

# **Maize Value Chain Report**

## **1.0 INTRODUCTION**

### **1.1 Value chain definition**

The agricultural commodity value chain concept has been used since the beginning of the millennium, primarily by those working in agricultural development in developing countries. Although there is no universally accepted definition of the term, it normally refers to the whole range of goods and services necessary for an agricultural product to move from the farm to the final customer or consumer.

At the heart of the agricultural commodity value chain concept is the idea of actors connected along a chain producing and delivering goods to consumers through a sequence of activities. However, this “vertical” chain cannot function in isolation and an important aspect of the value chain approach is that it also considers “horizontal” impacts on the chain, such as input and finance provision, extension support and the general enabling environment. The approach has been found useful, particularly by development actors, in that it has resulted in a consideration of all those factors impacting on the ability of farmers to access markets profitably, leading to a broader range of chain interventions. It is used both for upgrading existing chains and for development actors to identify market opportunities for small farmers

### **1.2 Contexts of the value chain**

Value Chains are found at the core of high-impact and sustainable initiatives focused on improving productivity, competitiveness, entrepreneurship, and Small-Medium Enterprises (SME) growth. Value Chain approaches are revolutionizing agriculture and the food industry. Focus has shifted from agricultural production to consumer demand, marketing and the coordination of product flows from producers to consumers. The Value Chain concept acknowledges that production must be linked to demand and the critical role of organizing the flow from farmer to consumer opportunities.

The Maize sector is an increasingly important part of Uganda's economy, providing a source of income for at least over 2 million households, thousands of traders/agents and over hundreds of millers. Maize is a household-food security crop and has increasingly become a cash crop for small, medium and large scale farmers. Maize is one of the 15 strategic agricultural commodities prioritized in the Development Strategy and Investment Plan (DSIP) of the Ministry of Agriculture, (MAAIF, 2010).

Maize is the most highly cultivated crop, with statistics from the Uganda National Housing Survey (UNHS) of 2011/12 showing that maize was cultivated by about 86% of the 4.2 million agricultural households in Uganda (UBOS 2010). Furthermore Maize is an important staple food now for many communities in Uganda , and is the primary food source in institutions such as schools, prisons, military and the police (UNDP Value Chain Report, 2010).

Besides food for human consumption, the crop is an important ingredient in livestock and poultry feeds, as well as a highly preferred starch used in the fermentation of local non formal alcoholic brews. All the above uses make maize grain the most traded food/cash crop in Uganda.

To underline the importance of this crop, the government of Uganda has prioritized maize as one of the 10 agricultural crops within the Rural Development and National Zoning Strategy. This positions maize to play an increasingly significant role in the poverty alleviation agenda of the country (UNDP Value Chain Report, 2010).

### **1.3 Study purpose and objectives**

To undertake a comprehensive study and value chain analysis by EADEN for Coffee, Cassava, Rice and Maize in the districts of Tororo, Mbale, Bugiri, Luwuka and Iganga and come up with practical recommendations.

## **2.0 METHODOLOGY**

### **2.1 Study Scope and Coverage**

This study was conducted between December 2014 and February 2015. Four value chains were analysed: that of maize, rice, cassava, coffee, in the-regions of eastern Uganda and Busoga. The Value Chain Analysis is based on the case studies undertaken with specific stakeholders within the value chain especially cooperative societies visited specifically in Eastern Uganda in the districts of Mbale, Tororo, Luwuka, Bugiri, Iganga that work closely with EADEN. In this particular report, emphasis has been put on maize.

### **2.2 Study methods and tools**

A value chain analysis was done for each of the following four crop commodities: maize, rice, cassava and coffee. This included mapping of the value chains, detailed descriptions of the main actors involved in the value chains (from farmers to end consumers) and lastly, analysis of how the value is distributed across the different actors. The methodology involved collection of information and documentary review of secondary literature, collection of primary information from the field through focus group discussions and semi structured interviews using purposive sampling. Lastly, data was compiled and analysed to generate gross margins obtained by different actors along the value chains.

