another important constraint. Due to this, most farmers sell their produce in an unprocessed form, and with no value added and as such fetches a very low price on the market.

3.4.2 Processing constraints

As earlier mentioned, processing of agricultural products is poorly developed in the six districts. Most of the processing is primary and does not involve standard packaging for commercial purposes. Processed grains like maize and millet and other produce like cassava are packaged in 100kg and 50kg bags mainly for retail selling. Poor development of processing can be attributed to.

- Lack of appropriate technology for agro-processing
- Inadequate power supply in rural areas
- Poor distribution for agro-processing facilities.
- Low surplus for processing since most produce is consumed fresh from the fields.

Poor quality of produce, which in most cases does not meet the required standards for processing.

3.4.3 Constraints associated with fish storage and processing

Fishing is a major economic activity in all the six districts, and is dependant on both natural water bodies and fish ponds. The industry faces the following storage and processing constraints.

- Inadequate transport facilities and equipment prior to processing.
- Firewood scarcity especially in the islands, making artisanal fish processing difficult, costly and environmentally unfriendly.
- High fish processing costs making it expensive.
- Low quality of “mukene” as it’s drying is poorly done on bare ground

3.5 Conclusion and Recommendations

3.5.1 Conclusion

The study has established a number of issues related to agricultural storage and agro-processing, summarised as follows:

At both household and community levels, no elaborate storage infrastructure exists. As a consequence, farmers store their crops of all types and forms in their residential houses/huts pending their consumption and/or disposal. The practice of storing in granaries has reduced as thefts from the granaries increasingly became rampant. In addition, the traditional cribs for maize drying and storage have long been abandoned except for a few isolated areas. As a result this has limited the capacity of farmers to attain and maintain the desired produce quality. In addition, the farmers are forced to sell off their produce immediately at or after harvest when produce prices are very low. This poses a big challenge for the farmers, policy focus/orientation and participation of the private sector and NGOs towards promotion of agricultural storage.

At household level, crop processing is limited to primary processing such as drying, threshing and winnowing, with no value addition performed. This limits the price that can be obtained by the farmer.

Some crops have emerged with high alternative economic potential and prospects. Epuripur sorghum and vanilla are two such crops whose production should be encouraged and enhanced, as their marketing is both assured and lucrative.

All the districts face a situation where farmers want to perform all their storage, processing and marketing operations individually. The smallholder farmers are thus not taking advantage of the few progressive farmers who happen to have well-developed storage and agro-processing infrastructure. This could be because they are allowed or because they are not aware or interested. This not only limits their attainment of economies of scale but also diminishes their chances to expand their performance and operational levels.

For livestock and livestock products, limited storage and processing capacity abounds. This is exemplified by limited gazetted livestock markets, few milk collecting centres and milk coolers among other facilities.

3.5.2 Recommendations on storage and processing

Below are recommendations targeted at the potential stakeholders in storage and agro-processing in different sub-sectors as follows:

Recommendations to Government

- At policy level, steps should be taken to promote storage and agro-processing at all levels right from the household. Where necessary and deserving, deliberate efforts should be made by Government to facilitate the private sector to purchase and avail simple but appropriate agro-processing machinery to farmers on a cost-recovery basis or offer them tax incentives to foster value addition through agro-processing.

- Government in collaboration with NGOs should undertake more sensitisation and training for farmers to help them realise the potential abounding in their midst, where they can utilise existing storage and agro-processing infrastructure at affordable terms. Training them in basic financial management, administration and group dynamics would *inter alia*, help to build their confidence and increase their capacity to tackle the storage and agro-processing issues competently. Modalities for strengthening information sharing, collaboration and networking among the diverse stakeholders should be instituted and enhanced.
- In some of the remote areas, FITCA in collaboration with the Local Governments and other stakeholders should facilitate organised farmers' groups to establish storage facilities in strategic places at affordable terms. FITCA is currently exploiting modalities with NAADS on how to work together to achieve this, amongst others.
- At policy level, all concerned bodies of Government should be involved to ensure implementation of policies on vending and selling of adulterated milk. Anything short of this will undermine the efforts and intents of producing high quality milk. The Dairy Development Authority, (DDA) in close collaboration with Local Councils (LCs) should spearhead this activity.
- In line with the provisions of the infrastructure development of the Plan for Modernisation of Agriculture, Government should improve road networks within the remotest sections of the project area that are still inaccessible. This should trigger demand of agricultural inputs to and supply of agricultural outputs from these remote areas and increase accessibility of farms to external markets.
- Farmers should be empowered to control storage pests, if possible by employing indigenous methods to minimise post-harvest losses. Use of agricultural extension/advisory services should be enhanced to attain this situation.

- The local authorities should become more vigilant in mobilising fish folks to ensure quality of the fish. Technical assistance in this respect should be provided to help the fish folks construct raised fish-drying racks using local materials where possible.

Recommendations to the Private Sector

The region being agriculturally rich provides an opportunity for the private sector in the areas of agricultural storage, agro-processing and eventually marketing to effectively tap this potential, the private sector should:

- Establish more storage facilities in strategic locations such as trading centres and close to market places, which can be hired out to farmers and agricultural produce dealers at affordable rates.
- Where possible, install low-cost agro-processing facilities deep in the rural areas rather than concentrating in towns and urban centres. Government could facilitate businessmen by creating incentives, like provision of soft loans.
- Try to maintain high agricultural produce quality that attracts a good price.
- Be ethical and build confidence and trust with farmers. This is the only way that the farmers will change their attitude that the agricultural produce dealers and processors cheat them and generally treat them unfairly.

Recommendations for Research

Effective linkages should be established between the farmers and researchers so that the farmers can always easily access the required useful technologies. In addition, more technical skills in storage and agro-processing should be imparted to farmers.

Additional research should be undertaken to establish the efficiency and efficacy of indigenous knowledge in controlling agricultural pests and diseases in the region. A quantitative study should be conducted to establish levels of production, storage and processing of agricultural products in the region.

Recommendations to farmers/communities

Farmers should be encouraged and supported to form interest groups and use the cooperative approach to storage, process and market their produce. Through this arrangement, farmers can be targeted by different projects and programmes to foster their operations. Such an arrangement would greatly help the farmers overcome their current attitude where they want to do things individually and in the process fail to realise economies of scale in their operations. Farmers, supported by Government and other agencies should practice agro-forestry and afforestation to avert the impending future woodfuel wood shortage.

FITCA and NAADS are in the process of harmonising their activities and approach in order to improve the rural livelihoods, through ensuring better and sustainable agricultural extension services delivery.

SECTION 4

4.0 Institutional Framework for Marketing of Agricultural Produce/Products

4.1 Introduction

This section describes the institutional framework available for promoting marketing of agricultural products at district level. It identifies the existing framework in different districts and establishes the strengths and weaknesses of the institutions involved in the promotion of agricultural marketing. It assesses the general framework based on the decentralization structure and policy, and highlights the institutional differences that exists in the various districts. The role of both government and the private sector in the different districts is assessed and discussed.

The decentralization policy in Uganda has lead to devolution of service delivery with the districts being the main implementers. Government through donor support has been helping districts to build capacity to deliver services including education health, agriculture, roads, trade and industry. Together with the ushering in of the structural adjustments programmes, policies that lead to privatisation of government parastatals, the decentralisation policy has lead to a gradual shift of powers from the central government to the districts and the private sector. These policies were aimed at improving efficiency and accountability. This study thus aimed at assessing the existing policy and institutional frameworks in existence for promoting agricultural marketing in six districts in south-eastern Uganda.

4.2 Institutional Involvement in Marketing of Agricultural Produce

4.2.1 Role of Government Institutions

There are two categories of government institutions involved in promotion of agricultural marketing, namely the local government institutions and the central government institutions.

4.2.1.1 Local Government Institutions

Under the decentralization policy, and the Local Government Act of 1997, the districts are mandated to implement government policies of education, health, and agriculture, among others. This study was particularly interested in local government institutions that are involved in the promotion of agricultural marketing at district level. All the districts work under a uniform administrative structure. Below are the respective directorates with whose representatives discussions were held during the study.

Directorate of Production and Marketing

At the district level, the Directorate of Production and Marketing, is responsible for activities related to agricultural production and marketing. The Directorate is comprised of the following departments, namely; Agriculture, Veterinary, Fisheries, Forestry, Entomology, Trade, Labour, and Environment.

Department of Trade

Under liberalization, the marketing policy has encouraged the development of the private sector as the main player in the market. Government only retained the role of creating an enabling economic and political environment. This policy was well conceived and is in line with the current global economic trends.

The Department of Trade is the key player in the promotion of agricultural marketing, and in some districts it is referred to as Department of Trade and Industry or Trade, Commerce and Cooperatives. The main activity of the Department of Trade is collection and dissemination of data on price changes. The Department also gives audit support to cooperative groups and also supports farmers and business groups on proposal writing for loans through existing micro-finance institutions.

In Busia, the Department of Trade, Commerce and Cooperatives, emphasises private sector investments, registration of private sector interventions and promotion of rural electrifications network. In Bugiri, the Department emphasises the cooperative societies. The Department is also mandated to open-up stores for effective marketing of agricultural

produce, initiation of small and medium size factories for the processing of what is produced in the agricultural sector. Other functions carried by the Department include training programmes for member farmers, cooperative leaders and managers to generate new knowledge and acquisition of skills so that they can cope with the changing environment.

The Department of Trade also coordinates the activities of the parent ministry – Ministry of Trade, Industry and Tourism, and the relevant organisations namely; Uganda Investment Authority (UIA), Uganda National Chamber Commerce and Industry (UNCCI), National Bureau of Standards (NBS) , Uganda Export Promotion Board (UEPB) and Uganda Manufacturers' Association (UMA).

Department of Agriculture

In all the districts, the department of agriculture is involved in agricultural production and productivity with limited involvement in agricultural marketing. The department has Agricultural Officers deployed at sub-county level who act as extension agents in all the districts. The principle function of the department is to coordinate agricultural extension services, although the Veterinary Department in some districts also carries out this function. The Department also works in collaboration with the veterinary and entomology department in implementation of FITCA activities.

Veterinary Department

The Department's main function is livestock development. The veterinary department is involved in increasing the productivity of livestock through genetic improvement by artificial insemination, use of improved sires, and gradual production of productive breeds. The main role in marketing by the veterinary department is inspection and regulatory services. The veterinary department is the one responsible for issuance of cattle trader's licence and movement permits. The department is also directly involved in FITCA activities in all the districts, particularly animal trypanosomosis control and treatment and monitoring and backstopping the communal crush spray programmes.

Fisheries Department

Fishing is one of the main economic activities in the south eastern districts. Soroti and Kamuli districts utilize Lake Kyoga and River Nile while Busia, Bugiri, Mayuge and Mukono districts all utilize Lake Victoria. The fisheries department has the mandate to ensure sustainable utilization of both lake and swamp water resources, and to ensure compliance to fishing regulations. The department is involved in sensitisation of fishermen at landing sites on the dangers of using illegal fish gears. The department also promotes diversified fish production through fish farming, improved management of fishing, reduction of post harvest losses and building capacity for management of fish resources.

The department is responsible for revenue collection in terms of fees and licences. To enforce regulation and control, the department is adopting a participatory approach in the management of water resources. It has put in place Beach Management Units (BMUs) to assist in regulation and control, and the BMUs are being integrated in NAADS, where it exists.

In Bugiri the Department of Fisheries' important role in revenue generation is now being realized, and funding has been increased in the 2003/2004 budget to shs 325,176,150/= and staff have been beefed up from 5 in 1998 to 11 today, even though there is still need for more staff if the resources are to be managed adequately.

In Mukono District, the sector has largely eradicated fish poisoning. There's improved fish handling and quality assurance on all major fish landing sites. Fishing is the third largest main economic activity in the district. This is largely because Mukono is richly endowed with many water bodies mainly Lake Nalubaale (Victoria) and L. Kyoga. It is estimated that 15% of the national fish catch is from Mukono District. The fishing activities have influenced the growth of landing sites, which act as links to inland markets. Beach co-management committees have been formed on most landing sites and 2000 boats have been licensed.

Entomology Department

Entomology department is mandated to implement the National Tsetse Fly Control Policy and to promote the development of apiculture and sericulture. The department has been faced with the enormous tasks of controlling the spread of tsetse flies and sleeping sickness and Nagana. The department has been coordinating the implementation of FITCA in the district in close collaboration with Veterinary and Agriculture Departments.

Although the Entomology department is not directly involved in agricultural marketing, it gives supports to the Honey and Beekeepers Associations, which promotes honey production and marketing.

District Tender Boards

The management of markets and landing sites are tendered out to private companies through tendering processes, which invite competitive bidding for all the markets. The Tender Boards also plays a key supervisory role in ensuring compliance with market standards as stipulated in the tendering procedure.

4.2.1.2 Central Government Institutions

Ministry of Agriculture, Animal Industry and Fisheries - MAAIF

This is the Ministry responsible for agricultural policy formulation and overall implementation. Although most government projects are now implemented by the districts, MAAIF retains the supervisory role to ensure that national development goals are achieved. MAAIF plays a direct role in promoting marketing in all parts of the country through the Department of Agricultural Production and Marketing.

MAAIF has developed a framework for modernization of the agricultural sector through the PMA. The Plan for Modernization of Agriculture seeks to address the core problems constraining the development of the agriculture sector. To address these constraints, government developed a poverty-focused framework with strategic interventions in the areas of research and technology, agricultural advisory services, rural finance,

agricultural processing and marketing, natural resource utilization and management and physical infrastructure. All these components are in different stages of implementation.

The institutional framework of the PMA is such that activities are implemented in the context of decentralization, and actual implementation is delegated to the local authorities. NAADS is one of the key strategic interventions that has been fully developed in the districts. NAADS is operational in Soroti, Busia, Kamuli and Mukono. The few years of implementing NAADS have shown that the program is well-tailored, with identified implementation structures for its successful operation. NAADS advocates for market oriented production, and has linked farmers groups to markets. For example, in Soroti linkages have been made with industries e.g. Nile Breweries, Mukwano Industries, Maganjo Flour Millers and various districts for marketing of sorghum, sunflower, sweet potatoes and groundnuts, respectively.

In Busia, NAADS has so far linked farmers groups to markets e.g. to WFP and Uganda Grain Traders Ltd – UGT. In Mukono District, NAADS is providing market information to farmers on a monthly basis. It has linked hot pepper producers to Uganda Horticultural Exports Association and they are promoting Boer goats production for the export market, Okra farmers have been linked to an exporter, and so far 8,000kg has been purchased. Produce farmers have been linked to Magric Ltd.

A number of government parastatals are also directly involved in promoting production and marketing of specific agricultural products in south eastern Uganda. Below are those identified to be active during this study.

Cotton Development Organisation - CDO

The CDO regulates the marketing of cotton through the ginneries with a Regional Officer based at Iganga, for Kamuli, Iganga, Mayuge, Bugiri, Tororo and Busia. In Bugiri, activities are coordinated by the District Coffee Coordinator who ensures that farmers are not paid below the minimum indicative price fixed every cotton-buying season. The CDO also helps in provision of cotton inputs as explained in section two in this report.

Uganda Coffee Development Authority – UCDA

The UCDA monitors the activities of the coffee industry by their own-posted District Coffee Coordinator. The coordinator assists the farmers to increase yield and improve the quality of the coffee they produce. He also compiles statistics of coffee production for the district on annual basis.

Dairy Development Authority – DDA

The DDA is mandated to take up the regulatory and development functions of the Dairy sub-sector. The major thrust of the regulatory services is to register, license and regulate the activities in the Dairy Industry. DDA is active in Kamuli and Mukono districts promoting quality milk production, marketing and collaborating with the Veterinary Department. Activities are coordinated by the DVO.

National Agricultural Research Organisation-NARO

In Mukono exists the Agricultural Research and Development Centre (ARDC) which is a unit of NARO. This modern facility contributes to agricultural marketing through tailored farmers training programmes on agricultural marketing. There is also an ARDC at Ikulwe in Mayuge district.

Ministry of Tourism, Trade and Industry

The Ministry is in charge of developing the tourism sector, local and international trade and the manufacturing sector. The ministry oversees national policy formulation and institutional development for the above sub-sectors in collaboration with districts. Agricultural marketing is a major function of the ministry, with AGOA being a very good example. The ministry has also been involved in promoting regional markets through the East African Community (EAC) and Common Market for East and Southern Africa (COMESA). South eastern Uganda, being a major maize producing region, has benefited from the maize regional markets.

