

MINISTRY OF TRADE, INDUSTRY AND COOPERATIVES

**STORAGE INFRASTRUCTURE DEVELOPMENT PAPER
FOR PEC**

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1.0 Introduction

Uganda's economy is largely agro based with 70% of the population engaged in agricultural production for food crops and cash crops. Among the food crops, grains have proved to be important for food security and for increased incomes. Grains are grown in almost all parts of Uganda but the farmers are faced with post harvest losses ranging from 20 – 36%.

The grain sub-sector occupies a strategic position in the country's food security alongside bananas, cassava and sweet potatoes. It provides producers, produce buyers, processors, exporters and transporters with income from business transactions undertaken along the grain sub sector value chain. It also provides raw materials for agro processing and manufacturing industries. Grains are, therefore, important crops for both food security and income generation.

Uganda is a net grains and cereals producer and exporter. In 2011, beans exports to the East African Community, South Sudan and Congo amounted to 35,920 MTs valued at US \$ 20 Million. For instance, in 2012, beans production was estimated at 915,000 MTs and maize production was 2.75 Million Metric tons. Most of these commodities are traded informally (*UBOS, 2012*)

The above surplus production has always been challenged by limited storage and other post harvest handling issues right from the farm to basic value addition facilities. Uganda is faced with an acute shortage of modern storage facilities, processing machinery and other equipment. Lack of appropriate storage facilities for food grains results into very high spoilage, which deteriorates the quality of material being stored. This coupled with absence of government regulated value addition centers and national grain reserve facilities leads to market imperfections and reduced incomes which in turn negatively affect production and productivity.

At the farm level most farmers operate on a small scale and lack storage facilities. It is not uncommon to find produce kept in one of the rooms in the dwelling together with other household items and domestic animals. Due to absence of enough storage space sometimes the farmers are forced to sell off their produce cheaply after harvesting.

At the community level, apart from a few cooperative storage facilities in some locations, most of the traders store their produce in buildings that were not primarily constructed to store produce. Such stores lack facilities required for the proper storage of produce.

The few well designed and equipped storage facilities are located only in the city and big municipalities.

Based on the market opportunities in the domestic, regional and international markets, the grain sub sector has become an important player in the economic growth of the country. Therefore, improving the storage infrastructure including cold rooms will improve the farmers and traders' earnings from the sub sector.

1.1 Objective

The paper aims at informing the members of PEC the infrastructural challenges for post harvesting handling in the grain sub-sector with a view to propose policy, institutional and regulatory reforms. The main objectives of the paper are:

- i) to promote value addition, improve food security and house hold incomes through setting up standardized grain storage facilities. These facilities can help in minimizing the wastage of food grains and cereals
- ii) To rehabilitate, reconstruct and expand the storage facilities for food storage and access to the regional market
- iii) In essence the paper seeks for an increment in the Development budget from UGX405Million Shillings to UGX2Billion that will enable the ministry to be set up storage facilities in the financial year 2015/16 through the PPP arrangement.

1.2 Justification

Grain production has progressively increased over the years which, has opened up opportunities for value addition and exports and this requires the appropriate storage infrastructure, post-harvest handling and marketing to meet the ever changing demands for food security, value added products and income improvement. The need for standardized storage capacity is to match production levels, quality storage and conditioning. Lack of appropriate storage facilities for food grains and seeds as well as poor post-harvest handling results into very high post-harvest losses (40%) (MAAIF 2013).

Production of Grains and Cereals in Uganda from 2008- 2012

Product	Production Output (Million MT)				
	2008	2009	2010	2011	2012
Maize	2315	2355	2374	2551	2734

Beans	912	925	949	915	870
Wheat	19	20	20	23	20
Sunflower	0	0	0	265	230
Groundnuts	230	258	276	327	295
Millet	275	250	268	257	244
Sorghum	342	374	391	437	336
Rice	178	206	218	233	212
Simsim	99	115	119	142	124
Soya Beans	22	27	27	32	23
Peas	34	41	42	42	35
Total	4426	4571	4684	5224	5123

Source: *UBOS Abstract, 2012*

Under NDP I emphasis was put on value addition which has been carried forward in NDPII and the investment priorities identified were silos and warehouses. were identified as priority intervention areas.