### **3.0 General Findings**

Most farmers were smallholders cultivating a wide range of crops for household consumption and food security purposes, but organized under various cooperative societies in the districts of Luwuka, Iganga, Tororo, Mbale and Bugiri especially for marketing purposes. EADEN has provided Part of their land is also utilized for growing crops that are later sold on the market and generate revenues for farmers. This study focused on the latter group of crops, known as “cash crops”.

All value chains were similar particularly at the upstream stages of the chain, right after harvest. Once farmers harvested their crops, they either sold directly at the farm gate level or stored and bulked under the various cooperative societies. Selling at farm gate level was not preferred by farmers but was often done out of necessity (e.g. immediate need for cash) or simply due to very limited access to markets (e.g. no means of transportation).

Farmer bargaining power was diminished and the selling prices of their crops were often very low, but this can be curtailed by bulking and wait for prices to improve. Another marketing strategy as earlier mentioned was to sell under cooperative societies such as Mukuju United Cooperative Farmers' Association in Mukuju Sub County Akadot parish Tororo district often to bulk up the crop commodity in stores in order to seek better prices (sold at the right time and in larger quantities).

The local traders were farmers' first link to the market. These local traders travel to remote and difficult to access areas to collect harvests from farm gates, collection points (storage facilities) and small rural markets until they accumulate a sufficient quantity e.g. one or more truckloads.

Subsequently, local traders transport the commodity to the main local markets (e.g. in Mbale, Jinja, Tororo and the border towns of Busia, Malaba and Rwaraka) where it is sold either to small shop owners for retailing, or to wholesalers who then transport it to the main regional markets in Kampala and in regional markets (e.g. Kenya, South Sudan, Democratic Republic of Congo).

The final market destination differs according to crop type; some of which are destined for export markets. Crops that need secondary processing like maize, and have slightly different value chains, Processors have a central role to play in these value chains and are usually located in urban trading centres such as Mbale and Tororo and even other parts like Kampala. Most of the time they serve as marketing centres where sellers and

buyers meet: local traders deliver the crop and sell it directly to wholesalers while processors take a fee for processing the crop commodity. Farmers also bring their crop directly to millers and thus directly bear the transport cost.

## **4.0 THE FINDINGS**

### **4.1 Structure of the findings**

The findings are structured based on the levels of production, processing, marketing and consumption. The staff of the following cooperative societies were key informants

- a) Mukuju United Cooperative Farmers' Association: Mukuju Sub County: Akadot parish in Tororo district
- b) Khabutoola Integrated Farmers' Association
- c) Bukanga Tukolele Walala Farmers' Association: Bukaga Sub County, Budhudu Parish---- Luuka District
- d) Nawandala Integrated Farmers' Association : Nawandala Sub county , Bugogo Parish—Iganga District (NIFA)
- e) Namungalwe Integrated Farmers' Association (NAMIFA) Namungalwe Sub county , Iganga District
- f) Gumutindo Coffee Cooperative enterprise in Mbale Industrial division
- g) Sibalanga Integrated Development Association
- h) Buluguyi Farmers' Cooperative Society (BUFACOS)
- i) Budaya Farmers' Savings and Cooperative Association (BUFAMA)

## **5.0 PRODUCTION**

### **5.1 Production actors and players**

Farmers, input dealers such as UNADA and support organizations such as EADEN that have supported farmers with in puts. Even the Uganda Maize Grain Council can be handy especially to guard against the quality required in the market at a particular time. Under the various cooperative societies organized around maize they have Executive committees to provide the overall leadership. Then the societies have production

officers that are responsible for the various farmers that produce maize by providing technical support.