4.2.2 Role of Private Sector Institutions, NGOs/CBOs.

District Farmers Association

Every district has a farmers association except Mayuge district which is a new district still operating under Iganga District Farmers Association. The farmer associations are shown in table 4.1.

Table 4.1 District Farmers' Association and their membership, August 2003.

Name of organization	District of operation	Number of members
SODIFA	Soroti	4,000
BDFA	Busia	2,000
BUDIFA	Bugiri	Not Available
KDFA	Kamuli	5,210
MDFA	Mukono	3,426

The farmers' association mobilize farmers, and production and marketing is enhanced through provisions of market information, market surveys and the pooling of marketing strategies. Bugiri District Farmers' Association has mobilized commercial farmers into Bugiri Commercial Farmers Association to pool together their produce, and this has enabled them to establish a store in Bugiri town where they sell maize and beans directly to WFP. They also operate a farmers saving and credit society to boost agricultural production and marketing and are also planning to set-up a farm supply shop.

Co-operative Societies

In Uganda, before liberalization of trade the cooperative societies enjoyed monopoly of buying, marketing and other related activities for along time. After the liberalisation of agricultural marketing, most co-operative societies collapsed due to severe competition from other actors and removal of government subsidies. Today, the co-operative societies are being revived in the whole country as a way to improve agricultural production and marketing. This effort is part of the overall institutional framework put in place to fight poverty.

The cooperatives in Mukono have been successful despite the liberalization of the economy as compared to other districts. The district boasts of 33 active cooperative

societies involved in agricultural marketing. A good example is Mukono Vanilla and Spices Growers' Cooperative Society with membership of 6,800 throughout the district. Mukono is the leading producer of vanilla throughout the country. The society buys its vanilla from farmers, carries out processing and exports to European countries and Canada.

In Mayuge district the cooperative societies used to be active with stores at parish levels, and the store structures are still there but unused. In Kamuli there are 167 registered cooperative business organisations of which only 30 are active.

Private Sector Promotion Centre

The Private Sector Promotion Centre is a one – stop centre for entrepreneurship and enterprise development providing business advisory services, feasibility studies, development of business profiles, business development skills, internship, apprenticeship, business information, secretarial services including internet, training/workshop facilities, etc. There are two private sector promotion centres in the region, one in Soroti and another in Busia.

Uganda Oil seed Produces and Processors Association – UOSPA

UOSPA is coordinating the activities of the vegetable oil industry in the private sector. The organisation is mainly involved in supporting groups of farmers growing sunflower, groundnuts and soybean. The organization was most active in Soroti with an established office and stores. In Soroti, the UOSPA provides free training to all farmers who buy from them seed and also links them to markets. The organization is using a group approach, which enables farmers to pool their produce in central community stores. This arrangement reduces marketing transactions costs on the part of farmers and also enhances their bargaining power.

ADC/IDEA Project

ADC/IDEA – USAID funded Project in terms of implementation strategy provides assistance to producers, traders, and exporters of selected non traditional agricultural

exports using a vertically integrated “commodity system” approach. The IDEA project aims to expand low value food crop export (primarily maize and beans), and increase production and export of high value crops (such as flowers, fresh produce, vanilla, and cocoa). The Project, through the Agribusiness Development Centre (ADC) offers a wide range of professional expertise including crop production, market information, training, financial linkages, project management and evaluation.

The IDEA Project also plays a big role in bringing agricultural inputs closer to the farmers through the Agribusiness Training and Input Network-ATAIN. IDEA Project is active in Bugiri, Mayuge, Kamuli and Mukono districts.

Bon Holding Ltd.

Bon Holding is a private company that is helping to promote agricultural marketing, specifically for cotton. The company buys, gins and exports cotton. It is based at Nakivumbi, Bugweri County in Iganga, but also actively involved in buying of cotton in Mayuge and Kamuli districts.

Nile Breweries Ltd.

Nile Breweries Ltd made contracts with farmers to grow sorghum (Sorghum Farming Contract - 2003) and the farmers sell the sorghum to the company only. Under this arrangement, farmers do not incur any direct marketing transaction costs that often bog down the marketing of other produce.

Uganda Small Scale Industry Association

Uganda Small-Scale Industry Association mobilizes women in income generating activities including produce buying and processing, and also trains and offers them micro credit facilities.

Private Milk Cooling Centres.

Private Cooling Centres are being established to promote marketing of milk and thus boost milk production in the region. Mukono district has a number of these private milk-

cooling centres located mainly in Mukono, Buikwe and Ntenjeru counties. White Nile Dairies and Kaisa, private companies are planning to install two milk coolers in Kamuli district, one at Kamuli town with capacity of 2000 litres and second one at Irundu of 3000 litres capacity. The cooler in Bugiri town is non-operational due to lack adequate of milk supplies.

Sasakawa Global 2000

Sasakawa Global 2000 (MAAIF – SG 2000) Program is putting a lot of effort to modernize the techniques small farms use to produce food and helping them organize to receive other forms of assistance like inputs, credit and market for their harvest. MAAIF – SG 2000 Program aims at:

- Increasing food production and reducing food losses so that small – scale farmers (the target group) have a surplus to sell beyond their needs for food security. SG 2000 in its post harvest – handling program trains farmers in improved post harvest handling methods which includes harvesting, crops drying, storage, value addition, and marketing.
- Increasing productivity and diversification so that profitability of small – scale production is increased sustainably.
- Improving market access for farm inputs through establishment of a rural network of stockists.
- Improving produce marketing through aggregation of produce by farmers' organisations.
- Developing, expanding, and consolidating working models of mechanisms through which SG 2000's objectives are achieved in partnership with other development organisation.

Sugar Manufacturing Companies

Kakira sugar works has registered sugar cane out growers in Bayitamba in Mayuge district. The company buys cane directly from the farmers, thereby helping them reduce marketing costs in addition to assurance of a reliable market.

Sugar Cooperation of Uganda – Lugazi (SCOUL) supports many sugar – cane out growers who supply sugarcane to the factory and this has boosted out growers acreage to 38,246 hectares in Mukono district.

NGOs/CBO

There are many national/international NGOs/CBOS that close delivery gaps in agricultural production and marketing especially in Soroti and Kamuli districts as shown in Table 4.2.

Table 4.2 NGOs and CBOs operating in different districts, August 2003.

District	NGOs/CBOs	Activities
Soroti	Teso Diocesan Development Organisation (TEDDO)	Involved in many activities including micro-credit, heifer loan scheme especially to women.
	Soroti Catholic Diocese Development Organisation (SOCADIDO)	multi-sectoral programs in all the key sectors including agricultural production and marketing.
	Soroti Honey and Beekeepers Associations – (SHBA)	Promotes honey production and marketing
	Teso Rural Development Trust (TRDT)	Deals with micro credit and has a number of products ranging from micro credit group loans to medium scale loans.
	World Vision	an area development programme that is multi sectoral in approach. It has been actively participating in the bottom-up planning process at sub-county level and they can collaborate properly with NAADS.
Bugiri	Heifer Project – Church of Uganda	Supplies free heifers through Church of Uganda.
Mayuge	Africa 2000	Trains farmers in organic farming, provides heifers, day old chick, and planting material for cassava, banana and pineapples.
Kamuli	Action Solutions Creativity for Rural Development (NASCRUD).	Involved in farmer scholar programmes, rural development information centre and HIV/Aids campaign.
	Kamuli District Women Development Association (KAMASO)	nobilization and training of women for development including agricultural production and marketing.
	Africa 2000	As in Mayuge

Private Sector Industries

Private sector industries are part of the wider institutional framework in promoting agricultural in the region. Mukono ranks as one of the most industrialized districts in Uganda and it is a home of many big industries e.g. coffee processing industries, fishing processing, vanilla processing, wine processing, fruit drying and packaging, tannery, dairy processing, bakery, etc.

A big fish-processing factory is being constructed at Majaju in Busia district, 27km from Busia town. This factory is expected to employ 400 people when production commences. When this factory becomes operational it will greatly boost the fishing industry in Busia and facilitate fish exports from Uganda. All these processors provide ready markets and help farmers to market their products/produce.

4.3 Constraints in the formulation and implementation of strategies for improved agricultural marketing

This study identified a wide range of inadequacies and constraints facing the actors involved in promoting agricultural marketing in the different districts.

4.3.1 Constraints facing the Districts

- (i) The Department of Trade (Trade and Industry or Trade, Commerce and Cooperatives) is under funded, understaffed and with no clear defined roles. Lack of transport facilities affects the accessibility of the staff to the primary societies, which are scattered all over the district and thus field based.
- (ii) The fisheries department is under staffed and under funded although the landing sites bring substantial revenue. For example, Bugiri has 71 landing sites with only 11 staff to supervise them. The fisheries water transport is poor. There is lack of cooperation in some cases on the issue of catching immature fish. The fish industry also experience frequent problems of moving suds especially on Lake Kyoga.

- (iii) Inadequacy of the human and physical resources by the agricultural departments to deliver regulatory and technical services. The Entomology Department is under-staffed for example, in Soroti district with only two Entomology officers at district level and a number of untrained assistants at village levels.
- (iv) There are high farmer expectations from the districts after decentralization. Farmers are expecting a lot from the districts, for example from the NAADS programmes.
- (v) Inadequate and irregular/untimely/late releases of funds from the central government to the district government departments.
- (vi) High dependence on donor funds and government grants. In Kamuli District, for example, in the 2000/2001 the district local revenue and development taxes only covered 9.1% of the entire budget. Central government grants and donor funds covered the rest.

4.3.2 Constraints facing farmers associations and co-operative societies

- (i) Lack of accountability and transparency by the management committees of some Cooperative societies have affected the activities of the primary societies. The Chairman, Treasurer and Secretary Managers collude to defraud and embezzle funds, share capital and retained profits from the business transactions and are not accountable to the shareholders. For example, the sale of Cooperative assets by Busoga Growers Cooperative Union (BGCU) has greatly affected primary societies like Luwooko, Kitodha, Manakoko, Busowa, Magoola. In some cases, society assets like stores, weighing scales, safes, land and other properties have been disposed off in non-transparent ways. Poor management practices like diversion of crop finance, poor accounting procedures and inefficient records keeping, have bogged down the growth of societies. .

- (ii) Lack of capital is another major constraint facing crop societies. There is lack of direct financial assistance/resources to support cooperative activities and yet capital assets are either inadequate or completely absent. Societies and Farmers Associations are heavily donor dependant getting 50% of their required funds from the Danish International Development Agency (DANIDA). If DANIDA pulls out there will be a problem. The biggest challenge of district farmers associations is building self-sustainable organisations based on service delivery to farmers.

4.3.3 Constraints facing the private sector

- (i) Inadequate funding: Most private sector agencies lack adequate funding and are understaffed. Due to these two constraints, the agencies are unable to reach out to remote farmers. For example, there are only two Private Sector Promotion Centers in the region, one in Soroti and another one in Busia.
- (ii) There is poor farmer attitude towards the role of the private sector. Most private sector agencies charge fees for their services, and although sometimes subsidized, farmers (even commercial farmers) have not developed the culture of paying for them.

4.5 Conclusion

The findings of this study indicate that the institutional framework and the policy environment is fairly conducive for promoting agricultural marketing. The two policies of decentralization and trade liberalization have created an enabling environment for production and marketing. Previously, agricultural marketing was a monopoly of state funded parastatals like the Coffee Marketing Board, Produce Marketing Board and Lint Marketing Board. Under state controlled arrangements, prices were predetermined and farmers had to wait for long periods to be paid for produce already delivered.

At policy level, trade liberalization has enabled farmers to access international markets through private and more efficient marketing agencies. At institutional level, the

decentralization framework has brought services closer to the people. For example, the implementation of PMA/NAADS at the local level is a pro-farmer approach as opposed to the previous top-down extension approach. There is, therefore, an enabling institutional framework at the districts to promote agricultural marketing, in form of local government departments, farmers associations and the private sector. At district level, the main setbacks are mainly administrative inefficiencies and inadequate funding. Below are some recommendations.

4.6 Recommendations

1. All the departments involved in promoting of agricultural marketing in the districts should be adequately funded and staffed. The roles and functions of all departments pertaining to agricultural marketing promotion should be properly spelled out.
2. There is an urgent need to construct permanent structures in the public markets, fish landing sites and livestock markets. These structures include market stalls, stores, water facilities, pit latrines, weighing bridges for livestock markets, parking yards, off loading and on loading slabs. The central Government could also give grants or solicit for donor funding to improve these markets as they play a leading role in marketing of agricultural produce. Local Governments should copy from Kampala City Council, which borrowed from the World Bank to construct/improve all its major markets in the city. PMA could find a way to assist in this respect. This would enable the local governments to collect more revenue from markets, which can then be ploughed back to improve agricultural marketing services like providing marketing information.
3. The ongoing review of the cooperative organisations should be speed-up as the gap left by the collapse of the cooperative societies in the marketing of the agricultural produce/products is being felt in all the districts.

4. The district farmers' organisations are doing a commendable job in promoting agricultural production and marketing, but their activities are likely to be greatly affected when DANIDA funding comes to an end December 2003. It is strongly recommended that co-funding be sought from other donors or government grants to allow these young organisations mature and become self-reliant.
5. Farmers should be sensitised about the need for quality produce/products right from the farm to the market. To achieve this, formation of special interest groups should be encouraged, as it is easier to disseminate information/knowledge through special interest groups. NAADS is already playing a big role in this direction and these principles should be emulated.

General Concluding Remarks

This report presents the findings of a study carried out in six representative districts of south eastern Uganda, namely Soroti, Busia, Bugiri, Mayuge, Kamuli and Bugiri. The study aimed at assessing the marketing channels for agricultural products and inputs, the storage and agro-processing activities and infrastructure, and the institutional framework available for promoting agricultural marketing in the region. Below are the main findings of the study.

Crop production is the main economic activity in all the six districts studied, maize and cassava being particularly important food crops while cotton and coffee are the main cash crops. The region was the largest producer of major grains for the year 2000. Livestock production is mainly for subsistence consumption, with limited trade outside the districts. Fish production is also an important economic activity in all districts except Soroti, with Lake Victoria being the main source. Fish farming increasing but is constrained by high investment and maintenance costs. The structure, conduct and performance of agricultural markets in the region are such that farmers do not get their deserved share of the marketing proceeds. Due to poor information flow, poor road networks and poor storage facilities, farmers have very limited trading opportunities. They are mainly price takers with no bargaining powers over their produce.

The study also revealed that potential demand for agricultural inputs is high given the high number of households engaged in agriculture in the region. However, low household incomes coupled with limited farmers' awareness about the need to use inputs have kept the level of agro-vet input supply business low. This has meant that very few private businessmen are willing to invest in input supply business, especially in rural areas. Typical of third world economies this situation of market failure only serves to compound the problem of low agricultural output, low incomes and unending poverty and hence calls for urgent government intervention. The problem stems from the fact government policy of liberalizing agricultural and veterinary input supply was not followed by appropriate measures to handle the transition. Below are recommendations on how this problem can be overcome.

It was also found that at both household and community levels, no elaborate storage infrastructures exist. As a consequence, farmers store their crops of all types and forms in their residential houses/huts pending their disposal. The practice of storing in granaries has grounded to a halt as thefts from the granaries increasingly became rampant. In addition, the traditional cribs for maize drying and storage have long been abandoned except for a few isolated areas. This as a result has limited farmers' capacity to attain and maintain the desired produce quality. In addition, the farmers are forced to sell off their produce immediately at or after harvest when produce prices are very low. This poses a big policy challenge.

The study also found that the institutional framework and the policy environment are fairly conducive for promoting agricultural marketing. The two policies of decentralization and trade liberalization have created a conducive environment for production and marketing. Previously, agricultural marketing was a monopoly of state funded parastatals like the Coffee Marketing Board, Produce Marketing Board and Lint Marketing Board. Under state controlled arrangement, prices were predetermined and farmers had to wait for long periods for produce already delivered. At policy level, trade liberalization has enabled farmers to access international markets through private and

more efficient marketing agencies. At institutional level, the decentralization framework has brought services closer to the people.

If modernization of the agricultural sector is to be realised, some of the recommendations mentioned in this report should be embraced.

Finally, from the findings and recommendations made, it can be said that the study achieved the Terms of Reference specified.

References.