Uganda is well positioned to supply grains to the region and therefore the need to access the regional markets will require the country to meet regional standards and supply required quantities which have been a challenge due to lack of standardized modern storage infrastructure.

Currently domestic consumption for grains is 600,000MTs, whereas production in grains (Maize) is 4 Million MTs and regional demand (COMESA) is 15million MT. Despite the fact that production is increasing, our consumption is not changing proportionately, therefore this calls for exportation of this surplus to the regional markets (EAC & COMESA), however this can not happen currently because our grain is not up to regional standard. This can be mitigated by investing in standardized storage infrastructure that promotes value addition

With the Government recently commissioned Operation Wealth Creation, production of the grain is bound to increase. There is therefore a need to plan for the standardized storage facilities

2. Past and existing interventions

Following the privatization policy of 1990s, government implemented a number of reforms aiming at creating efficiency and increasing private participation in economic activities. A number of policy reforms and programs were initiated.

i. Policy Framework

The main policy instruments that have been put in place include:

- i) The Trade Policy of 2008 with the objective to support the product sectors of the economy to trade at both domestic and international level so as to create wealth, employment, enhancing social welfare.
- ii) The Industrial Policy of 2008 whose objective is to promote environmentally sustainable industrial development to reinforce national goals of long term growth and development
- iii) The National Development Plan 2010/11-2014/15 whose priority focus is to increase production, productivity and value addition.
- iv) The Cooperatives Policy of 2011 whose objective is to develop and strengthen the cooperative movement in order to play a leading role in poverty reduction, employment creation and social economic transformation of the country
- v) The National Standards and Quality Policy of 2012 whose objective is to foster development of a sustainable standard, metrology, conformity assessment and accreditation.
- vi) The National Agriculture Policy of 2013 whose objective is to promote food and nutrition security, and household incomes

Other strategies include the Marketing and Agro-processing Strategy (MAPS) which provides strategies for linking agricultural producers and domestic and foreign consumers and for processing to add value and ultimately, increase incomes of the small scale agricultural producers.

Other relevant Strategies include the National Agricultural Advisory Services (NAADs) which focuses on supporting Strategic/special interventions under the different initiatives through provision of seeds/seedlings, value addition equipment (diary, maize and honey) as well as promotion of technologies.

The National Agricultural Policy and the National Cooperative Policy specifically, emphasize mobilizing farmers to promote household food security through appropriate production and storage practices. Producers and processors all need to be aware of market requirements and standards. This, therefore, stresses close collaboration in implementation strategies.

2.2 Legal and Regulatory Framework

The legal and regulatory framework for the sub sector is guided by the following instruments;

- 1) The Constitution of the Republic of Uganda as amended (2005).
- 2) The Warehouse Receipt System Act (2006),
- 3) The Cooperative Act,(Cap.112)
- 4) The Produce Protection Act, 1913.
- 5) UNBS Amendment Act of 2013

2.3 Institutional Framework

The sector has been largely managed through a multi-sectoral institutional framework. The Public sector is constituted by Ministries, Departments and affiliated agencies under MTIC, key line Ministries include MAAIF, MFPED and MoLG), the District Local Governments and Municipal authorities.

Inspection and licensing of warehouses has been done by the Uganda Commodity Exchange (UCE) on behalf of the Ministry of Trade, Industry and Cooperatives. In addition, district local governments and municipal authorities offer operational permits to entities operating warehouses in their localities.