## **5.2 Production capacities**

Maize production takes place in all districts of eastern Uganda. Maize has been traditionally cultivated in Uganda by small-scale farmers;

- As a source of food
- And for income generation

The highest Maize production in the country was reported in the district of Iganga with 303,262 tonnes according to UBOS 2012. The rest of the districts under review followed so closely , which gives the region high leverage to gain from the maize crop. The average maize productivity in the Eastern region is estimated to be 0.8 -1.5 Mt/Ha,

## **5.3 Production systems**

### **5.4 Challenges and constraints**

Lack of Storage facilities ,Limited land for farming, Poor seed supplies, Pests and diseases, Low price for the produce, Limited market, Weather changes as pointed by Rose Nalubega the chairperson of Bukanga Farmers Association in Luwuka district.

The others include Exploitation by middle men, Limited access to land for large scale production, Soil infertility, Poor quality seeds, Unreliable rainfall ,Poor seasonal timing by farmers, Limited access to fertilizers, Limited technical know-how (application of fertilizers), Limited access to animal traction/ oxen as pointed by Migenda the chairperson and Mirembe the community Based Facilitator of Namungalwe farmers association in Iganga district.

High post-harvest losses, using old crop rather than good maize seeds, lack of modern storage facilities, high bank lending rates, and poor market access roads among others are the challenges listed by the WFP facing the maize sector business.

Low levels of productivity, poor general agronomic practices, poor crop protection practices that has result into a high disease and pest burden e.g. the coffee wilt disease and lastly fluctuating prices which discourage farmers from growing more maize.

Most of these challenges are attributed to a dysfunctional extension and advisory service. Most of the cooperative society staff interviewed reported that they had not received any extension advice by government except sensitization sessions organized by EADEN. Although NAADS is present in the region, their staff concentrates on only selected crop enterprises leaving the rest of the crops unattended to. NGOs in the area have attempted to bridge this gap but have worked with only crops of their choice and often focus on postharvest handling and marketing aspects, leaving out production.

Other constraints at the farmer level are limited access to and high cost of finance, progressively smaller average farm sizes, Low levels of farmer organization, Low Yields at farm level, Ageing trees (and farmers), High cost of farm inputs and very limited usage of inputs, and very limited access to on-farm extension services.

Farmers face great difficulty accessing seed in terms of quantity and quality due to high prices and limited availability. Seed used is usually home saved seeds from previous harvest, most of which is made up of local varieties. Production is also limited by a lack of capital and access to rural credit; the majority of farmers lack access to formal financial services. When farmers manage to contract a loan, the interest rates are high, around 20- 35% per year. Another option is to get affiliation to a co-operative or similar group where they can get access to group loans via SACCO schemes. Donors and other aid projects for agriculture also often prefer to lend to co-operatives and similar farmer groups. Commercial bank lending rates in November 2012 were about 24% while SACCOs seem to lend amount in the range of up to 10% per annum.

Other factors affecting yields include: use of rudimentary tools and equipment (e.g. hand hoe); farmers' lack of agronomic knowledge; incidence of pests, weeds, vermin and diseases. Some areas are affected by soil exhaustion; most of these lands were previously occupied and over cultivated. Weather is also a crucial issue, with rainfall patterns becoming more and more unpredictable for farmers.

### **Fluctuating prices**

Maize has traditional been grown seasonally during the rainy seasons of Mid-February or March to June, and second rains from Mid-August to December. As a result, the prices fluctuate significantly with low prices just after the traditional harvest season and high prices during "off seasons". These fluctuating prices are also a result of market inefficiencies where there is lack of information on more suitable prices (for example export markets). The answer would be to hoard the maize either through bulking and keeping it safely by farmers until the prices go up.

### **2. Drought**

Climate change has resulted in less than predictable rains, even in Uganda which has traditionally had known seasons.

### **3. Access to financing**

The cost of agriculture capital equipment like threshers, water reservoir, ploughs and tractors is high. In addition as maize takes about 3 months to mature, it means for at least that time the farmer will have to finance the crop growth without any expected income.

It is however pretty difficult to get agriculture loans in Uganda (well not just agriculture but credit in general) but hopefully with the WRS mentioned above, it should be easier

for the farmer to use their produce as security for a loan. Furthermore there are some organisations that are increasingly seeking to help the agriculture sector.