- Holtzman, John S. 1986. Rapid Reconnaissance Guidelines for Agricultural Marketing and Food System Research in Developing Countries. MSU International Development Papers, Working Paper No. 30. Michigan State University, East Lansing, Michigan.
- Holtzman, John S., Jerry Martin and Richard D. Abbott. 1993. Operational Guidelines for Rapid Appraisal of Agricultural Marketing Systems. Agricultural Marketing Improvement Strategies Project. Abt Associates Inc. Bethesda, Maryland.
- Natural Resource Institute (NRI), International Institute of Tropical Agriculture (IITA)/FoodNet. (2002). Transaction Cost Analysis in Agricultural Marketing. Report prepared for the Plan for Modernization of Agriculture.
- World Bank. (2002). The Guide to Developing Agricultural Markets and Agro-Enterprises. Ed. J.S. Holtzman. Washington. D.C.

Annex 1 - Data Collection Instruments

Data Collection Instrument – Agricultural Markets (District Official)

Topic	Sub-topic	Questions/comments
District/departmental information	1. District 2. Departments 3. Staffing	Name of district Departments involved agricultural production Staff in the departments
Main crops produced	4. Cash crops 5. Food crops	List main cash crops List main food crops Average acreage per household
Main livestock kept	6. Livestock 7. Livestock products	List of livestock types Average number per household List of main livestock products
Fish	8. Source of fish 9. Types of fish	Lakes, rivers, and ponds List of fish types caught
Structure Conduct and conduct of markets by sub-sector (Crop, livestock and fish)	10. Types of markets 11. Structure of markets 12. Conduct of markets 13. Performance of markets	Rural and urban markets Number, size and diversity of participants Reliability or timeliness of activities, control or standardization of quality The technical and allocative efficiency of the market, the degree of market integration, price and margin stability, accuracy and adequacy of information flows, etc NB: All by sub-sector
Government role in agricultural marketing by sub-sector (Crop, livestock and fish)	14. Price information 15. Quality control 16. Sources 17. Delivery	Provision of market information What mechanisms are in place for quality control? Do you provide information on source of inputs? Do you deliver or provide any inputs? NB: All by sub-sector
Other players	18. NGOs 19. Associations 20. Private sector	What NGOs are involved in agricultural marketing in this district? Are there farmers' associations involved in agricultural marketing? What is the role of the private sector?
Credit availability	21. Availability 22. Sources 23. Conditions	Do farmers/traders have access to credit? What are the sources of credit, formal and informal? What are the payment terms?
Constraints		What are the main constraints limiting agricultural marketing?
Recommendations		What are your recommendations on how to improve agricultural inputs?

Data Collection Instrument – Agricultural Markets (Community FGD))

Topic	Sub-topic	Questions/comments
Village information	1. Name 2. Parish 3. Sub-county 4. District	
Main crops produced	5. Cash crops 6. Food crops	List main cash crops List main food crops Average acreage per household
Main livestock kept	7. Livestock 8. Livestock products	List of livestock types Average number per household List of main livestock products
Fish	9. Source of fish 10. Types of fish	Lakes, rivers, and ponds List of fish types caught
Structure Conduct and conduct of markets by sub-sector (Crop, livestock and fish)	11. Types of markets 12. Structure of markets 13. Conduct of markets 14. Performance of markets	Where do you sell your produce/products? Number, size and diversity of participants Reliability or timeliness of activities, control or standardization of quality Degree of market integration, price and margin stability, accuracy and adequacy of information flows, etc NB: All by sub-sector
Transaction costs	15. Distance 16. Travel time	Distance to the nearest agricultural markets Time spent traveling to agricultural markets
Market information	17. Sources 18. Access	What are your sources of information? How easy is it to access market information?
Constraints		What are the main constraints limiting access to agricultural markets?
Recommendations		What are your recommendations on how to improve agricultural marketing?

Data collection instrument - Input Delivery (Stockists)

Topic	Sub-topic	Questions/comments
Personal information	1. Name 2. Address 3. Telephone 4. Experience 5. Qualification	
Type of business	6. Scale 7. Sole propriety 8. Co-op Society 9. Other functions	Is business retail, wholesale or both? Are you a sole proprietor or are operating as co-operative society? Do you provide information to customers?
Demand	10. Quantity 11. Type of buyer(s) 12. Seasonality 13. Consumer preferences 14. Prices	How much do you sell per month? Who do you sell? Are fluctuations in sales volume with time? If so, what are the peak periods? Do customers have specific preferences for different products, packaging, etc? What is selling price for different inputs?
Supply	15. Source of inputs 16. Types 17. Quantity 18. Prices 19. Delivery	Where do you buy your stock? What types of inputs do you have In what quantities? What are purchase prices? How is stock delivered to your premises?
Market information	20. Sources 21. Access	What are your sources of information? How easy is it to access market information?
Transaction costs	22. Forms 23. Effect	What forms transaction costs do you incur? How do transaction costs affect your business?
Market structure	24. Competition	Number of stockists in this locality Is there price competition? Are there many buyers
Credit availability	25. Availability 26. Sources 27. Conditions	Do you have access to credit? What are the sources of credit, formal and informal? What are the payment terms?
Policy frame work	28. Regulations 29. Taxes 30. Professional requirements 31. Licensing	Are there any market regulations? If so, how do you they affect your business? Do you pay taxes? How much? Are there professional requirements for running this business? How easy is it to get a trading license?
Constraints		What constraints do you face in your business?
Recommendations		What are your recommendations on how to improve the provision of agricultural inputs

Data collection instrument – Input Delivery (District officials)

Topic	Sub-topic	Questions/comments
District/departmental information	1. District 2. Departments 3. Staffing	Name of district Departments involved agricultural production Staff in the departments
Input use	4. Level of use 5. Types	How many farmers use inputs What inputs are mostly used
Government role	6. Price information 7. Quality control 8. Sources 9. Delivery	Provision of market information What mechanisms are in place for quality control? Do you provide information on source of inputs? Do you deliver or provide any inputs?
Other players	10. NGOs 11. Associations 12. Private sector	What NGOs are involved in input delivery in this district? Are there farmers' associations involved in input delivery? What is the role of the private sector?
Cost recovery	13. Implementation 14. Response 15. Problems	Have you tried cost recovery? How have farmers responded? What are the shortcomings of cost recovery?
Credit availability	16. Availability 17. Sources 18. Conditions	Do you have access to credit? What are the sources of credit, formal and informal? What are the payment terms?
Constraints		What are the main constraints limiting delivery of agricultural inputs?
Recommendations		What are your recommendations on how to improve delivery of agricultural inputs?

Data collection instrument – Input Delivery (Community members)

Topic	Sub-topic	Questions/comments
Village information	1. Name 2. Parish 3. Sub-county 4. District	
Demand for inputs	5. Level of use 6. Types 7. Preferences 8. Prices	How many households use inputs? What types? Do you have any preferences What are prices
Delivery	9. Sources 10. Suppliers 11. NGOs 12. Private sector 13. Government 14. Associations	Where do you buy? Who are the suppliers? Are there NGOs involved in input delivery? What other roles do they play? Does the private sector or government help you in any way? Do you have farmers' associations? If so, how do they help in input delivery?
Transaction costs	15. Distance 16. Travel time	Distance to the nearest agro-vet shop Time spent traveling to the purchase inputs
Market information	17. Sources 18. Access	What are your sources of information? How easy is it to access market information?
Constraints		What are the main constraints limiting access to agricultural inputs?
Recommendations		What are your recommendations on how to improve agricultural inputs?

Data Collection Instrument – Storage and Agro-processing

District:

Sub county

Parish:

Village:

Section 1: For the Community

1.1 Available infrastructure

1. Do you have storage facilities for your products?
2. What storage structures are used at the household level? For which crops?
3. What processes do you employ during storage of your products?
4. Do you jointly store your produce with other farmers in the area? Yes ☐ No ☐
5. If the response in 4 above is No, go to 10.
6. What products are jointly stored?
7. What joint storage facilities do you use?
8. Who owns the storage facilities?
9. Do you pay a storage fee for the service?
10. If the response in 4 above is no, why?
11. What storage constraints do you face?
12. What are your recommendations to improve storage of agricultural products?

1.2 Use of storage chemicals and biological compounds/indigenous knowledge

1. Do you use any chemicals during storage?
2. If yes, which chemicals do you commonly use?
3. Where are the chemicals obtained?
4. How are the chemicals obtained?
5. Are any biological compounds or other substances used during storage?
6. How are they used and how effective are they?
1. What indigenous knowledge/substances are used during storage?

1.3 Agro- processing facilities

1. Do you process your agricultural products? Yes ☐ No ☐. If the answer is no, go to 5.
2. What particular products do you process?
3. What processing facilities exist?
4. What processing procedures do you use?
5. If the answer in 1 above is no, what are the reasons?
6. What agro-processing constraints do you face?
7. What are your recommendations to improve agro-processing?

Section 2: For Food Processors

1. What particular products do you process?
2. What processing facilities do you use?
3. Are there any other processing facilities you would like to have but are lacking?
4. What processing procedures do you use?
5. What agro-processing constraints do you face?
6. What are your recommendations to improve agro-processing?

Section 3: For Trade Development Officers and NAADS Coordinators

1. What agro-processing facilities exist in the district?
2. Who provides these facilities?
3. How is quality of the produce assured?
4. What assistance does your office give to farmers to promote storage of their agricultural produce?
5. Are there any deliberate efforts to assist the farmers in storage of their produce?
6. In your opinion, what major constraints do the farmers face in their storage and processing of their produce?
7. What recommendations do you give to improve storage and agro-processing?

Section 4: For The Private Sector

1. What storage and agro-processing activities are you involved in?
2. What products are you handling?
3. How is storage of the products done?
4. What processes do you go through during agro-processing?
5. What are the major constraints to agro-processing and storage?
6. What recommendations do you give to improve storage and agro-processing?

Data Collection Instrument – Institutional Framework (District Official)

Topic	Sub-topic	Questions/comments
District/departmental information	1. District 2. Departments 3. Staffing	Name of district Departments involved agricultural production Staff in the departments
Institutional framework at district	4. Institutions 5. Role institutions 6. Policy framework	What institutions are involved in promoting agricultural marketing What are the roles of these institutions? What policies are in place for promoting agricultural marketing?
Other players	7. NGOs 8. Associations 9. Private sector	What NGOs are involved in promoting agricultural marketing in this district? Are there farmers' associations involved promoting agricultural marketing? What is the role of the private sector?
Constraints		What are the main institutional constraints limiting promotion of agricultural marketing?
Recommendations		What are your policy recommendations on how to agricultural marketing can be improved?

Data Collection Instrument – Institutional Framework (Private Sector Representatives)

Topic	Sub-topic	Questions/comments
District/departmental information	1. District 2. Name of organization 3. Staffing	
Role of Organization	4. Roles 5. Linkages 6. Coverage 7. Achievements	What are the specific roles of your organization in promoting agricultural marketing? What linkages do you have with government, farmers and other organizations? What are your areas of operation? Outline your achievements as far as promoting agricultural marketing is concerned.
Constraints		What are the main institutional constraints limiting promotion of agricultural marketing?
Recommendations		What are your policy recommendations on how to agricultural marketing can be improved?

Data Collection Instrument – Institutional Framework (Community FGD)

Topic	Sub-topic	Questions/comments
Village information	<ol style="list-style-type: none"> 1. Name 2. Parish 3. Sub-county 4. District 	
Government Role	<ol style="list-style-type: none"> 5. Departments 6. Roles 	<p>Do you get any form of assistance from the district to market your products?</p> <p>What type of assistance?</p> <p>Has it been useful?</p>
Private Sector		
Transaction costs	<ol style="list-style-type: none"> 7. Distance 8. Travel time 	<p>Distance to the nearest agro-vet shop</p> <p>Time spent traveling to the purchase inputs</p>
Market information	<ol style="list-style-type: none"> 9. Sources 10. Access 	<p>What are your sources of information?</p> <p>How easy is it to access market information?</p>
Constraints		What are the main constraints limiting access to agricultural inputs?
Recommendations		What are your recommendations on how to improve agricultural inputs?

Annex II. Annual national production figures

Table 1. Annual Production of Matooke Cooking Banana in Metric Tonnes

Matooke	UBOS Statistical Abstract 2002*	UBOS Crop Survey Module 1999/2000	FAO	Commodity Study**
1996	9,144,000	7,908,984	9,734,000	
1997	9,303,000		9,893,000	
1998	9,318,000		9,913,000	
1999	8,949,000		9,844,000	
2000	9,428,000	5,545,000	10,476,000	
2001	9,732,000		10,506,000	
2002	9,888,000		10,521,000	4,554,000

* 2001 figures are estimates, 2002 figures are projections

** Spilsbury et al 2002

Table 2. Annual Production for Cassava in Metric Tonnes

Cassava	UBOS Statistical Abstract 2002*	UBOS Crop Survey Module 1999/2000	FAO
Production			
1996	2,245,000	2,747,000	2,245,000
1997	2,291,000		2,291,000
1998	3,204,000		3,204,000
1999	4,875,000		4,875,000
2000	4,966,000	2,246,000	4,966,000
2001	5,265,000		5,265,000
2002	5,373,000		5,265,000

* 2001 figures are estimates, 2002 figures are projections

Table 3. Annual Production for Maize in Metric Tonnes

Maize	UBOS Statistical Abstract 2002*	UBOS Crop Survey Module 1999/2000	FAO	IDEA	Commercial Estimate**
Production					
1996	759,000	534,000	759,000		
1997	740,000		740,000		
1998	924,000		924,000		
1999	1,053,000		1,053,000		
2000	1,096,000	744,000	1,096,000	410,000	
2001	1,174,000		1,174,000	650,000	
2002	1,217,000		1,174,000	530,100	310 - 430,000

* 2001 figures are estimates, 2002 figures are projections

** J Magney of Uganda Grain Traders

Table 4. Annual Production for Sweet Potato in Metric Tonnes

Sweet Potatoes	UBOS Statistical Abstract 2002*	UBOS Crop Survey Module 1999/2000	FAO
Production			
1996	1,548,000	2,989,000	1,548,000
1997	1,894,000		1,894,000
1998	2,176,000		2,176,000
1999	2,354,000		2,354,000
2000	2,398,000	2,621,000	2,398,000
2001	2,515,000		2,515,000
2002	2,592,000		2,515,000

* 2001 figures are estimates, 2002 figures are projections

Table 5. Annual Production of Finger Millet in Metric Tonnes

Finger Millet	UBOS Statistical Abstract 2002*	UBOS Crop Survey Module 1999/2000	FAO
1996	440,000	193,000	440,000
1997	502,000		502,000
1998	642,000		642,000
1999	606,000		606,000
2000	534,000	185,000	534,000
2001	584,000		584,000
2002	590,000		584,000

* 2001 figures are estimates, 2002 figures are projections

Table 6. Annual Production of Sorghum in Metric Tonnes

Sorghum	UBOS Statistical Abstract 2002*	UBOS Crop Survey Module 1999/2000	FAO
1996	298,000	202,000	298,000
1997	294,000		294,000
1998	420,000		420,000
1999	413,000		413,000
2000	361,000	113,000	361,000
2001	423,000		423,000
2002	427,000		423,000

* 2001 figures are estimates, 2002 figures are projections

Table 7. Annual Production of Sesame in Metric Tonnes

Sesame Seed	UBOS Statistical Abstract 2002*	FAO	Commodity Study **
1996	73,000	73,000	
1997	73,000	73,000	
1998	77,000	77,000	
1999	93,000	93,000	
2000	97,000	97,000	
2001	102,000	102,000	
2002	106,000	106,000	15,000 – 20,000

* 2001 figures are estimates, 2002 figures are projections

** Mbwika 2003

Table 8. Annual Production of Soybean in Metric Tonnes

Soybean	UBOS Statistical Abstract 2002*	FAO
1996	87,000	87,000
1997	84,000	84,000
1998	92,000	92,000
1999	101,000	101,000
2000	128,000	120,000
2001	144,000	144,000
2002	166,000	166,000

* 2001 figures are estimates, 2002 figures are projections

Table 9. Annual Production of Beans in Metric Tonnes

Beans	UBOS Statistical Abstract 2002*	UBOS Crop Survey Module 1999/2000	FAO	IDEA
Production				
1996	234,000	335,000	234,000	
1997	221,000		221,000	
1998	387,000		387,000	
1999	401,000		401,000	
2000	420,000	495,000	420,000	210,000
2001	511,000		511,000	260,000
2002	535,000		535,000	297,000

* 2001 figures are estimates, 2002 figures are projections

Table 10. Annual Production of Ground Nuts in Metric Tonnes

Ground Nuts	UBOS Statistical Abstract 2002*	UBOS Crop Survey Module 1999/2000	FAO
1996	125,000	136,000	125,000
1997	91,000		134,000
1998	140,000		140,000
1999	137,000		137,000
2000	139,000	125,000	139,000
2001	146,000		146,000
2002	148,000		148,000

* 2001 figures are estimates, 2002 figures are projections

Table 11. Annual Production of Rice in Metric Tonnes

Rice	UBOS Statistical Abstract 2002*	FAO
1996	82,000	82,000
1997	80,000	80,000
1998	90,000	90,000
1999	95,000	95,000
2000	109,000	109,000
2001	114,000	114,000
2002	120,000	114,000

* 2001 figures are estimates, 2002 figures are projections

Table 12. Annual Production of Irish Potatoes in Metric Tonnes

Irish Potatoes	UBOS Statistical Abstract 2002*	FAO	Commodity Study **
1996	318,000	318,000	
1997	360,000	360,000	
1998	384,000	384,000	
1999	449,000	449,000	
2000	478,000	478,000	1,079,544
2001	508,000	508,000	1,234,197
2002	546,000	508,000	

* 2001 figures are estimates, 2002 figures are projections

** Wagoire et al, unpublished in Ferris 2001

Table 13. Annual Production of Pigeon Peas in Metric Tonnes

Pigeon Peas	UBOS Statistical Abstract 2002*	FAO
1996	58,000	58,000
1997	59,000	59,000
1998	61,000	61,000
1999	76,000	76,000
2000	78,000	78,000
2001	80,000	78,000
2002	82,000	78,000

* 2001 figures are estimates, 2002 figures are projections

Table 14. Annual Production of Cow Peas in Metric Tonnes

Cow Peas	UBOS Statistical Abstract 2002*	FAO**
1996	47,000	47,000
1997	46,000	46,000
1998	50,000	50,000
1999	62,000	62,000
2000	60,000	64,000
2001	59,000	64,000
2002	59,000	64,000

* 2001 figures are estimates, 2002 figures are projections

** Cow Peas (Dry)

Table 15. Annual Production of Wheat in Metric Tonnes

Wheat	UBOS Statistical Abstract 2002*	FAO
1996	9,000	9,000
1997	9,000	9,000
1998	9,000	9,000
1999	11,000	11,000
2000	12,000	12,000
2001	14,000	14,000
2002	14,000	14,000

* 2001 figures are estimates, 2002 figures are projections

Annex III. Production Data disaggregated by District, Region and Year.