3. Challenges and issues in storage infrastructure development

In spite of the initiatives by the Government, the grain sub sector still face a number of challenges ranging from policy to infrastructural:

i. Weak Policy, institutional and regulatory framework:

Currently, some existing laws are out of date such as the Produce Protection Act of 1913 and there is no policy that comprehensively addresses the challenges of the sub-sector. Cooperation and Coordination between different Ministries, Departments, Agencies and multiple stakeholders involved in this sector are very weak, resulting in duplication of efforts and wastage of resources. There is need for an integrated approach which involves enabling policies for linking agriculture, processing and marketing.

The absence of a Public Private Partnership Law is also constraining investment in storage facilities.

ii. Limited or no access to credit and lack of collateral for bank loans:

The challenge of lack of capital and the poor saving culture has hindered many farmers and processors from accessing bank loans. Lending by banks is limited due to lack of collateral by most people.

The interest rates are very high. For example, as of June 30th 2014: DFCU bank- 21%; Stanbic bank -20%; Centenary bank- 21%, Standard Chartered -19.5%, Barclays -19.8%, Baroda -19%, Equity Bank 19.5%, Housing Finance-20.5%, Finance Trust – 22.6%, Cairo International bank- 20%, Crane Bank – 24% and this discourages people from borrowing money from banks. There is need for financial intermediation in both rural and urban areas in a market driven and financially sustainable way

Lack of efficient storage facilities

There are inadequate standardized storage facilities at household, community and bulking center levels leading to high postharvest losses Post-harvest losses range between 26% - 40% (UBOS 2010) of the total harvests. This is due to poor handling methods (harvesting, inadequate drying methods, cleaning and grading) and inappropriate storage methods as well as low storage capacity on farm and at trade channels levels in the country. There are fifteen (15) standardized warehouses for both grains and processed products, but only 8 are licensed under warehouse receipt system. Management of warehouses is also inefficient to some extent. For the maize grains, we have standardized storage facilities for only 550,000MT out of 3.2Million MT (MAAIF 2014 Projections) of total production.

Therefore, there is need to enhance both pre harvest and post-harvest handling and management.

iii. Lack of awareness on the harmonized EAC standards system

Standards for most grains (maize, beans, sorghum, simsim) have been developed and harmonized under the EAC standards framework. However, there is little awareness about them and generally not in use. Traders are, therefore, not making purchases based on grades and standards resulting into lack of motivation by traders and processors to promote quality grains. There is need to promote the use of standards and grading mechanisms for better quality grains to fetch higher prices.

iv. Inadequate technical skilled human resource:

There is a shortage of technical skills in grain milling and storage facilities which causes inefficient operations and low productivity at the processing level in areas such as Kisenyi and Nalukolongo. There is a need for intensive programmes of training and human resource development for efficient operation and enhanced productivity of machinery. This calls for short and medium term training of artisans and technicians relevant for the sub sector.

- v. Limited Agro-processing and value addition facilities:** Products from smallholder farmers are usually sold as raw materials rather than processed products. Technology to add value at source is limited, hence limiting the farmer's profitability. The sector faces a challenge of acquiring food grade maize processing machinery and other basic implements that can assist farmers to ease operations. Availability of spare parts and maintenance influence plant –level capacity utilization, product distribution and marketing.

vi. Climatic change and weather shocks

Uganda's agriculture is highly vulnerable to the vagaries of weather. With only a small proportion of land irrigated 1%, (UBOS 2013), Uganda's agriculture is highly dependent on rainfall. Uganda's heavy reliance on rain fed agriculture is a primary factor undermining the country's agriculture performance. Of recent it has been observed that seasons are changing with droughts becoming longer and more predominant. This calls for the need for storage and food preservation facilities.

vii. Shortage of inputs and high prices

Inputs (seeds, pesticides and fertilizers) availability, affordability and quality have become a huge challenge for farmers. Improved inputs are often unavailable in most parts of rural Uganda where farmers are based. Agro dealers are largely located in urban centers that are isolated and far removed from the farmlands.