We would recommend that in order for the farmer to have higher chances of accessing loans, they keep records of their agriculture produce to show that they do not have high incidences of crop failure (which is one of the factors that makes the sector high risk to lend to).

## **6.0 PROCESSING/VALUE ADDITION**

### **5.1 Processing actors and players**

The Biggest processing actors for maize are mill owners who are in the towns in the area with the majority in Mbale, Jinja, Tororo and Iganga towns. Other players in the processing are manufacturers of bags who provide sacks for bagging, transporters and finance institutions who give soft loans to the processing companies. Farmers in most cases market their crops without processing it (e.g. un milled maize) and sell it with minimal added value. Farmers lack simple processing equipment (e.g. rice miller) or direct access to milling facilities (e.g. transportation). Another problem is the absence of postharvest handling equipment to improve the quality of the product (e.g. tarpaulins for drying the harvest). And finally, farmers lack knowledge on postharvest handling and value addition.

### **5.2 Processing capacities**

Processing capacities is still limited as pointed out by all the staff interviewed for cooperative societies in the region. The area of value addition is still virgin which farmers can exploit with support from EADEN because of the high costs of processing equipments. This is the biggest opportunity that now Maize farmers have of value addition to remain competitive in the market. Otherwise selling raw maize, and dried grains at household level will not help farmers anymore to improve on their income potential.

## **7.0 TRADING/MARKETING**

### **7.1 Trading actors and players**

The key actors in trading include trading companies, Transporters who transport products from either processing plants to shops or supermarkets. Supermarkets such Uchumi, Tuskys, Nakumatt can be explored as market outlets for the mentioned actors. The relationship between farmers and local traders tends to be characterized by a general mistrust, affecting communication and farmers' overall knowledge about markets. Apart from farmers within the P4P project, farmers lack appropriate storage facilities and skills to manage such facility. While some crops have great potential and are well adapted to the local environment (e.g. maize), market channels are inexistent. Farmers find it difficult to market their crops and attract buyers.

Some crop varieties are in lesser demand and subsequently lower priced on the market than others. A significant proportion of farmers in the visited areas remains unorganized and act individually in the value chain because not all of them work under the farmers associations in the districts under study. Transportation is a strategic issue in better connecting farmers to markets: because of the poor condition of roads and the high cost of transportation, farmers remain largely isolated from markets.

### **Marketing constraints faced by producers (farmers)**

**Financial constraints** that manifest themselves in form of; inadequate financial resources for investment, too high interest rates on borrowed funds, unfavorable terms of borrowing usually a grace period of one month. Most farmers depend on own savings (77%), family or personal friends (23 %) to engage in their farming activities. When borrowing is done under prevailing terms provided (loan repayment period of 6 months and grace period of 1 month) by commercial banks and micro-finance institutions, farmers' properties have often been sold. One farmer observed that: *"borrowing these days is a recipe for loss of my property and am not ready for that."* small scale farmers require financial assistance to buy farm inputs- seeds and

fertilizers; storage/safety houses; purchase of harvesting materials; land preparation mainly slashing; preservation/drying equipment, training and transport.

**Limited participation of farmers in the marketing chain.** - Transactions are dominated by spot markets, lack of trust and opportunism, with very few contracts or long-term business relationships. This situation breeds speculation and opportunism, leading to distortions and loss of interest on the part of the producers.

**Lack of information on market requirements;** quality, volumes, prices and location has resulted in quality ignorance among the farmers and sometimes sustained an attitude of 'impatience' or hasty sales reducing the quality of farm gate produce put on the market and ultimately their incomes. The main source of information for the farmers were the middle men.

**Limited skills and knowledge of improved agricultural technologies** resulting in a slow rate of technology adoption, high post harvest losses, poor quality products and generally low production levels. The poor harvesting practices are attributed to ignorance and sometimes "greed for money" that reduces the quality of output which reduces the price bargaining power of farmers and ultimately their incomes. Agricultural extension services are not readily accessible to the farmers.