UBOS Crop Survey Module 1999/2000 Production of Cooking Banana by Region (MT)

	Central	Eastern	Northern	Western	Total
1995/1996	1,376,797	917,205	90,865	5,524,117	7,908,984
1999/2000	1,687,000	481,000	14,000	3,363,000	5,545,000

MAAIF Production of Cooking Banana (MT) by District

District	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Apac	72,882	76,766	79,362	84,142	85,375	86,859	86,999	83,554		
Arua	85,610	90,172	93,221	98,836	100,284	102,028	102,193	98,146	103,399	106,733
Bundibugyo	138,773	146,169	151,111	160,213	162,560	165,387	165,654	159,094	167,609	173,014
Bushenyi	1,040,593	1,096,048	1,133,107	1,201,360	1,218,957	1,240,152	1,242,152	1,192,961	1,256,815	1,297,341
Gulu	18,023	18,983	19,625	20,807	21,112	21,479	21,514	20,662	21,768	22,469
Hoima	171,811	180,967	187,086	198,355	201,261	204,760	205,090	196,968	207,511	214,202
Iganga	189,924	200,045	206,809	219,266	222,478	226,346	226,711	217,733	229,387	236,784
Jinja	103,965	109,506	113,209	120,028	121,786	123,904	124,104	119,189	125,569	129,618
Kabale	175,864	185,236	191,499	203,034	206,008	209,590	209,928	201,615	212,406	219,255
Kabarole	298,458	314,363	324,992	344,568	349,615	355,694	356,268	342,159	360,473	372,097
Kamuli	125,337	132,016	136,480	144,701	146,820	149,373	149,614	143,689	151,380	156,261
Kapchorwa	43,381	45,693	47,238	50,083	50,187	51,701	51,784	49,734	52,396	54,085
Kasese	224,312	236,266	244,255	258,968	262,761	267,330	267,761	257,157	270,922	279,658
Kibaale	3,089	3,254	3,364	3,567	3,619	3,682	3,688	3,542	3,731	3,852
Kiboga	434,587	457,747	473,224	501,729	509,078	517,930	518,765	498,222	524,889	541,814
Kisoro	3,588	3,779	3,907	4,142	4,203	4,276	4,283	4,113	4,333	4,473
Kitgum	2,320	2,444	2,527	2,679	2,718	2,766	2,770	2,661	2,803	2,894
Kumi	46,843	49,339	51,007	54,079	54,872	55,826	55,916	53,702	56,576	58,400
Lira	14,561	15,337	15,856	16,811	17,057	17,354	17,382	16,694	17,587	18,154
Luwero	186,985	196,950	203,609	215,873	219,035	222,844	223,203	214,364	225,838	233,120
Masaka	565,083	595,198	615,323	652,387	661,943	673,453	674,539	647,827	682,502	704,509
Masindi	155,358	163,637	169,170	179,360	181,987	185,152	185,451	178,107	187,640	193,690
Mbale	604,675	636,899	658,434	698,095	708,320	720,637	721,799	693,215	730,320	753,869
Mbarara	1,412,375	1,487,644	1,537,944	1,630,583	1,654,466	1,683,234	1,685,948	1,619,183	1,705,851	1,760,855
Moroto	37	39	40	42	43	44	44	42	45	46
Moyo	1,663	1,752	1,811	1,920	1,948	1,982	1,985	1,907	2,009	2,073
Mpigi	291,557	307,095	317,478	336,601	341,532	347,470	348,030	334,248	352,139	363,493
Mubende	289,724	305,164	315,482	334,485	339,384	345,286	345,843	332,147	349,925	361,209
Mukono	310,536	327,085	338,144	358,512	363,763	370,089	370,686	356,006	375,062	387,155
Nebbi	55,060	57,994	59,955	63,566	64,497	65,619	65,725	63,122	66,501	68,645
Pallisa	8,869	9,342	9,658	10,240	10,390	10,570	10,587	10,168	10,712	11,057
Rakai	433,159	456,243	471,669	500,080	507,405	516,228	517,060	496,584	523,164	540,033
Rukungiri	181,788	191,476	197,950	209,874	212,948	216,650	216,999	208,406	219,561	226,641
Soroti	2,676	2,819	2,914	3,090	3,135	3,189	3,194	3,068	3,232	3,336
Tororo	107,658	113,395	117,229	124,290	126,111	128,304	128,511	123,422	130,028	134,221
TOTAL	7,806,001	8,221,999	8,500,000	9,012,000	9,144,000	9,303,000	9,318,000	8,949,000	9,428,000	9,732,000

Cassava

UBOS Crop Survey Module 1999/2000

Production of Cassava by Region (MT)

	Central	Eastern	Northern	Western	Total
1995/1996	110,000	1,659,000	447,000	531,000	2,747,000
1999/2000	195,000	1,213,000	457,000	381,000	2,246,000

MAAIF Production on Cassava (MT) by District

District	1992	1993	1994	1995	1996	1997	1998	1999	2000
Apac	180,786	195,956	129,847	138,837	140,148	143,019	200,014	304,329	310,01
Arua	178,934	193,948	128,516	137,414	138,711	141,553	197,964	301,209	306,83
Bundibugyo	16,275	17,641	11,689	12,498	12,616	12,875	18,006	27,397	27,90
Bushenyi	28,402	30,785	20,399	21,811	22,017	22,468	31,422	47,809	48,70
Gulu	152,581	165,384	109,589	117,176	118,283	120,706	168,809	256,849	261,64
Hoima	75,089	81,390	53,932	57,666	58,210	59,403	83,076	126,403	128,76
Iganga	216,572	234,744	155,549	166,318	167,889	171,329	239,606	364,570	371,37
Jinja	23,803	25,800	17,096	18,280	18,452	18,830	26,334	40,068	40,81
Kabale	24,852	26,937	17,849	19,085	19,265	19,660	27,495	41,834	42,61
Kabarole	122,337	132,602	87,866	93,949	94,836	96,780	135,348	205,937	209,78
Kalangala	23,446	25,413	16,839	18,005	18,175	18,547	25,938	39,466	40,20
Kamuli	137,941	149,515	99,073	105,932	106,932	109,123	152,610	232,202	236,53
Kapchorwa	4,167	4,517	2,993	3,200	3,230	3,297	4,611	7,016	7,14
Kasese	23,619	25,601	16,964	18,138	18,310	18,685	26,131	39,760	40,50
Kibaale	19,631	21,278	14,099	15,075	15,217	15,529	21,718	33,044	33,66
Kiboga	51,255	55,556	36,813	39,362	39,733	40,547	56,706	86,280	87,85
Kitgum	160,492	173,959	115,271	123,252	124,415	126,965	177,563	270,168	275,21
Kotido	1,241	1,345	891	953	962	981	1,372	2,087	2,12
Kumi	149,879	162,455	107,648	115,101	116,118	118,568	165,819	252,300	257,00
Lira	151,454	164,162	108,779	116,310	117,408	119,814	167,562	254,951	259,71
Luwero	25,151	27,261	18,064	19,315	19,497	19,896	27,825	42,337	43,12
Masaka	54,748	59,342	39,322	42,044	42,441	43,311	60,571	92,161	93,88
Masindi	122,922	133,236	88,286	94,398	95,290	97,242	135,994	206,920	210,78
Mbale	217,597	235,855	156,285	167,105	168,683	172,139	240,739	366,293	373,12
Mbarara	81,314	88,137	58,402	62,445	63,035	64,327	89,962	136,881	139,43
Moroto	1,518	1,645	1,090	1,165	1,176	1,201	1,680	2,556	2,60
Moyo	21,012	22,775	15,091	16,136	16,288	16,622	23,246	35,370	36,02
Mpigi	92,315	100,061	66,304	70,894	71,564	73,030	102,134	155,400	158,30
Mubende	4,271	4,629	3,067	3,279	3,310	3,378	4,724	7,188	7,32
Mukono	103,045	111,691	74,010	79,134	79,881	81,518	114,004	173,461	176,61
Nebbi	128,950	139,770	92,616	99,028	99,963	102,011	142,664	217,068	221,12
Pallisa	85,732	92,926	61,576	65,839	66,461	67,823	94,852	144,320	147,02
Rakai	31,345	33,975	22,513	24,072	24,299	24,797	34,679	52,765	53,72
Rukungiri	7,843	8,501	5,633	6,023	6,080	6,204	8,676	13,201	13,42
Soroti	108,475	117,577	77,910	83,304	84,091	85,814	120,012	182,603	186,02
Tororo	67,005	72,627	48,125	51,457	51,943	53,007	74,131	112,793	114,82
TOTAL	2,895,999	3,138,996	2,079,996	2,224,000	2,245,000	2,291,000	3,204,000	4,875,000	4,966,00

Maize

UBOS Crop Survey Module 1999/2000

Production of Maize by Region (MT)

	Central	Eastern	Northern	Western	Total
1995/1996	46,000	282,000	57,000	149,000	534,000
1999/2000	151,000	408,000	61,000	124,000	744,000

MAAIF Production of Maize (MT) by District

District	1992	1993	1994	1995	1996	1997	1998	1999	2000
Apac	31,851	38,977	41,207	44,261	36,795	35,874	44,794	51,048	53,132
Arua	36,364	44,500	47,046	50,533	42,009	40,958	51,142	58,282	60,662
Bundibugyo	1,268	1,552	1,641	1,763	1,465	1,429	1,784	2,033	2,116
Bushenyi	13,461	16,473	17,415	18,716	1,551	15,161	18,931	21,574	22,455
Gulu	29,728	36,379	38,460	41,311	34,343	33,483	41,809	47,645	49,591
Hoiima	21,506	26,318	27,824	29,886	24,845	24,223	30,246	34,469	35,876
Iganga	47,931	58,655	62,011	66,607	55,372	53,986	67,410	76,821	79,958
Jinja	12,421	15,200	16,070	17,261	14,350	13,990	17,469	19,907	20,720
Kabale	16,019	19,603	20,725	22,261	18,506	18,043	22,529	25,675	26,723
Kabarole	19,591	23,974	25,346	27,225	22,632	22,066	27,553	31,399	32,682
Kalangala	616	754	797	856	712	694	867	988	1,028
Kamuli	35,002	42,833	45,284	48,640	40,436	39,424	49,227	56,099	58,390
Kapchorwa	35,715	43,706	46,207	49,632	41,260	40,227	50,229	57,242	59,579
Kasese	8,654	10,590	11,196	12,026	9,997	9,747	12,171	13,870	14,436
Kibaale	2,913	3,565	3,769	4,048	3,365	3,281	4,097	4,669	4,859
Kiboga	3,093	3,785	4,002	4,299	3,574	3,484	4,350	4,958	5,160
Kisoro	6,863	8,399	8,880	9,538	7,929	7,731	9,653	11,001	11,450
Kitgum	30,569	37,409	39,549	42,480	35,315	34,431	42,992	48,994	50,995
Kotido	4,132	5,057	5,346	5,742	4,774	4,654	5,811	6,623	6,893
Kumi	17,678	21,633	22,871	24,566	20,422	19,911	24,862	28,333	29,490
Lira	41,926	51,307	54,242	58,262	48,435	47,222	58,964	67,196	69,940
Luwero	7,971	9,754	10,312	11,076	9,208	8,978	11,210	12,775	13,297
Masaka	6,740	8,248	8,720	9,366	7,786	7,592	9,480	10,803	11,244
Masindi	36,522	44,694	47,251	50,753	42,192	41,136	51,364	58,535	60,926
Mbale	34,929	42,744	45,190	48,539	40,352	39,342	49,124	55,983	58,269
Mbarara	21,569	26,395	27,905	29,973	24,918	24,294	30,335	34,570	35,981
Moroto	9,718	11,892	12,572	13,504	11,226	10,945	13,666	15,574	16,210
Moyo	3,332	4,078	4,311	4,631	3,849	3,753	4,686	5,340	5,558
Mpigi	9,751	11,933	12,616	13,551	11,265	10,983	13,714	15,629	16,267
Mubende	7,215	8,829	9,334	10,026	8,335	8,126	10,147	11,563	12,035
Mukono	5,599	6,852	7,244	7,781	6,468	6,307	7,875	8,975	9,341
Nebbi	15,778	19,308	20,413	21,926	18,228	17,771	22,190	25,288	26,320
Pallisa	19,732	24,147	25,529	27,421	22,796	22,225	27,751	31,626	32,917
Rakai	13,279	16,250	17,180	18,453	15,341	14,957	18,676	21,283	22,153
Rukungiri	6,310	7,722	8,164	8,769	7,290	7,107	8,874	10,113	10,526
Soroti	14,524	17,774	18,791	20,184	16,779	16,359	20,427	23,278	24,229
Tororo	26,729	32,709	34,580	37,143	30,878	30,105	37,591	42,839	44,588
TOTAL	656,999	803,998	850,000	913,000	759,000	740,000	924,000	1,053,000	1,096,000

Sweet Potato

UBOS Crop Survey Module 1999/2000 (MT)

Production of Sweet Potatoes by Region

	Central	Eastern	Northern	Western	Total
1995/1996	221,000	1,475,000	297,000	996,000	2,989,000
1999/2000	507,000	1,029,000	51,000	1,034,000	2,621,000