Even these few agro dealers are observed to handle rather small stock consignments that do not meet the farmer's requirements. Lack of the an established facility to test and certify imported inputs, such as seeds that fail to germinate, fertilizers that do not add value to soils. These have an impact on the yields and the quality of the processed products.

viii. Cold Storage Facilities

Many agricultural products are perishable and require cold storage facilities. Items like milk, fruits, vegetables and flowers require cold storage facilities. The production of these mentioned items is good, due to the conducive climate. However, if there is a huge supply of produce or the supply chain is disrupted, perishable goods have to be sold off at a loss before they start going bad. Many farmers have picked interest in growing horticultural related crops such as flowers, fruits and vegetables (tomatoes, pineapples, and passion fruits) on a large scale. Farms like Rose Buds, Mairye Estates, Wagagai, Fiduga (Masaka road), Jambo roses are in flower commercial farming. There are some cold facilities for fish and one for the flower sector at Entebbe Airport.

4. Key strategies to renovate and construct storage facilities

The Ministry of Trade, Industry and Cooperatives formulated the Warehouse Receipt System Act and Regulations to regulate the operations of warehouses and develop the sector

The government has adopted a Public Private Partnership (PPP) arrangement in the construction and renovation of storage facilities. A project code named Support to Warehouse Receipt System (SWRS) was designed facilitate the construction of silos and renovation of some cooperative stores.

4.1 Outputs of the key strategies

The Ministry of Trade, Industry and Cooperatives embarked on promotion and development of Storage Infrastructure for agricultural commodities value chains as a strategy to promote value addition and collective marketing (*NDP 2010/11-2014/15*).

Eight Warehouses have been refurbished and standardized under Warehouse Receipt System (WRS). These are located at Jinja (Agroways), Kapchorwa (Kapchorwa Commercial farmers Association- KACOFA)), Soroti (), Gulu (Gulu Warehouse),

Masindi (Masindi seed and grain growers), Kasese (2 –Nyakatonzi Cooperative Union and Elshadai Company Ltd) and Mbarara (Banyankole Kweterana Cooperative Union).

So far, the storage capacity licensed to operate as public warehouses under the Warehouse Receipt System (WRS) is 32,000MTs. This is only 0.8% of the total production.

4.2 Proposed interventions

1) Development of the Grain Trade Policy and institutional support

Due to the opportunities and the challenges the Grain sub-sector is exposed to, it was necessary that a policy be developed to guide the developments within the sector. The Vision of the Grain Trade Policy is: a globally competitive grain sub sector for food security, income generation and industrialization.

- 2) **Fast tracking the WRSA:** - The Ministry of Trade, Industry and Cooperatives is fast tracking the establishment of the Uganda Warehouse Receipt System Authority (UWRSA). The UWRSA Board of Directors have already been sworn in, and UWRSA will be responsible for quality control and Standardization in the Warehouses. The Authority will work closely with the members of the Grain Council of Uganda, cooperatives, and other institutions to ensure successful implementation of the initiative

3) Licensing of nine warehouses

The Ministry in collaboration with other partners has refurbished 8 warehouses in Kasese, Jinja, Masindi, Kapchorwa, Gulu, Tororo and Soroti.

The following new warehouses will be supported to develop capacity and qualify to be licensed: Nalukolongo, Kigumba, Kiryadongo, Mityana, Mubende, Kyenjonjo, Kamwenge, Kiboga and Kyazanga. The combined storage capacity of these warehouses is estimated at 185,000MTs. This will increase storage capacity to approximately 7.7% of the total production.

4) Registering a New Commodity Exchange

UNCE has been demutualized to shareholding arrangement. The private sector will have 80% shareholding while the Government through UDC will have minority shareholding of 20%

5) Construction and refurbishment of warehouses and Silos under the PPP arrangement

The Ministry plans to develop, construct, refurbish and equip warehouses storage capacity of about **1,000,000MTs** of Grain Silos and Warehouses as below:

- Through Uganda Development Corporation (UDC), Two (2) facilities with a capacity of 100,000MTs each as National Food Reserves and stocks in here can be used for price stabilization in case of disruptions in production.
- Under the PPP arrangement, Ten (10) silos with 20,000MTs as the main value addition and agro-processing centers will be constructed.
- Private sector is encouraged to construct Sixty (60) warehouses with 5,000MTs capacity as the main regional bulking and trading units.