**Lack of organised and strong farmer groups** to negotiate in the market. Farmers remain price takers as traders determine prices through deliberate distortion of market information. Exploitation by middle men is rampant as pointed out by Ms Ofwono of Mukujju united cooperative society.

**Inefficient and costly transport systems.** Roads at all levels in production areas impassable leading to isolation of farmers in the rural areas. Modern transport methods do no work in these rural areas making accessibility to markets impossible.

**Limited reliable and knowledgeable rural input suppliers for genuine inputs.** There are few input suppliers in the rural and even the few sometimes sell fake seeds, fertilizers and acaricides which affects farmers production levels, quality and hence incomes. Input suppliers are not controlled and they sell everything they want.

## **7.2 Trading levels and systems**

Rural agents are the main buyers of all maize traded in the sub-counties (smaller administrative units in the districts). Their main function is to buy and/or assemble maize from the numerous scattered farmers, often located in inaccessible rural areas. They find market for the maize (often the urban traders and processors) when they have accumulated sufficient quantities. The urban traders and processors arrange transport to collect the maize either directly from the farmers whom they pay on a cash basis, or from the collection points of the agents. Since the agents live in the rural areas, they are a reliable linkage between the farmers and urban traders and processors/millers.

Urban traders are found in major urban centers in producing districts. Their main activities include networking with rural agents, serving as a market outlet for farmers, and collecting maize grain before selling it to the various clients, including institutions and processors, located in the districts. Urban traders are also sources of bagging materials (sacks) used by farmers as well as market information in their areas of operation. Urban traders sell their maize mostly to millers.

## **7.3 Challenges and constraints**

Due to the rampant informal trade, East African Grain Council says about 85% of the maize is traded out of Uganda. Officials said no maize grain traded in East Africa ever leaves the region, either due to quality issues or informal trading, thus limiting the market as well as the potential for increased income for all parties within the maize trade.

The WFP has implemented a zero percent Grade II deviation policy for any general procurement contracts. Part of the quality standards is keeping the moisture content for the grain between 10 and 13%. But most farmers sell off grain of 20% moisture content. WFP is going out to all the maize grain markets in Uganda with the aim of registering as many traders/ larger farmers/farmer organizations as possible to properly screen the market as it is aware that there are good initiatives in the country with some groups being able to supply Grade II and in some cases even Grade I maize.

WFP says over 90% of all the maize grain it purchases is supplied by local suppliers and they are happy to source so much maize locally. However, officials said the WFP Uganda operation is at current trends using less and less food in general based on its programmes after changing from emergency rations to development-oriented programmes in the recent years – trend that is likely to continue. Ideally, since the institution buys thousands of tonnes annually, this trend might see the price for the grain remaining lower over time.

Also, the fact that WFP has upgraded the quality of maize to the East African Standards Grade II, means that those who have maize of a lower grade will suffer with it.

At regional level, officials said without specifics that the maize growers in Tanzania and Kenya have already overcome a major part of the quality issues still faced in Uganda. Yet, while the East African standard for maize grain has been in place since 2005, this has not generally penetrated to the Ugandan suppliers and market yet. This is because maize stakeholders have not been keen on the standard as the informal trade across borders in particular to South Sudan and DR Congo is very large with purchases by cash upfront at farm gate with little regard for the so-called standards.

In its statistical abstract for 2012, the bureau says that while the area under maize during 2011 was the largest in Uganda and constituted 19% of the total area under selected food crops, this was slightly lower than the percentage (19.6%) recorded in

2010. The bureau added that the highest maize production in the country was reported in the district of Iganga with 303,262 tones.

The bureau has no readily available numbers on maize exports mainly because most of the trade is informal. Maize production contributes roughly 16% of total cash and food crop contribution to Uganda's national income, despite its production being dominated by subsistence level farmers with small land holdings (0.2, 0.5 ha).

Less than one-quarter of maize farmers sell any maize.