MAAIF Production of Sweet Potatoes (MT) by District

District	1992	1993	1994	1995	1996	1997	1998	1999	2000
Apac	98,512	101,253	110,096	114,957	80,051	97,944	112,527	121,732	124,007
Arua	61,997	63,722	69,287	72,346	50,379	61,639	70,817	76,609	78,041
Bushenyi	31,783	32,667	35,520	37,088	25,827	31,599	36,304	39,274	40,008
Gulu	91,923	94,480	102,731	107,267	74,696	91,391	104,998	113,587	115,710
Hoima	98,655	101,400	110,256	115,124	80,167	98,086	112,690	121,908	124,187
Iganga	105,662	108,602	118,087	123,301	85,861	105,052	120,693	130,566	133,007
Jinja	61,591	63,305	68,834	71,873	50,049	61,236	70,354	76,109	77,531
Kabale	64,328	66,118	71,892	75,066	52,273	63,956	73,478	79,489	80,975
Kabarole	60,505	62,188	67,619	70,604	49,166	60,155	69,112	74,765	76,162
Kalangala	12,872	13,230	14,385	15,020	10,459	12,797	14,702	15,905	16,202
Kamuli	80,724	82,970	90,216	94,199	65,596	80,258	92,208	99,750	101,615
Kapchorwa	18,545	19,061	20,726	21,641	15,070	18,438	21,183	22,916	23,344
Kasese	502	516	561	586	408	499	573	620	632
Kibaale	12,788	13,144	14,292	14,923	10,392	12,714	14,607	15,802	16,097
Kiboga	35,214	36,194	39,355	41,093	28,615	35,011	40,224	43,514	44,328
Kisoro	4,134	4,249	4,620	4,824	3,359	4,110	4,722	5,108	5,204
Kitgum	94,592	97,224	105,715	110,382	76,866	94,046	108,049	116,887	119,072
Kotido	1,226	1,260	1,370	1,430	996	1,219	1,400	1,515	1,543
Kumi	9,240	94,980	103,275	107,835	75,091	91,875	105,554	114,189	116,323
Lira	55,095	56,628	61,574	64,293	44,771	54,777	62,933	68,081	69,353
Luwero	9,568	9,834	10,693	11,165	775	9,513	10,929	11,823	12,044
Masaka	56,808	58,388	63,487	66,290	46,161	56,479	64,888	70,196	71,508
Masindi	93,440	96,040	104,428	109,039	75,930	92,901	106,733	115,464	117,622
Mbale	128,128	131,693	143,194	149,516	104,117	127,388	146,355	158,327	161,286
Mbarara	62,247	63,979	69,567	72,639	50,582	61,888	71,103	76,919	78,357
Moroto	3,045	3,130	3,403	3,553	2,474	3,027	3,478	3,762	3,832
Moyo	21,870	22,478	24,441	25,520	17,771	21,743	24,980	27,024	27,529
Mpigi	30,722	31,577	34,335	35,851	24,965	30,545	35,093	37,964	38,673
Mubende	19,703	20,251	22,020	22,992	16,011	19,589	22,506	24,347	24,802
Mukono	63,141	64,898	70,566	73,682	51,309	62,777	72,124	78,024	79,482
Nebbi	32,508	33,412	36,330	37,934	26,416	32,320	37,132	40,170	40,920
Pallisa	85,989	88,381	96,100	100,343	69,874	85,492	98,221	106,256	108,242
Rakai	66,677	68,532	74,517	77,807	54,181	66,292	76,162	82,392	83,933
Rukungiri	37,679	38,727	42,109	43,968	30,618	37,461	43,039	46,559	47,430
Soroti	72,277	74,288	80,776	84,342	58,732	71,860	82,559	89,313	90,982
Tororo	35,427	36,413	39,593	41,341	28,788	35,223	40,467	43,778	44,596
TOTAL	1,904,999	1,958,000	2,129,001	2,223,000	1,548,000	1,894,000	2,176,000	2,354,000	2,398,000

Finger Millet

UBOS Crop Survey Module 1999/2000 (MT)

Production of Finger Millet by Region

	Central	Eastern	Northern	Western	Total
1995/1996	4,000	92,000	35,000	62,000	193,000
1999/2000	10,000	66,000	37,000	72,000	185,000

MAAIF Production of Finger Millet by District (MT)

District	1992	1993	1994	1995	1996	1997	1998	1999	2000
Apac	49,605	47,727	47,906	49,634	34,555	39,424	50,419	47,592	41,937
Arua	29,984	28,849	28,740	29,777	20,730	23,652	30,248	28,552	25,160
Bundibugyo	30	29	29	30	21	24	31	29	26
Bushenyi	13,153	12,655	12,605	13,060	9,092	10,373	13,266	12,522	11,034
Gulu	41,294	39,731	39,681	41,112	28,622	32,656	41,763	39,421	34,738
Hoima	22,333	21,488	21,638	22,418	15,608	17,807	22,773	21,496	18,942
Iganga	49,762	47,878	47,768	49,491	34,456	39,311	50,274	47,455	41,817
Jinja	3,868	3,722	3,632	3,763	2,620	2,989	3,823	3,608	3,180
Kabale	17,650	16,982	17,032	17,646	12,285	14,016	17,925	16,920	14,909
Kabarole	11,606	11,167	111,167	11,518	8,019	9,149	11,701	11,044	9,732
Kamuli	44,879	43,180	43,310	44,872	31,240	35,642	45,582	43,026	37,914
Kapchorwa	10,081	9,699	9,639	9,987	6,953	7,932	10,144	9,575	8,438
Kasese	98	94	89	92	64	73	93	88	78
Kibaale	802	772	777	805	560	639	817	771	680
Kiboga	667	642	600	622	433	494	632	596	525
Kisoro	11,767	11,322	11,274	11,681	8,132	9,278	11,865	11,200	9,869
Kitgum	43,342	41,701	42,001	43,516	30,296	34,565	44,205	41,726	36,768
Kotido	3,194	3,073	3,113	3,225	2,245	2,562	3,277	3,093	2,725
Kumi	39,680	38,178	37,878	39,244	27,322	31,172	39,865	37,630	33,159
Lira	43,160	41,526	41,483	42,979	29,922	34,138	43,659	41,210	36,314
Luwero	1,822	1,753	1,786	1,850	1,288	1,470	1,880	1,775	1,564
Masaka	470	452	432	448	312	356	455	430	379
Masindi	26,095	25,107	25,094	25,999	18,101	20,651	26,410	24,929	21,967
Mbale	30,647	29,487	29,377	30,436	21,190	24,176	30,918	29,185	25,717
Mbarara	23,335	22,452	22,562	23,376	16,274	18,567	23,745	22,414	19,751
Moroto	1,630	1,568	1,590	1,647	1,147	1,308	1,673	1,579	1,391
Moyo	2,230	2,146	2,196	2,275	1,584	1,807	2,311	2,181	1,922
Mpigi	314	302	295	306	213	243	311	293	258
Mubende	1,000	962	919	952	663	756	967	913	804
Mukono	4,098	3,943	3,900	4,041	2,813	3,210	4,105	3,875	3,415
Nebbi	14,242	13,703	13,746	14,242	9,915	11,312	14,467	13,656	12,033
Pallisa	15,119	14,547	14,444	14,965	10,419	11,887	15,202	14,350	12,645
Rakai	786	756	760	787	548	625	799	754	665
Rukungiri	5,114	4,920	4,970	5,149	3,585	4,090	5,231	4,937	4,351
Soroti	34,890	33,569	33,617	34,829	24,248	27,665	35,380	33,396	29,429
Tororo	35,253	33,919	34,000	35,226	24,525	27,980	35,783	33,777	29,764
TOTAL	634,000	610,001	610,000	632,000	440,000	502,000	642,000	606,000	534,000

Sorghum

UBOS Crop Survey Module 1999/2000 Production of Sorghum by Region (MT)

	Central	Eastern	Northern	Western	Total
1995/1996	6,000	45,000	40,000	111,000	202,000
1999/2000	8,000	44,000	24,000	37,000	113,000

MAAIF Production of Sorghum (MT) by District

District	1992	1993	1994	1995	1996	1997	1998	1999	2000
Apac	15,274	15,600	15,885	16,252	12,138	11,975	17,107	16,822	14,704
Arua	29,030	29,649	30,191	30,888	23,069	22,759	32,513	31,971	27,946
Bundibugyo	132	135	137	140	105	103	147	145	126
Bushenyi	6,920	7,068	7,197	7,363	5,499	5,425	7,750	7,621	6,661
Gulu	33,492	34,206	34,831	35,635	26,615	26,257	37,510	36,885	32,241
Hoima	6,098	6,228	6,342	6,488	4,846	4,871	6,959	6,843	5,981
Iganga	9,484	9,686	9,863	10,091	7,536	7,435	10,621	10,444	9,129
Kabale	14,597	14,908	15,180	15,530	11,599	11,443	16,347	16,075	14,051
Kabarole	8,746	8,933	9,096	9,306	6,950	6,857	9,796	9,632	8,420
Kalangala	77	79	80	82	61	60	86	84	74
Kamuli	1,465	1,496	1,523	1,558	1,164	1,148	1,640	1,613	1,410
Kapchorwa	117	119	121	124	92	91	130	128	112
Kasese	128	131	133	136	102	100	143	140	123
Kibaale	787	804	819	838	626	617	881	867	758
Kiboga	231	236	240	246	183	181	259	254	222
Kisoro	8,354	8,532	8,688	8,889	6,639	6,549	9,356	9,200	8,041
Kitgum	30,936	31,596	32,173	32,916	24,584	24,254	34,649	34,071	29,781
Kotido	27,095	27,673	28,179	28,829	21,532	21,243	30,347	29,841	26,084
Kumi	16,147	16,491	16,792	17,180	12,831	12,659	18,084	17,783	15,544
Lira	35,634	36,394	37,059	37,914	28,317	27,937	39,910	39,245	34,304
Luwero	416	425	433	443	331	326	466	458	400
Masaka	5,213	5,324	5,421	5,546	4,142	4,087	5,839	5,741	5,018
Masindi	2,187	2,234	2,275	2,328	1,738	1,715	2,450	2,409	2,106
Mbale	6,081	6,211	6,325	6,471	4,833	4,768	6,811	6,698	5,855
Mbarara	19,379	19,792	20,154	20,619	15,400	15,193	21,704	21,343	18,655
Moroto	23,047	23,539	23,969	24,522	18,315	18,069	25,813	25,383	22,187
Moyo	4,567	4,664	4,749	4,859	3,629	3,580	5,114	5,029	4,396
Mpigi	1,719	1,756	1,788	1,829	1,366	1,348	1,926	1,894	1,655
Mubende	453	463	471	482	360	355	507	499	436
Mukono	2,018	2,061	2,099	2,147	1,604	1,582	2,260	2,222	1,943
Nebbi	10,522	10,746	10,942	11,195	8,361	8,249	11,784	11,588	10,129
Pallisa	6,917	7,065	7,194	7,360	5,497	5,423	7,747	7,618	6,659
Rakai	4,354	4,447	4,528	4,633	3,460	3,413	4,876	4,794	4,191
Rukungiri	4,532	4,629	4,714	4,823	3,602	3,554	5,077	4,993	4,364
Soroti	23,075	23,567	23,998	24,552	18,337	18,091	25,844	25,414	22,214
Tororo	15,777	16,114	16,409	16,788	12,538	12,370	17,671	17,377	15,189
TOTAL	375,001	383,001	389,998	399,000	298,000	294,000	420,000	413,000	361,000

Sesame

MAAIF Production of Sesame (MT) by District

District	1992	1993	1994	1995	1996	1997	1998	1999	2000
Apac	12,237	12,932	12,070	12,242	12,587	12,587	13,277	16,035	16,725
Arua	2,381	2,496	2,330	2,363	2,430	2,430	2,563	3,096	3,229
Gulu	13,462	14,111	13,171	13,359	13,735	13,735	14,488	17,498	18,251
Hoima	455	477	445	451	464	464	489	591	617
Kamuli	931	976	911	924	950	950	1,002	1,210	1,262
Kasese	69	72	67	68	70	70	74	89	93
Kibaale	170	178	166	168	173	173	182	220	230
Kitgum	14,460	15,157	14,147	14,349	14,753	14,753	15,561	18,795	19,603
Kotido	3,276	3,434	3,205	3,251	3,342	3,342	3,525	4,258	4,441
Kumi	123	129	120	122	125	125	132	159	166
Lira	13,522	14,174	13,229	13,418	13,796	13,796	14,552	17,576	18,332
Luwero	92	96	90	91	94	94	99	120	125
Masindi	860	901	841	853	877	877	925	1,117	1,165
Moroto	232	243	227	230	237	237	250	302	315
Moyo	1,326	1,390	1,297	1,316	1,353	1,353	1,427	1,724	1,798
Mpigi	6	6	6	6	6	6	6	8	8
Mubende	25	26	24	24	25	25	26	32	33
Mukono	105	110	103	104	107	107	113	136	142
Nebbi	2,633	2,760	2,576	2,613	2,686	2,686	2,833	3,422	3,569
Pallisa	169	177	165	167	172	172	181	219	229
Soroti	3,328	3,488	3,256	3,303	3,396	3,396	3,582	4,326	4,512
Tororo	517	542	506	513	528	528	557	673	702
TOTAL	71,550	74,998	70,000	71,000	73,000	73,000	77,000	93,000	97,000

Soybean

MAAIF Production of Soybean by District (MT)

District	1992	1993	1994	1995	1996	1997	1998	1999	2000
Apac	10	13	15	16	17	17	19	20	24
Arua	125	158	177	186	205	198	217	238	283
Bundibugyo	256	324	363	382	421	407	446	489	581
Bushenyi	706	893	1,000	1,053	1,160	1,120	1,227	1,347	1,600
Hoima	690	872	976	1,028	1,132	1,093	1,197	1,314	1,561
Iganga	8,781	11,101	12,426	13,088	14,414	13,917	15,242	16,734	19,881
Jinja	570	721	807	850	936	904	990	1,087	1,291
Kabarole	1,106	1,398	1,565	1,648	1,815	1,753	1,920	2,108	2,504
Kalangala	51	64	72	76	84	81	89	97	116
Kamuli	15,197	19,212	21,506	22,652	24,946	24,086	26,380	28,961	34,409
Kasese	496	627	702	739	814	786	861	945	1,123
Kibaale	123	155	174	183	202	195	214	234	279
Lira	12,612	15,944	17,847	18,798	20,702	19,988	21,892	24,033	28,554
Luwero	951	1,202	1,346	1,418	1,561	1,507	1,651	1,812	2,153
Masaka	285	360	403	424	467	451	494	542	644
Masindi	419	530	593	625	688	664	727	798	949
Mbale	978	1,236	1,384	1,458	1,605	1,550	1,698	1,864	2,214
Mbarara	507	641	718	756	833	804	881	967	1,149
Moroto	26	33	37	39	43	41	45	49	59
Mpigi	557	704	788	830	914	883	967	1,062	1,261
Mubende	557	704	788	830	914	883	967	1,062	1,261
Mukono	132	167	187	197	217	209	229	251	299
Nebbi	212	268	300	316	348	336	368	404	480
Pallisa	3,688	4,662	5,219	5,497	6,054	5,845	6,402	7,028	8,350
Rakai	207	262	293	309	340	328	359	394	469
Tororo	3,757	4,750	5,317	5,600	6,167	5,955	6,522	7,160	8,507
TOTAL	52,999	67,001	75,003	79,000	87,000	84,000	92,000	101,000	120,000

Beans

UBOS Crop Survey Module 1999/2000

Production of Beans by Region (MT)

	Central	Eastern	Northern	Western	Total
1995/1996	66,000	45,000	35,000	189,000	335,000
1999/2000	150,000	91,000	59,000	195,000	495,000