Standard Warehouses can clean and dry grain delivered by producers prior to grading and weighing, enabling producers to know the true quality of their grain. If cleaning, drying and storage services are offered closer to where the grain is harvested, then grain quality will be better preserved. If the warehouse offers both to store and to buy their grain, producers will have options to suit their individual needs.

This in our view will holistically alleviate the key commodity marketing constraints of storage, limited access to market information, formalization of marketing channels, commodity quality assurance and standards systems and inventory credit by small holder groups (co-operatives) and traders in Uganda with an ultimate aim of improving livelihoods.

Finally, and perhaps most importantly, the farmer/producers depositing their grain in public warehouses must collaborate in an association, partnership or other entity to pool their grain to meet the minimum deposit of five to ten tons. Both warehouses and bankers alike need sufficiently large size deposits to warrant the administrative costs for storage or for analyzing and assessing a loan collateralized by warehouse receipts of grain.

5. Policy recommendations

1) Recapitalize UDC to build its capacity to prepare bankable projects. Through UDC, a collaborative technical assistance support and PPP arrangements in construction of warehouses and silos will be pursued.

2) Recapitalized UDB and strengthen the agriculture division of UDB. This recommendation builds on the earlier recommendation by PEC on 'Scaling up valuation addition in Agricultural products (April 2013).

3) Policy Reversal: Government through privatization divested all her assets resulted into the sale of warehouses and storage facilities. But in pursuit of PPP policy, Government may consider investment in Grain strategic areas where the private sectors have not shown interest. Government should construct facilities for the private sector to manage and operate. Government will keep the Policy, regulation and Standards roles.

4) Buffer Stock for price stabilization and national security: Agricultural production in Uganda is characterized by fluctuations in production as dictated by the weather conditions and in seasons of bumper harvests prices tend to drop there discouraging farmers. Government need to intervene to stabilize price and release stock in period of low supply.

Annex 1

Below is a table of the tentative sites for the planned Silos and Warehouses.

2 strategic silos as food reserves 100,000 MTs	10 Regional silos of 20,000MTs (The main value addition centers.)	60 Feeder WHs of 5,000MTs to counter post-harvest losses.	10 WHs for Zonal collection and marketing centers	180 stores of 1,000MTs–4,000MTs refurbished in strategic zones. <i>(The target is mainly cooperatives and other groups down the value chain).</i>
Gulu	Soroti	Kumi, Bukedea, Serere, Katakwi, Amuria, Palisa.	Kaberamaido	
	Oyam	Agago, Amuru, Kitgum, Nwoya, Lamwo, Pader, Lira, Kole.	Otuke	
	Arua	Nebbi, Zombo, Adjumani, Maracha, Koboko, Yumbe.	Terego	
	Hoima	Bulisa, Masindi, Kibaale, Kyankwanzi, Kiryandongo.	Nakaseke	
	Mityana	Mubende, Kiboga, Gomba, Butambala, Kalungu, Masaka.	Mpigi	
	Kyenjojo	Kamwenge, Kyegegwa, Kabarole, Bundibugyo.	Rwimi	
	Sironko	Bulambuli, Manafwa, Bududa, Kween, Bukwo, Kapchorwa.	Palisa	
Mbale	Iganga	Kaliro, Mayuge,	Bunjako	

		Namutumba, Bugiri, Namayingo, Kamuli, Kayunga, Buikwe.		
	Kabale	Kanungu, Kisoro, Rukungiri, Kabale.	Kiruhura	
	Isingiro	Bushenyi, Rubirizi, Sheema, Mitooma, Nsiika, Ntungamo, Ibanda.	Rakai	

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