- Farmers are predominantly selling small amounts of maize in the village to traders.
- Aggregation is time consuming and costly, contributing to low farm prices.
- Farmers lack information about prices in nearby markets and also lack cost-effective means of transporting maize individually. However low levels of trust between farmers limit collective sales or transportation.

### **Marketing constraints of Traders and processors**

**Poor transport networks**, limited communication infrastructure increase transaction costs for bulking affecting profit margins and the prices given to farmers by traders. Poor storage facilities reduces the quality and undermines faster bulking and consolidation of surplus in the supply chain

**Lack of valid and reliable market information and requirements.** Traders rely on radio and newspaper news and commentaries for market information. Such information is often inaccurate, not targeted, not update and usually has no information about exports.

**Limited business skills and competences.** The key areas where shortages were highest are: knowledge of premiums available for better quality; regional/international quality standards; knowledge of improved packaging options; current international

prices and markets, sources of finance, and knowledge of better/improved technologies for use. The others which were also severely in short supply were: knowledge of value-adding and (further) processing opportunities and business planning.

**Limited knowledge by traders about market requirements/specifications** has resulted in the mixing of crops from different locations and grades, which further reduces quality. The lack of knowledge of premiums for better quality has resulted in the failure to pay premium prices for quality produce, which demotivates farmers in their efforts to improve produce quality.

**Limited knowledge of technology options** by processors has resulted in a slow rate at which new technology is adopted which in turn has limited processing efficiency and the production of new and improved products. The Hammer Mill, introduced in Uganda more than 60 years ago is still the predominant maize processing machine today.

**High trade taxes, fees and dues** all along the produce marketing chain. Currently traders face a minimum of six taxes, fees and dues in the process of transporting and marketing maize to the main buyers in Kampala. These include: License tax, Weighing scale fee, income tax, loading fees, produce tax and different types of product tax.

**Unreliable and costly Hydro-electric power (HEP)** and there are no alternative energy options. Energy costs accounted for up to 73percent of milling costs in 2002 (PSFU, 2002). By 2006, all indications are that this proportion has increased further to over 85percent following the general increase in energy prices countrywide. Energy is a very significant consideration in the profitability of a milling business. Recent tariff hikes have hit the milling industry particularly hard, resulting in some wholly or partial closures. Although tariffs are high, poor energy efficiency of machines and operations tend to expound this particular problem.

**Inadequate enforcement of quality standards**, weights and measure and lack of premium prices has undermined crop quality improvements in the supply chain.

Ms Nalubega of Bukanga said Ware house facilities are limited, Poor post harvest handling, Limited access to big sized weighing scales, Limited number of drying yards limit the bulking and there after marketing is affected.

## **8.0 SUPPLY CHAIN INTERACTORS**

### **8.1 Actors interactions**

Changes in the informal supply environment have accompanied changes in the broader industry. The entry of large, private, companies in maize growing calls for informal suppliers to consolidate and formalize, the way EADEN is doing it. To meet supply requirements arising from changing demands, maize buyers shall often prefer to source through lead farmers or farmer cooperatives as opposed directly from individual farmers. When sourcing from wholesale markets, buyers have little quality control, face uncertainties in supply and price, and lose the ability to trace products (which consumers especially those in developing countries increasingly demand). The following actors therefore need to work together in the supply chain with the help of EADEN and other actors to maintain quality supply

- Retailers such as supermarkets or convenience stores, examples here are Uchumi and Nakumatt in Kampala and from other towns
- Food processors and manufacturers ( like those based in Mbale, Jinja and other bigger towns)
- Input suppliers who produce fertilizer, seed, pesticide, irrigation equipment, and farm machinery (especially those that are based were EADEN operates ).
- Producers that are organized in cooperative societies such as mukujju, Bukanga, Nawandala, Namungalwe
- Wholesalers, traders, and other intermediaries in a supply chain that connect retailers or processors to producers ( e.g Olam).