MAAIF Production of Beans (MT) by District

District	1992	1993	1994	1995	1996	1997	1998	1999	2000
Apac	24,968	26,583	23,478	24,223	14,534	13,727	24,038	24,907	26,088
Arua	15,324	16,315	14,409	14,866	8,920	8,424	14,752	15,285	16,009
Bundibugyo	2,564	2,730	2,411	2,488	1,493	1,410	2,469	2,558	2,680
Bushenyi	7,387	7,865	6,946	7,167	4,300	4,061	7,111	7,369	7,718
Gulu	19,548	20,812	18,381	18,965	11,379	10,747	18,819	19,500	20,424
Hoima	10,835	11,536	10,188	10,511	6,307	5,956	10,430	10,807	11,319
Iganga	9,779	10,412	9,196	9,488	5,693	5,376	9,414	9,755	10,217
Jinja	10,612	11,298	9,978	10,295	6,177	5,834	10,216	10,586	11,087
Kabale	20,898	22,250	19,651	20,275	12,165	11,489	20,119	20,847	21,834
Kabarole	17,777	18,927	16,716	17,247	10,348	9,773	17,114	17,733	18,573
Kalangala	133	142	125	129	77	73	128	132	139
Kamuli	14,187	15,105	13,340	13,763	8,258	7,799	13,657	14,151	14,822
Kapchorwa	33,439	35,602	31,443	32,441	19,465	18,383	32,191	33,356	34,936
Kasese	2,372	2,525	2,230	2,301	1,380	1,304	2,283	2,366	2,478
Kibaale	3,182	3,388	2,992	3,087	1,852	1,749	3,063	3,174	3,324
Kiboga	1,978	2,106	1,860	1,919	1,151	1,087	1,903	1,972	2,066
Kisoro	3,755	3,998	3,531	3,643	2,186	2,064	3,614	3,745	3,923
Kitgum	18,241	19,421	17,152	17,697	10,618	10,028	17,560	18,196	19,058
Kotido	561	597	527	544	326	308	539	559	585
Kumi	8,900	9,476	8,369	8,635	5,181	4,893	8,568	8,878	9,299
Lira	23,303	24,810	21,912	22,608	13,565	12,811	22,434	23,245	24,347
Luwero	5,906	6,288	5,553	5,729	3,438	3,247	5,686	5,892	6,171
Masaka	9,603	8,095	7,149	7,376	4,426	4,180	7,320	7,585	7,944
Masindi	18,272	19,454	17,181	17,726	10,636	10,045	17,590	18,226	19,090
Mbale	26,798	28,531	25,198	25,998	15,599	14,732	25,798	26,731	27,997
Mbarara	18,212	19,390	17,125	17,669	10,601	10,045	17,590	18,226	19,090
Moroto	1,135	1,208	1,067	1,101	661	624	1,093	1,132	1,186
Moyo	375	399	352	363	218	206	361	374	391
Mpigi	6,838	7,280	6,430	6,634	3,980	3,759	6,583	6,821	7,144
Mubende	2,966	3,158	2,789	2,878	1,727	1,631	2,856	2,959	3,100
Mukono	979	10,432	9,213	9,505	5,703	5,386	9,432	9,773	10,236
Nebbi	5,366	5,713	5,046	5,206	3,124	2,950	5,166	5,353	5,606
Pallisa	4,041	4,302	3,799	3,920	2,352	2,221	3,889	4,030	4,221
Rakai	12,334	13,132	11,598	11,966	7,180	6,781	11,874	12,304	12,887
Rukungiri	3,507	3,734	3,298	3,403	2,042	1,928	3,376	3,498	3,664
Soroti	9,320	9,923	8,764	9,042	5,425	5,124	8,973	9,297	9,738
Tororo	19,784	21,064	18,603	19,194	11,516	10,876	19,045	19,734	20,669
TOTAL	401,998	428,001	378,000	390,000	234,000	221,000	387,000	401,000	420,000

Ground Nuts

UBOS Crop Survey Module 1999/2000 (MT)

Production of Ground Nuts by Region

	Central	Eastern	Northern	Western	Total
1995/1996	21,000	42,000	30,000	43,000	136,000
1999/2000	23,000	41,000	31,000	30,000	125,000

MAAIF Production of Ground Nuts by District (MT)

District	1992	1993	1994	1995	1996	1997	1998	1999	2000
Apac	8,873	9,235	8,571	8,692	7,545	5,493	8,451	8,270	7,908
Arua	11,245	11,704	10,863	11,016	9,563	6,962	10,711	10,481	10,022
Bundibugyo	328	341	316	320	278	203	312	306	292
Bushenyi	1,876	1,953	1,813	1,839	1,596	1,162	1,788	1,749	1,673
Gulu	12,875	13,401	12,438	12,613	10,949	7,971	12,263	12,000	11,475
Hoima	2,493	2,595	2,408	2,442	2,120	1,543	2,374	2,323	2,221
Iganga	6,071	6,319	5,865	5,948	5,163	3,759	5,783	5,659	5,411
Jinja	271	282	262	266	231	168	258	253	242
Kabale	254	264	245	248	216	157	242	236	226
Kabarole	4,522	4,707	4,369	4,431	3,846	2,800	4,308	4,215	4,031
Kalangala	87	91	84	85	74	54	83	53	51
Kamuli	4,691	4,882	4,531	4,595	3,989	2,904	4,468	4,372	4,180
Kapchorwa	658	685	636	645	560	408	628	614	587
Kasese	145	151	140	142	123	90	138	135	130
Kibaale	2,163	2,251	2,089	2,118	1,839	1,339	2,060	2,016	1,928
Kiboga	697	725	673	682	592	431	663	649	620
Kisoro	63	66	61	62	54	39	60	59	56
Kitgum	16,107	16,764	15,559	15,778	13,696	9,971	15,340	15,011	14,354
Kotido	2,004	2,086	1,936	1,963	1,704	1,241	1,909	1,868	1,786
Kumi	10,047	10,457	9,705	9,842	8,543	6,219	9,568	9,363	8,953
Lira	6,743	7,018	6,513	6,605	5,733	4,174	6,422	6,284	6,009
Luwero	2,206	2,296	2,131	2,161	1,876	1,366	2,102	2,057	1,966
Masaka	2,302	2,396	2,224	2,255	1,958	1,425	2,192	2,145	2,051
Masindi	3,302	3,437	3,190	3,235	2,808	2,044	3,145	3,077	2,942
Mbale	7,018	7,304	6,779	6,874	5,967	4,344	6,683	6,540	6,253
Mbarara	6,059	6,306	5,853	5,935	5,152	3,751	5,771	5,647	5,400
Moroto	294	306	284	288	250	182	280	274	262
Moyo	2,312	2,406	2,233	2,264	1,966	1,431	2,202	2,154	2,060
Mpigi	912	949	881	893	776	565	869	851	813
Mubende	1,044	1,087	1,009	1,023	888	647	995	974	931
Mukono	1,268	1,320	1,225	1,242	1,078	785	1,208	1,182	1,130
Nebbi	6,009	6,254	5,804	5,886	5,109	3,719	5,722	5,599	5,354
Pallisa	3,349	3,486	3,235	3,281	2,848	2,073	3,189	3,121	2,984
Rakai	2,027	2,110	1,958	1,986	1,724	1,255	1,931	1,889	1,807
Rukungiri	1,519	1,581	1,467	1,488	1,291	940	1,446	1,415	1,353
Soroti	6,673	6,945	6,446	6,537	5,674	4,131	6,355	6,219	5,947
Tororo	8,493	8,840	8,204	8,320	7,222	5,257	8,088	7,914	7,568
TOTAL	147,000	153,000	142,000	144,000	125,000	91,000	140,000	137,000	131,000

Rice

MAAIF Production of Rice (MT) by District

District	1992	1993	1994	1995	1996	1997	1998	1999	2000
Arua	272	296	308	310	328	320	360	380	432
Bundibugyo	1,291	1,405	1,462	1,471	1,557	1,519	1,709	1,804	2,051
Gulu	2,987	3,251	3,383	3,403	3,603	3,515	3,954	4,174	4,745
Iganga	3,721	4,049	4,213	4,238	4,487	4,377	4,924	5,198	5,909
Jinja	605	658	685	689	729	712	801	846	961
Kamuli	3,375	3,673	3,822	3,845	4,070	3,971	4,467	4,716	5,361
Kapchorwa	223	243	253	254	269	263	296	312	355
Kibaale	2,421	2,635	2,742	2,758	2,920	2,849	3,205	3,383	3,846
Kitgum	38	41	43	43	46	45	51	53	61
Kumi	6,610	7,193	7,485	7,530	7,971	7,777	8,749	9,235	10,499
Lira	446	485	505	508	538	525	591	623	709
Mbale	571	621	646	650	688	671	755	797	906
Moyo	410	446	464	467	494	482	542	572	651
Pallisa	21,376	23,262	24,205	24,350	25,777	25,148	28,292	29,863	33,950
Soroti	124	135	140	141	149	145	163	172	196
Tororo	23,530	25,606	26,644	26,804	28,374	27,682	31,142	32,872	37,371
TOTAL	68,000	73,999	77,000	77,461	82,000	80,000	90,000	95,000	108,000

Irish Potatoes

Irish Potato production statistics in ten selected districts of Uganda 2000 and 2001

Year	2000		2001*	
Districts	Ha	T	Ha	T
Kapchorwa	0	0	2,500	27,500
Mbale	840	10,080	1,050	12,600
Sironko	755	8,305	700	5,250
Mubende	0	0	4,800	28,800
Masaka	192	1,344	200	1,300
Mbarara	0	0	10,710	77,112
Bushenyi	0	0	800	5,600
Kisoro	24,930	448,740	25,160	452,750
Kabale	32,500	603,355	33,750	615,375
Nebbi	660	7,720	725	7,910
Total	59,877	1,079,544	80,395	1,234,197

*Annual production (Mt) are estimated from last years mean yield

Source: Wagoire et al, unpublished in Ferris et al 2001

MAAIF Production of Irish Potatoes (MT) by District

District	1992	1993	1994	1995	1996	1997	1998	1999	2000
Apac	652	779	896	979	774	877	935	1,094	1,164
Arua	3,061	3,655	4,203	4,591	3,632	4,112	4,386	5,129	5,460
Bundibugyo	2,703	3,227	3,711	4,054	3,207	3,630	3,872	4,527	4,820
Bushenyi	1,289	1,539	1,770	1,934	1,530	1,732	1,847	2,160	2,300
Hoima	2,683	3,204	3,685	4,025	3,184	3,605	3,845	4,496	4,787
Iganga	5,712	6,820	7,843	8,568	6,777	7,672	8,183	9,569	10,187
Jinja	5,610	6,698	7,703	8,415	6,656	7,536	8,038	9,399	10,006
Kabale	100,681	120,216	138,248	151,020	119,464	135,242	144,258	168,677	179,571
Kabarole	5,238	6,254	7,192	7,856	6,215	7,036	7,505	8,775	9,342
Kalangala	122	146	168	184	145	164	175	205	218
Kamuli	6,816	8,138	9,359	10,224	8,087	9,155	9,765	11,418	12,156
Kapchorwa	6,200	7,403	8,513	9,299	7,356	8,328	8,883	10,387	11,058
Kasese	5,694	6,799	7,819	8,541	6,757	7,649	8,159	9,540	10,156
Kibaale	2,273	2,714	3,121	3,409	2,697	3,053	3,257	3,808	4,054
Kiboga	1,637	1,955	2,248	2,456	1,943	2,199	2,346	2,743	2,920
Kisoro	27,543	32,887	37,820	41,314	32,681	36,998	39,465	46,145	49,125
Kitgum	96	115	132	144	114	129	138	161	171
Kumi	5,785	6,907	7,943	8,677	6,864	7,770	8,288	9,691	10,317
Lira	7,398	8,833	10,158	11,096	8,778	9,937	10,599	12,394	13,194
Luwero	9,675	11,552	13,285	14,512	11,480	12,996	13,862	16,209	17,256
Masaka	8,841	10,556	12,139	13,260	10,490	11,875	12,667	14,811	15,767
Masindi	2,675	3,194	3,673	4,012	3,174	3,593	3,833	4,481	4,771
Mbale	12,125	14,478	16,650	18,188	14,388	16,288	17,374	20,315	21,627
Mbarara	6,050	7,224	8,308	9,076	7,179	8,127	8,669	10,136	10,791
Moyo	211	252	290	317	251	284	303	354	377
Mpigi	2,539	3,032	3,487	3,809	3,013	3,411	3,638	4,254	4,529
Mubende	2,455	2,931	3,371	3,682	2,913	3,298	3,518	4,113	4,379
Mukono	1,478	1,765	2,030	2,218	1,754	1,986	2,118	2,477	2,637
Nebbi	3,037	3,626	4,170	4,555	3,603	4,079	4,351	5,087	5,416
Pallisa	2,191	2,613	3,005	3,283	2,597	2,940	3,136	3,667	3,904
Rakai	3,460	4,131	4,751	5,190	4,105	4,648	4,958	5,797	6,172
Rukungiri	8,457	10,098	11,613	12,686	10,035	11,360	12,117	14,168	15,084
Soroti	6,453	7,705	8,861	9,680	7,657	8,668	9,246	10,811	11,509
Tororo	7,161	8,554	9,837	10,746	8,500	9,623	10,265	12,002	12,777
TOTAL	268,001	320,000	368,002	402,000	318,000	360,000	384,000	449,000	478,000

Cow Peas

MAAIF Production of Cow Peas (MT) by District

District	1992	1993	1994	1995	1996	1997	1998	1999	2000
Apac	581	614	643	638	671	657	714	886	857
Arua	6,082	6,428	6,727	6,673	7,026	6,876	7,474	9,268	8,969
Bundibugyo	43	45	47	47	49	48	52	65	63
Gulu	3,430	3,625	3,794	3,763	3,962	3,878	4,215	5,227	5,058
Hoima	173	183	192	190	200	196	213	264	256
Iganga	670	708	741	735	774	757	823	1,020	987
Jinja	26	27	28	28	29	29	32	39	38
Kabarole	15	16	17	17	18	17	18	23	22
Kamuli	136	144	151	150	158	154	167	208	201
Kibaale	53	56	59	58	61	60	65	81	78
Kitgum	4,418	4,670	4,887	4,848	5,104	4,996	5,430	6,734	6,517
Kotido	4,055	4,286	4,485	4,449	4,685	4,585	4,984	6,180	5,980
Kumi	5,270	5,570	5,829	5,782	6,088	5,959	6,477	8,032	7,773
Lira	2,063	2,180	2,281	2,263	2,383	2,332	2,535	3,143	3,042
Luwero	630	666	697	691	728	712	774	960	929
Masindi	10	11	12	12	12	12	13	16	16
Mbale	829	876	917	909	958	937	1,018	1,263	1,222
Moroto	109	115	120	119	126	123	134	166	160
Moyo	1,409	1,489	1,558	1,546	1,627	1,593	1,732	2,147	2,078
Mubende	8	8	8	8	9	8	9	11	10
Nebbi	3,070	3,245	3,396	3,369	3,547	3,471	3,773	4,678	4,527
Pallisa	2,488	2,630	2,752	2,730	2,875	2,813	3,058	3,791	3,669
Rakai	45	48	50	50	52	51	55	69	67
Soroti	3,762	3,976	4,161	4,127	4,346	4,253	4,623	5,732	5,547
Tororo	1,309	1,384	1,448	1,437	1,513	1,480	1,609	1,995	1,930
TOTAL	40,684	43,000	45,000	44,637	47,000	46,000	50,000	62,000	60,000

Annex IV – Livestock numbers by type and district

Busia District

DISTRICT	SCOUNTY	CATTLE-EXOTIC	CATTLE-CROSS	CATTLE-LOCAL	TOTAL	H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
BUSIA	BUTEBA	0	0	0	743	2320	420	189	99	10369	971	
BUSIA	BUTEBA	0	0	0	241	1526	487	56	72	11820	526	
BUSIA	BUHEHE	0	0	0	331	703	340	103	37	4055	165	
BUSIA	BUHEHE	0	0	0	523	1092	212	32	59	4683	115	
BUSIA	BUHEHE	0	0	0	386	1172	382	61	142	7068	258	
BUSIA	MASABA	0	0	0	422	1414	176	34	54	5176	214	
BUSIA	MASABA	0	0	0	141	985	90	36	62	399	220	
BUSIA	MASABA	0	0	0	337	1068	190	33	61	2378	224	
BUSIA	LUMINO	0	0	0	609	1412	136	39	58	4625	310	
BUSIA	LUMINO	0	0	0	141	155	49	3	0	2004	230	
BUSIA	LUMINO	0	0	0	448	575	139	18	92	4036	219	
BUSIA	LUMINO	0	0	0	854	585	90	19	114	4868	391	
BUSIA	TOWN											
BUSIA	COUNCIL	0	0	0	318	792	36	39	137	4347	1240	
BUSIA	BUSITEMA	0	0	0	349	990	251	91	102	3383	181	
BUSIA	BUSITEMA	0	0	0	281	954	185	109	22	2206	270	
BUSIA	BUSITEMA	0	0	0	364	846	164	35	62	2244	284	
BUSIA	BULUMBI	0	0	0	155	1202	186	21	10	6869	145	
BUSIA	BULUMBI	0	0	0	229	1094	181	111	27	4233	134	
BUSIA	BULUMBI	0	0	0	214	1343	247	69	153	4291	178	
BUSIA	BULUMBI	0	0	0	602	1202	249	98	117	5488	429	
BUSIA	DABANI	0	0	0	682	365	100	71	98	2413	270	
BUSIA	DABANI	0	0	0	762	519	242	208	0	3042	43	
BUSIA	DABANI	0	0	0	508	436	60	26	33	2336	19	
BUSIA	DABANI	0	0	0	665	626	36	12	0	2009	8	
BUSIA	DABANI	0	0	0	797	841	76	39	3	2455	82	
BUSIA	MASAFU	0	0	0	265	1091	203	45	47	4791	125	
BUSIA	MASAFU	0	0	0	226	986	186	61	15	4902	157	
BUSIA	MASAFU	0	0	0	430	929	224	32	53	4891	157	
BUSIA	MASAFU	0	0	0	384	722	189	89	12	2615	117	

DISTRICT	SCOUNTY	CATTLE-EXOTIC	CATTLE-CROSS	CATTLE-LOCAL	TOTAL	H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
BUSIA	LUNYO	0	0	0	230	608	329	114	64	5241	106	
BUSIA	LUNYO	0	0	0	173	441	108	85	21	4986	261	
BUSIA	LUNYO	0	0	0	313	424	173	162	61	5218	189	
BUSIA	LUNYO	0	0	0	297	586	214	102	81	6861	121	
BUSIA	LUNYO	0	0	0	288	316	188	94	42	6971	92	
BUSIA	LUNYO	0	0	0	384	509	201	138	38	5321	134	
BUSIA	LUNYO	0	0	0	268	321	164	114	16	4146	82	
BUSIA	LUNYO	0	0	0	260	407	174	105	29	3294	106	
TOTAL		0	0	0	14620	31557	2693	7077	2093	166034	8773	

Source: (FITCA Livestock Census, 2001).