## **8.2 Institutional interactions**

There is need for organizations supporting farmers such as EADEN to interact with finance institutions to agree on a moderate interest rate for farmers, Uganda consumers associations to understand the needs of consumers. Also organizations providing market information such as FIT, input dealers like UNADA, and then government institutions and frameworks such as NAADS that provide extension support and policy direction are key players in the value chain to ensure better returns to the farmers.

## **8.3 Policy and legal frame works**

Improved maize production combined with a better functioning marketing system can contribute to reducing poverty in Uganda. There are several policy instruments open to the government that may positively influence maize production and marketing

1. Farmers do not have access to information on improved production practices, market intelligence, value addition, better post-harvest handling and demands on quality and standards in different markets. Such information may be included in state extension programs for dissemination to all stakeholders in the maize value chain.
2. Maize production is characterized by small production units which requires an elaborate product assembly process. Collective action whereby farmers form groups and cooperatives with a clear policy direction will enable them to increase the bargaining power. They would also be in a position to take to produce to regional markets centres and earn higher returns as compared to selling at assembly level.
3. Prices in European markets are higher than in the East African region, Middle and Far East. Redirecting exports towards more lucrative markets will increase the value of maize exports and benefit the economy as a whole. However, this will involve a significant effort to raise the standards and certification issues to overcome non-tariff barriers of entry to these lucrative markets.

## **8.4 Cost analysis and profitability**

The investment in the growing of maize in eastern Uganda entails having land- owned or hired, seeds , farm labor and at times other inputs such as fertilizers. Depending on the cost of investment is what will determine the profit. The gross margin analysis, on per hectare or per man-day basis, Uganda with very low or negative gross margins (revenues - variable costs). Analysis of profit levels (revenues - total costs) reveals that on per hectare and per kilo basis at 150 shillings a kilo. So if there is over production and a kilo of maize grains is sold at 300, then the profit margin remains as low as 150 shillings, which is a disadvantage to farmers.

Investment in maize research to produce high yielding varieties that would be made available to farmers could a solution also. Currently, the majority of Ugandan farmers use local (unimproved) maize seed. More research should also be concentr ated on agronomic practices that could be developed as a package for farmers.

## **9.0 OPPORTUNITIES**

### **9.1 Opportunities at production**

- Local consumption is steady especially for institutions and even universities coming up such as Busitema, Islamic University in Uganda and Busoga in the east and else were in the country
- Export market is growing especially the regional market. Kenya being the neighboring country to the east a lot of maize can be sold there. Then maize can also be sold in Tanzania, South Sudan and DR congo.
- Improvements in agro input supply standards
- The support that can be sought from Uganda National Grain Council for information sharing about available markets
- Growing urbanization and consumer population
- Growing local industry (stock husbandry / brewing)
- Expert support for example SIDA is blessed to have a retired extension worker from Serere Agricultural center who has been very helpful to the association.
- Certain banks such as Centenary Bank can also give farmers loans

### **1. Free or cheap Technical support**

Considering that maize is one of the key cash and food crops in Uganda, there is a significant amount of technical support available right from seed companies, NAADS government programmes as well as NGO support. We would however recommend if possible identifying a suitable technical officer who is readily available to advise the farm on aspects like pests and diseases, soil fertility et al.

We recommend that the farmer affiliate themselves with a relevant co-operative society as in addition to the technical support, they could get access to cheap credit (or a grant).

### **2. Intercropping**

Maize can for example be intercropped with beans. This has various advantages including increased profitability from the same acreage and reduced need for fertilizer. Care should however be taken before considering intercropping as crops have different cycles and there might be difficulty in use of say mechanized implements.

### **3. Good Return on Investment (ROI)**

In our model we assume that the farmer will have 15 acres (about 6 ha) and embrace irrigation and thus be able to plant maize over a period of 3 seasons. We assume the farmer will plant Longe 5 improved seed varieties which take about 115 days (about 3.6 months) to mature. This variety of seed costs about Shs. 2,500 per kg.

We also assume access to low cost lending at a rate of 10% from a SACCO to finance purchase of equipment.