Bugiri District

DISTRICT	SCOUNTY	CATTLE-EXOTIC	CATTLE-CROSS	CATTLE-LOCAL	TOTAL H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
BUGIRI	BANDA	0	0	75	75	1883	366	23	40	4893	486
BUGIRI	BANDA	0	0	111	111	1233	351	17	6	5187	488
BUGIRI	BANDA	0	0	110	110	994	255	8	28	3422	175
BUGIRI	BANDA	0	0	309	309	1433	339	34	56	3489	432
BUGIRI	BANDA	0	0	55	55	508	132	6	32	1313	203
BUGIRI	MUTUMBA	0	0	654	654	3361	377	77	31	11450	1952
BUGIRI	MUTUMBA	0	0	1055	1055	3364	655	191	71	7776	1227
BUGIRI	BUYINJA	0	0	29	29	1030	7	34	37	3863	588
BUGIRI	BUYINJA	0	0	713	713	792	152	34	21	3274	776
BUGIRI	BUYINJA	0	0	261	261	1575	183	14	19	4497	284
BUGIRI	BUYINJA	0	0	521	521	1085	106	33	8	2783	111
BUGIRI	BUSWALE	0	0	272	272	1539	284	67	67	5278	373
BUGIRI	BUSWALE	0	0	63	63	1101	187	32	48	5697	269
BUGIRI	BUSWALE	0	0	46	46	674	47	22	30	2863	128
BUGIRI	BUSWALE	0	0	228	228	1379	274	28	153	5558	301
BUGIRI	BULIDHA	0	0	88	88	639	5	34	5	2926	299
BUGIRI	BULIDHA	0	0	357	357	1598	36	115	200	6017	793
BUGIRI	BULIDHA	0	0	340	340	420	48	39	92	1416	312
BUGIRI	NANKOMA	0	4	660	664	2085	191	146	256	7735	646
BUGIRI	NANKOMA	0	0	457	457	1431	52	43	38	4028	408
BUGIRI	NANKOMA	0	0	1408	1408	1153	42	37	143	4737	562
BUGIRI	BUDHAYA	0	12	117	129	779	25	47	28	3626	252
BUGIRI	BUDHAYA	0	3	447	450	1954	233	81	52	4867	612
BUGIRI	MUTERERE	0	0	80	80	895	162	43	105	4670	272
BUGIRI	MUTERERE	0	16	127	143	1233	80	37	202	5027	635
BUGIRI	BULESA	0	0	408	408	710	111	73	26	2953	254
BUGIRI	BULESA	0	1	262	263	1546	197	188	38	5733	567
BUGIRI	BULESA	0	4	320	324	1513	150	227	25	6405	1207
BUGIRI	BUWUNGA	0	16	382	398	340	31	43	77	2612	389
BUGIRI	BUWUNGA	0	0	260	260	482	47	35	108	1066	105
BUGIRI	BUWUNGA	0	0	980	980	2437	95	23	69	2529	216

DISTRICT	SCOUNTY	CATTLE-EXOTIC	CATTLE-CROSS	CATTLE-LOCAL	TOTAL H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
BUGIRI	BUWUNGA	0	0	483	483	1043	25	76	106	4435	273
BUGIRI	BUWUNGA	0	0	607	607	1083	12	52	63	3789	163
BUGIRI	BULUGUYI	0	22	2389	2411	693	163	244	97	2549	234
BUGIRI	BULUGUYI	0	0	979	979	254	80	65	9	508	84
BUGIRI	BULUGUYI	0	0	3574	3574	984	91	489	9	2804	432
BUGIRI	BUGIRI										
BUGIRI	T/C	0	18	347	365	627	23	48	15	2570	325
BUGIRI	BUGIRI										
BUGIRI	T/C	0	6	120	126	353	1	30	6	994	210
BUGIRI	KAPYANGA	0	18	744	762	1104	284	134	117	3944	439
BUGIRI	KAPYANGA	0	0	1401	1401	2067	541	230	18	7502	1069
BUGIRI	KAPYANGA	0	12	1110	1122	1909	350	112	93	6781	934
BUGIRI	KAPYANGA	0	13	1202	1215	975	97	621	41	2857	312
BUGIRI	KAPYANGA	0	0	298	298	656	39	41	47	2106	206
BUGIRI	IWEMBA	0	0	2070	2070	2165	99	409	24	3063	500
BUGIRI	IWEMBA	0	4	1791	1795	1096	236	2673	4	4951	179
BUGIRI	NABUKALU	0	0	727	727	538	24	70	41	1596	259
BUGIRI	NABUKALU	0	0	796	796	187	27	118	13	797	166
BUGIRI	NABUKALU	0	0	698	698	665	21	104	12	1329	394
BUGIRI	NABUKALU	0	0	609	609	652	29	47	15	2590	228
BUGIRI	NABUKALU	0	83	1809	1892	593	11	141	10	1319	198
TOTAL		0	232	32949	33181	58810	7535	7373	2851	194174	21927

Source: (FITCA Livestock Census, 2001).

Mayuge District

DISTRICT	SUBCOUNTY	CATTLE-CROSS	CATTLE-LOCAL	TOTAL H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
MAYUGE	BAITAMBOGWE	5	365	370	266	43	93	6	980	79
MAYUGE	BAITAMBOGWE	14	512	526	257	50	67	17	747	37
MAYUGE	BAITAMBOGWE	41	404	445	293	76	160	8	1128	135
MAYUGE	BAITAMBOGWE	189	641	830	972	59	276	0	3321	404
MAYUGE	BAITAMBOGWE	39	345	384	181	26	111	0	1166	71
MAYUGE	BAITAMBOGWE	32	534	566	594	74	168	16	1132	189
MAYUGE	BUWAYA	11	620	631	928	49	161	201	6711	120
MAYUGE	BUWAYA	6	634	640	2720	82	307	62	3234	120
MAYUGE	BUWAYA	7	646	653	814	58	62	10	3319	106
MAYUGE	BUWAYA	13	622	635	1880	86	240	106	2998	120
MAYUGE	BUWAYA	0	482	482	647	48	55	452	1676	107
MAYUGE	MALONGO	0	813	813	1058	29	16	24	2247	391
MAYUGE	MALONGO	0	41	41	396	22	0	0	893	151
MAYUGE	MALONGO	0	170	170	1317	132	13	0	3368	451
MAYUGE	MALONGO	0	105	105	452	4	20	0	1292	451
MAYUGE	MALONGO	0	28	28	352	0	0	0	1025	151
MAYUGE	MALONGO	0	87	87	795	130	11	0	1818	505
MAYUGE	IMANYIRO	6	446	452	612	46	279	1049	8103	271
MAYUGE	IMANYIRO	0	626	626	741	20	259	564	3881	608
MAYUGE	IMANYIRO	2	392	394	1187	48	184	798	5183	249
MAYUGE	IMANYIRO	3	522	525	1638	26	98	563	5084	123
MAYUGE	IMANYIRO	67	503	570	1876	112	394	1253	8060	514
MAYUGE	IMANYIRO	2	315	317	539	32	440	12220	3793	358
MAYUGE	IMANYIRO	62	527	589	1006	46	396	1377	11873	600
MAYUGE	KIGANDALO	1	299	300	823	40	24	83	4233	207
MAYUGE	KIGANDALO	0	450	450	804	16	95	34	3267	497
MAYUGE	KIGANDALO	0	379	379	726	75	80	151	4257	427
MAYUGE	KIGANDALO	0	245	245	593	15	20	37	3469	148
MAYUGE	KIGANDALO	0	429	429	704	22	78	80	3047	648
MAYUGE	KIGANDALO	24	555	579	448	51	162	288	2731	466
MAYUGE	KITYERERA	4	500	504	1355	122	134	193	4403	506

DISTRICT	SUBCOUNTY	CATTLE-CROSS	CATTLE-LOCAL	TOTAL H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
MAYUGE	KITYERERA	21	804	825	1339	60	52	135	4303	615
MAYUGE	KITYERERA	0	470	470	1325	224	308	370	5142	869
MAYUGE	KITYERERA	3	404	407	951	27	154	73	4181	1102
MAYUGE	KITYERERA	7	360	367	1614	43	105	47	8256	683
TOTAL		559	15275	15834	32203	1993	5022	20217	130321	12479

Source: (FITCA Livestock Census, 2001).

Kamuli District

DISTRICT	SUBCOUNTY	CATTLE-CROSS	CATTLE-LOCAL	TOTAL H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
KAMULI	BUGAYA	0	0	2850	2387	24	344	71	6029	331
KAMULI	BUGAYA	0	0	787	1062	62	122	28	4298	15
KAMULI	BUGAYA	0	0	1873	1144	23	121	103	2617	107
KAMULI	BUGAYA	0	0	664	967	43	103	5	3942	44
KAMULI	BUGAYA	0	0	2090	1714	35	162	68	5413	152
KAMULI	BUGAYA	0	0	1372	1520	30	249	21	7625	177
KAMULI	BUGAYA	0	0	606	510	8	33	2	2174	73
KAMULI	BUGAYA	0	0	1091	1335	40	156	59	4630	107
KAMULI	BUYENDE	0	0	3485	1605	54	182	0	4484	208
KAMULI	BUYENDE	0	0	3598	1915	83	255	21	3373	59
KAMULI	BUYENDE	0	0	2948	784	23	65	7	719	1
KAMULI	BUYENDE	0	0	1598	1226	18	186	5	1776	112
KAMULI	BUYENDE	0	0	1267	1042	29	143	0	1896	46
KAMULI	BUYENDE	0	0	802	1233	8	193	28	2331	1029
KAMULI	BUYENDE	0	0	1941	1396	37	87	27	4902	85
KAMULI	BUYENDE	0	0	1963	1306	25	200	8	3730	167
KAMULI	KAGULU	0	0	2006	1840	49	206	11	4153	635
KAMULI	KAGULU	0	0	1381	1917	39	165	54	6490	690
KAMULI	KAGULU	0	0	2753	2066	62	189	52	4492	320
KAMULI	KAGULU	0	0	2163	1895	57	419	11	6145	1328
KAMULI	KAGULU	0	0	2142	1116	62	156	6	2889	655
KAMULI	KAGULU	0	0	2967	2389	64	246	27	5163	1172
KAMULI	KAGULU	0	0	4505	2470	91	168	85	5895	528
KAMULI	KIDERA	0	0	2419	1437	115	298	3	3744	263
KAMULI	KIDERA	0	0	1088	1156	64	251	52	2725	980
KAMULI	KIDERA	0	0	1418	1205	96	203	16	3355	662
KAMULI	KIDERA	0	0	1538	916	101	306	38	4656	666
KAMULI	KIDERA	0	0	2084	877	28	137	0	2528	153
KAMULI	KIDERA	0	0	2226	1231	77	223	0	3862	186
KAMULI	NKONDO	0	0	4839	1989	49	217	5	3224	157
KAMULI	NKONDO	0	0	1776	1027	73	233	11	1492	265

DISTRICT	SUBCOUNTY	CATTLE- CROSS	CATTLE- LOCAL	TOTAL H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
KAMULI	NKONDO	0	0	1439	937	84	126	4	1324	105
KAMULI	NAMUGONGO	0	0	553	570	7	106	40	4206	147
KAMULI	NAMUGONGO	0	0	599	693	7	117	4	4550	62
KAMULI	NAMUGONGO	0	0	1322	1245	49	252	41	6556	392
KAMULI	NAMUGONGO	0	0	673	820	21	96	69	8355	161
KAMULI	NAMUGONGO	0	0	768	998	21	249	77	7565	225
KAMULI	NAMUGONGO	0	0	66	152	0	61	3	1137	33
KAMULI	NAMUGONGO	0	0	538	548	0	128	25	4228	80
KAMULI	NAMUGONGO	0	0	559	517	6	79	8	3669	77
KAMULI	NAWAIKOKE	0	0	1442	1254	30	297	73	2987	308
KAMULI	NAWAIKOKE	0	0	1620	1347	33	365	54	3918	129
KAMULI	NAWAIKOKE	0	0	2001	1321	39	345	0	6382	159
KAMULI	NAWAIKOKE	0	0	1427	891	61	210	11	4306	70
KAMULI	NAWAIKOKE	0	0	1885	989	22	181	15	1771	74
KAMULI	NAWAIKOKE	0	0	2411	2080	84	209	35	6112	341
KAMULI	NAWAIKOKE	0	0	1036	1261	15	88	30	2837	377
KAMULI	NAWAIKOKE	0	0	1595	1304	70	88	0	1840	600
KAMULI	BUMANYA	0	0	1307	1038	0	508	0	1646	274
KAMULI	BUMANYA	0	0	1700	1041	37	395	0	1989	407
KAMULI	BUMANYA	0	0	3224	1404	23	702	4	2736	331
KAMULI	BUMANYA	0	0	1616	820	4	373	38	1351	98
KAMULI	BUMANYA	0	0	1109	1316	8	664	17	3617	226
KAMULI	BUMANYA	0	0	2246	1552	87	682	101	2731	338
KAMULI	NAMWIWA	0	0	1555	1622	75	185	139	8466	374
KAMULI	NAMWIWA	0	0	1312	1405	40	171	16	6784	472
KAMULI	NAMWIWA	0	0	1429	1245	104	162	13	5655	213
KAMULI	NAMWIWA	0	0	1469	1115	56	129	6	6266	181
KAMULI	GADUMIRE	0	0	1726	2080	160	602	13	8758	400
KAMULI	GADUMIRE	0	0	2081	2212	140	399	9	14842	398
KAMULI	GADUMIRE	0	0	1668	1495	237	524	0	9036	537
KAMULI	GADUMIRE	0	0	1403	1279	161	422	0	7401	1952
KAMULI	GADUMIRE	0	0	1881	2720	466	845	157	13237	1443

DISTRICT	SUBCOUNTY	CATTLE- CROSS	CATTLE- LOCAL	TOTAL H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
KAMULI	BUGULUMBYA	0	0	459	1336	20	159	99	3339	126
KAMULI	BUGULUMBYA	0	0	587	1252	18	192	48	3021	91
KAMULI	BUGULUMBYA	0	0	346	554	3	78	22	1274	34
KAMULI	BUGULUMBYA	0	0	293	567	6	86	0	2911	0
KAMULI	BUGULUMBYA	0	0	421	839	4	235	8	3230	19
KAMULI	WANILOLE	0	0	708	1748	11	344	127	7789	165
KAMULI	WANILOLE	0	0	308	730	0	151	62	3683	86
KAMULI	WANILOLE	0	0	732	1154	47	393	48	7283	139
KAMULI	MBULAMUTI	0	0	810	930	58	164	117	4349	584
KAMULI	MBULAMUTI	0	0	980	929	27	103	50	2266	99
KAMULI	MBULAMUTI	0	0	959	1233	14	118	62	4665	166
KAMULI	MBULAMUTI	0	0	591	882	7	78	39	2927	83
KAMULI	KISOZI	0	0	700	1069	28	316	110	4659	125
KAMULI	KISOZI	0	0	562	971	34	252	10	4404	33
KAMULI	KISOZI	0	0	429	581	39	146	26	2396	59
KAMULI	KISOZI	0	0	271	818	19	137	40	3961	117
KAMULI	KISOZI	0	0	230	735	0	101	2	2993	31
KAMULI	KISOZI	0	0	242	568	47	106	49	2189	15
KAMULI	KISOZI	0	0	726	1032	17	145	16	3486	133
KAMULI	KISOZI	0	0	401	657	35	120	34	3344	57
KAMULI	NAWANYAGO	0	0	931	1119	6	349	133	9638	102
KAMULI	NAWANYAGO	0	0	1292	1265	48	965	270	9316	314
KAMULI	NAWANYAGO	0	0	1091	990	16	281	29	6837	91
KAMULI	BALAWOLI	0	0	3074	1204	27	105	5	1678	20
KAMULI	BALAWOLI	0	0	2988	1735	32	185	4	3079	109
KAMULI	BALAWOLI	0	0	1781	1454	36	477	41	3787	86
KAMULI	BALAWOLI	0	0	876	393	36	33	0	958	107
KAMULI	BALAWOLI	0	0	3694	1698	300	71	14	3022	196
KAMULI	BALAWOLI	0	0	415	613	1	153	14	3257	50
KAMULI	BALAWOLI	0	0	1086	1086	13	255	38	6103	98
KAMULI	BALAWOLI	0	0	1153	1342	15	255	20	6354	15
KAMULI	NAMWENDWA	0	0	633	1169	18	125	4	3400	67

DISTRICT	SUBCOUNTY	CATTLE-CROSS	CATTLE-LOCAL	TOTAL H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
KAMULI	NAMWENDWA	0	0	441	651	15	47	20	1665	64
KAMULI	NAMWENDWA	0	0	705	1240	3	121	0	5801	57
KAMULI	NAMWENDWA	0	0	192	427	0	69	9	1940	31
KAMULI	NAMWENDWA	0	0	590	604	7	68	12	3187	14
KAMULI	NAMWENDWA	0	0	251	306	5	50	60	1300	12
KAMULI	NAMWENDWA	0	0	521	888	11	175	28	3626	93
KAMULI	NAMWENDWA	0	0	449	876	2	169	20	4042	48
KAMULI	NAMWENDWA	0	0	643	1118	1	199	16	7419	55
KAMULI	BUTANSI	0	0	649	650	13	188	22	2751	21
KAMULI	BUTANSI	0	0	646	1172	12	190	47	3048	95
KAMULI	BUTANSI	0	0	505	1003	31	147	36	2152	190
KAMULI	BUTANSI	0	0	529	731	17	71	59	2111	111
KAMULI	KAMULI T/C	0	0	38	151	0	18	30	1376	11
KAMULI	KAMULI T/C	0	0	34	97	0	0	0	938	35
KAMULI	KAMULI T/C	0	0	105	308	11	104	85	1509	95
KAMULI	KAMULI T/C	0	0	67	11	0	7	9	1301	0
KAMULI	NABWIGULU	0	0	429	338	9	82	20	825	14
KAMULI	NABWIGULU	0	0	390	361	8	118	4	1781	11
KAMULI	NABWIGULU	0	0	332	836	12	33	41	1558	31
KAMULI	NABWIGULU	0	0	1017	621	28	161	17	1141	20
KAMULI	NABWIGULU	0	0	405	329	2	64	12	953	39
KAMULI	NABWIGULU	0	0	521	782	0	241	14	2145	14
KAMULI	NABWIGULU	0	0	609	815	12	96	31	1850	67
KAMULI	BULOPA	0	0	404	810	8	254	2	1887	34
KAMULI	BULOPA	0	0	430	954	9	248	140	2853	26
KAMULI	BULOPA	0	0	508	1192	7	387	96	4251	36
KAMULI	BULOPA	0	0	290	591	5	307	0	1284	10
KAMULI	NAMASAGALI	0	0	2304	1987	84	578	50	6524	340
KAMULI	NAMASAGALI	0	0	2451	2651	82	508	18	11168	100
KAMULI	NAMASAGALI	0	0	755	257	40	67	0	289	13
KAMULI	NAMASAGALI	0	0	2065	1564	81	307	38	5577	156
KAMULI	KITAYUNJWA	0	0	637	903	4	126	28	3096	132

DISTRICT	SUBCOUNTY	CATTLE- CROSS	CATTLE- LOCAL	TOTAL H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
KAMULI	KITAYUNJWA	0	0	476	830	8	120	11	2010	78
KAMULI	KITAYUNJWA	0	0	319	602	7	101	13	1054	92
KAMULI	KITAYUNJWA	0	0	400	598	10	107	17	1108	87
KAMULI	KITAYUNJWA	0	0	422	309	3	81	7	820	21
KAMULI	KITAYUNJWA	0	0	446	305	9	84	10	830	30
KAMULI	KITAYUNJWA	0	0	321	401	14	94	16	850	42
KAMULI	KITAYUNJWA	0	0	467	301	12	125	12	901	57
KAMULI	KITAYUNJWA	0	0	643	721	17	112	21	672	93
TOTAL		0	0	163075	145892	5297	28480	4438	518201	28249

Mukono District

DISTRICT	SUBCOUNTY	CATTLE- EXOTIC	CATTLE- CROSS	CATTLE- LOCAL	TOTAL H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
MUKONO	NAMA	65	102	233	400	460	52	626	43	6074	394
MUKONO	NAMA	333	243	510	1086	907	174	877	122	6187	95
MUKONO	NAMA	0	0	0	264	493	41	300	122	5610	168
MUKONO	NAMA	0	0	0	279	320	25	430	176	5279	99
MUKONO	NAMA	0	0	0	500	489	83	265	110	25934	201
MUKONO	NAMA	0	0	0	0	517	61	280	34	4727	65
MUKONO	KOOME ISLANDS	0	0	0	326	547	32	183	0	1591	0
MUKONO	KOOME ISLANDS	0	0	0	332	226	30	35	0	285	83
MUKONO	KOOME ISLANDS	0	0	0	333	251	29	132	0	432	282
MUKONO	KOOME ISLANDS	0	0	0	300	271	48	263	0	1155	297
MUKONO	NAJJEMBE	16	75	430	521	620	85	704	70	620	634
MUKONO	NAJJEMBE	8	34	216	258	437	44	216	69	3387	186
MUKONO	NAJJEMBE	13	102	359	474	583	28	290	120	5644	237
MUKONO	NAJJEMBE	20	13	224	257	366	8	84	68	3074	192
MUKONO	NAJJEMBE	83	53	118	254	370	43	115	73	3144	310
MUKONO	NAJJEMBE	45	30	77	152	167	60	65	7	0	38
MUKONO	NAJJEMBE	1	16	345	362	661	32	173	81	4404	189
MUKONO	KAWOOLLO	5	69	390	464	489	24	451	65	3474	0
MUKONO	KAWOOLLO	0	25	497	522	787	57	446	34	352	89
MUKONO	KAWOOLLO	33	124	541	698	726	69	503	110	320	296
MUKONO	KAWOOLLO	0	66	609	675	519	84	483	32	2567	59
MUKONO	KAWOOLLO	8	74	247	329	381	52	312	143	2081	207
MUKONO	KAWOOLLO	33	61	283	347	452	36	289	19	1867	14
MUKONO	KAWOOLLO	0	4	95	99	196	22	135	15	667	32
MUKONO	KAWOOLLO	13	39	218	270	334	25	262	45	1588	121
MUKONO	LUGAZI T/C	8	14	5	27	27	2	24	16	865	35
MUKONO	LUGAZI T/C	0	193	0	193	0	0	0	0	0	0
MUKONO	LUGAZI T/C	1	3	14	18	76	5	10	3	58	39
MUKONO	LUGAZI T/C	0	3	2	5	35	3	0	24	126	64
MUKONO	LUGAZI T/C	0	0	3	3	5	0	0	27	238	146
MUKONO	LUGAZI T/C	0	0	0	0	0	0	0	3	33	20
MUKONO	LUGAZI T/C	0	0	0	0	0	0	0	0	14	1
MUKONO	LUGAZI T/C	0	0	0	0	0	0	0	2	245	171
MUKONO	LUGAZI T/C	0	0	0	0	0	0	0	3	38	23
MUKONO	LUGAZI T/C	0	0	0	0	0	0	0	0	22	13
MUKONO	LUGAZI T/C	0	0	0	0	0	5	0	13	81	1

DISTRICT	SUBCOUNTY	CATTLE- EXOTIC	CATTLE- CROSS	CATTLE- LOCAL	TOTAL H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
MUKONO	LUGAZI T/C	0	0	0	0	2	0	9	10	51	29
MUKONO	LUGAZI T/C	0	0	0	0	5	0	0	13	315	187
MUKONO	LUGAZI T/C	0	0	12	12	23	0	0	0	79	24
MUKONO	LUGAZI T/C	0	0	0	0	3	0	0	3	17	12
MUKONO	LUGAZI T/C	14	11	66	91	40	10	17	14	771	16
MUKONO	NKOKONJERU T/C	0	139	116	255	254	24	168	3	53	11
MUKONO	NKOKONJERU T/C	1	169	73	243	185	24	208	41	134	27
MUKONO	NKOKONJERU T/C	0	87	29	116	153	3	131	10	1362	5
MUKONO	MUKONO T/C	32	112	238	382	238	48	347	130	15061	23
MUKONO	MUKONO T/C	29	120	137	286	344	45	392	250	12606	437
MUKONO	MUKONO T/C	4	7	13	24	6	6	11	15	11279	4
MUKONO	MUKONO T/C	28	148	641	817	570	105	927	169	17750	1131
MUKONO	NAGOGJE	0	0	186	186	403	38	214	54	740	15
MUKONO	NAGOGJE	0	0	99	99	346	92	150	71	386	10
MUKONO	NAGOGJE	12	1	195	208	301	65	157	40	779	16
MUKONO	NAGOGJE	32	29	242	303	103	14	160	17	1508	81
MUKONO	NAGOGJE	12	25	402	439	234	61	120	47	785	18
MUKONO	NTUNDA	0	0	408	408	504	181	292	64	2023	277
MUKONO	NTUNDA	0	182	259	441	594	60	262	123	2672	33
MUKONO	NTUNDA	0	11	149	160	321	49	142	18	497	58
MUKONO	SEETA NAMUGANGA	0	115	613	728	894	616	448	108	3769	129
MUKONO	SEETA NAMUGANGA	0	63	697	760	614	75	338	251	1679	127
MUKONO	SEETA NAMUGANGA	0	1	366	367	352	32	345	57	1763	82
MUKONO	SEETA NAMUGANGA	0	8	273	281	160	17	129	14	1345	44
MUKONO	SEETA NAMUGANGA	0	19	762	781	894	208	571	110	4865	111
MUKONO	SSI BUKUNJA	0	0	0	361	255	56	145	20	300	0
MUKONO	SSI BUKUNJA	0	0	0	574	581	66	500	15	2540	115
MUKONO	SSI BUKUNJA	0	0	0	293	161	15	126	0	673	15
MUKONO	SSI BUKUNJA	0	0	0	323	163	26	135	0	987	5
MUKONO	SSI BUKUNJA	0	0	0	725	239	76	111	8	879	18
MUKONO	SSI BUKUNJA	0	0	0	375	219	60	109	15	741	31
MUKONO	SSI BUKUNJA	0	0	0	421	302	33	238	0	1159	118
MUKONO	NGOGWE	0	5	99	104	97	3	69	12	568	0
MUKONO	NGOGWE	32	35	312	379	274	17	139	60	1864	29
MUKONO	NGOGWE	0	15	315	330	132	4	72	2	1187	4
MUKONO	NGOGWE	31	125	1750	1910	600	46	288	44	2347	92
MUKONO	NGOGWE	43	22	453	518	500	27	128	1	1131	48
MUKONO	NGOGWE	0	31	623	654	828	35	237	0	2181	7

DISTRICT	SUBCOUNTY	CATTLE- EXOTIC	CATTLE- CROSS	CATTLE- LOCAL	TOTAL H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
MUKONO	NAKISUNGA	0	0	0	405	270	29	149	24	1823	37
MUKONO	NAKISUNGA	0	0	0	331	263	21	381	28	2604	63
MUKONO	NAKISUNGA	0	0	0	341	376	22	279	29	3554	10
MUKONO	KASAAWO	0	0	0	509	659	117	272	49	4013	87
MUKONO	KASAAWO	0	0	0	531	712	67	301	81	2290	40
MUKONO	KASAAWO	0	0	0	306	272	47	199	46	1893	36
MUKONO	KASAAWO	0	0	0	610	473	121	329	76	2980	112
MUKONO	KASAAWO	0	0	0	1422	1607	196	356	191	4505	144
MUKONO	KIMENYEDDE	0	31	173	204	137	11	65	0	510	5
MUKONO	KIMENYEDDE	0	0	0	393	352	84	156	18	1423	29
MUKONO	NABAALE	39	233	318	590	530	134	268	27	6930	24
MUKONO	NABAALE	2	158	748	908	849	194	491	39	3601	44
MUKONO	NABAALE	12	135	673	820	729	130	543	62	4556	77
MUKONO	NABAALE	8	147	786	941	1058	142	334	109	5736	58
MUKONO	NABAALE	1	99	617	717	674	81	362	57	2798	93
MUKONO	BUVUMA NAIRAMBI	0	0	0	278	883	1	124	0	3290	327
MUKONO	BUVUMA NAIRAMBI	0	0	0	286	410	0	90	1	2717	374
MUKONO	BUVUMA BUSAMUZI	0	0	0	61	149	0	154	4	2401	0
MUKONO	BUVUMA BUSAMUZI	0	0	0	123	748	22	188	24	6310	578
MUKONO	BUVUMA BUSAMUZI	0	0	0	236	444	86	33	0	266	246
MUKONO	BUGAYA	0	0	0	2423	1621	0	435	89	33007	368
MUKONO	BUGAYA	0	0	0	3887	2846	0	288	107	29417	593
MUKONO	BWEEMA	0	87	2845	2932	892	0	262	94	27984	482
MUKONO	BWEEMA	0	0	0	1000	1631	0	374	18	31791	961
MUKONO	NYENGA	7	233	200	340	68	16	126	40	168	18
MUKONO	NYENGA	16	38	293	347	93	13	118	64	593	22
MUKONO	NYENGA	31	52	309	392	114	8	192	114	1231	4
MUKONO	NYENGA	4	83	157	244	81	31	135	43	2830	15
MUKONO	NYENGA	0	75	148	223	127	23	261	20	985	8
MUKONO	NYENGA	28	56	358	442	206	17	413	58	1114	29
MUKONO	GOMA	0	0	0	1614	973	428	536	37	5748	26
MUKONO	GOMA	0	0	0	382	159	20	351	41	1368	23
MUKONO	GOMA	0	0	0	610	103	6	257	0	610	0
MUKONO	GOMA	0	0	0	315	315	265	20	247	18507	14
MUKONO	GOMA	0	0	0	310	276	44	182	78	1649	0
MUKONO	KYAMPIISI	0	12	427	439	133	11	269	11	6921	24
MUKONO	KYAMPIISI	0	0	0	740	74	28	417	8	2963	47

DISTRICT	SUBCOUNTY	CATTLE- EXOTIC	CATTLE- CROSS	CATTLE- LOCAL	TOTAL	H/C	GOATS	PIGS	SHEEP	RABBIT	CHICKEN	DUCKS
MUKONO	KYAMPIISI	5	182	755	942	117	117	18	478	13	3872	59
MUKONO	KYAMPIISI	0	176	519	695	5820	284	544	18	5820	67	
MUKONO	KYAMPIISI	40	49	121	210	538	38	487	21	4887	39	
MUKONO	BUIKWE	0	0	0	658	587	0	200	70	4084	110	
MUKONO	BUIKWE	0	0	0	449	652	0	320	80	5343	90	
MUKONO	BUIKWE	0	0	0	861	460	0	250	90	3255	3255	
MUKONO	BUIKWE	0	0	0	735	440	0	280	60	5025	80	
MUKONO	BUIKWE	0	0	0	586	700	0	395	70	662	70	
MUKONO	NJERU	12	186	70	268	32	13	75	45	1965	37	
MUKONO	NJERU	25	52	136	213	129	25	305	8	5321	68	
MUKONO	NJERU	69	93	210	372	9	5	186	16	2280	14	
MUKONO	NJERU	8	21	62	91	48	15	91	10	1741	82	
MUKONO	NTENJERU	0	169	346	515	490	97	591	33	4416	170	
MUKONO	NTENJERU	0	187	465	652	544	107	324	165	2337	139	
MUKONO	NTENJERU	59	162	221	730	152	15	124	10	879	109	
MUKONO	NTENJERU	0	172	156	328	391	19	163	27	1194	83	
MUKONO	NTENJERU	0	72	146	218	195	16	107	16	1221	95	
MUKONO	NTENJERU	0	342	902	1244	675	123	807	170	4538	290	
MUKONO	NTENJERU	0	204	205	409	463	73	428	81	3602	80	
MUKONO	NTENJERU	0	204	282	486	370	47	267	37	1386	75	
TOTAL		1321	6533	27592	61416	57725	6806	31920	6432	485943	18220	

Source: (FITCA Livestock Census, 2001).