We assume our model farmer is selling maize grain (rather than maize flour). Our model is summarized below:

There are however two solutions for the “advanced thinking farmer”.

Market information Services (MIS). The first is to take advantage of the various Market Information Services (MIS) that have cropped up. These disseminate information via SMS, radio etc. Examples include farmgain, agrinet, and ratin which provide retail/wholesale prices for Kampala, other markets and Kenya. Cooperative societies can be linked to such initiative by EADEN.

Warehouse receipt System (WRS). [Pioneered with support from the World Food Programme \(WFP\)](#) who purchase a significant portion of maize in Uganda, this system allows farmer to take their produce to a designated warehouse where it is dried, graded, packed and stored. The warehouse receipt they receive is evidence of storage and it can even be used as security to obtain a loan (60% of value of grain) from banks such as [Centenary Rural Development Bank \(CERUDEB\)](#)

Storing of the product by the farmer until a time when prices stabilize or when they can find a suitable farmer helps them have more control over their produce compared to when middlemen rule the market. You can find out more about the Warehouse receipt system: <http://www.uce.co.ug/index.php>

## **9.2 Opportunities at processing**

### **9.3 Opportunities at trading/Marketing**

Since Uganda has non-GMO maize, the market potential beyond the East Africa Region in general is an untapped market that can pay higher prices than any informal market can ever do. So EADEN and farmers in Eastern Uganda can tap into this vacuum.

The WFP's intervention has focused on investing in agriculture and market assistance in support of small-holder farmer groups and medium-scale traders. It supports training in post-harvest management. This is in addition to WFP's renovation and establishment of warehouses, leasing out warehouse equipment to the private sector, and its support to the warehouse receipts system. As the situation stands, the farmers and dealers who stuck with their maize, might have little or no respite from the government.

Speaking at the National Forum on Agriculture and Food Security under the theme “Unlocking the export potential of Uganda’s agricultural Sector” in Kampala on June 6, Tress Bucyanayandi, the minister for agriculture, animal industry and fisheries, said government had liberalised the economy as a way of encouraging free trade of commodities such as maize.

However, Bucyanayandi said the government recognises maize grain as one of the priority crops in Uganda since it serves as food for most Ugandans, has potential to bring in revenue from outside. “We are working with the other government ministries say trade and other agencies to extend our support to the sector,” he said, without giving details. EADEN can explore all these initiatives and promises.

## **10.0 CONCLUSION AND WAYFORWARD**

### **10.1 Conclusion**

Maize has a great potential for expansion as a cash crop in the districts of Luwuka, Bugiri , Mbale, Tororo and Iganga since the soil is most fertile, improved varieties (Longe 4 and 5) are available, and its production is profitable. The maize market is open and there is an expanding demand for the crop in urban areas and the region. Let EADEN continue networking with community members Advocate and create market linkage as expressed by as pointed out by Kateeba Nyiirro of Nawandala integrated farmers association in Iganga

### **10.2 Way forward for EADEN and partners**

In an effort to improve the competitiveness of maize produced in Eastern Uganda, and destined for both local and export markets, EADEN, organizations such as Action Aid, VEDCO, Africa 2000 should enhance/facilitate collaboration with all the actors from the farm to the last consumer to develop specific commodity value chains further. The overall objective of such a programme would be to identify and remove all major

constraints to achieving competitiveness, and to also ensure equitable returns for producer cooperatives that EADEN works with and those who operate within the local and export food distribution systems. The system can cover two phases, starting with technical analysis of selected agricultural commodities, and followed by an action-oriented dialogue phase wherein chain stakeholders seek to arrive at agreed strategies for implementation.

EADEN and other mentioned organisations should continue organizing training programs to enable smallholders to develop more effective marketing strategies and to negotiate more effectively with traders, in order to raise the prices that they receive for their maize.

EADEN and other mentioned organizations should advocate for increased public investment in road, rail, and port infrastructure to reduce marketing costs as well as the cost of modern inputs such as fertilizer to the farm gate. Rehabilitating the Ugandan railway system would be a key priority.