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INVESTMENT IN VALUE CHAIN DEVELOPMENT: A SOLUTION TO THE INCREASING PRICES OF MAIZE

1.0. Background

1.1. Maize Production in Africa.

Maize production occupies approximately 24% of farmland in Africa and the average yield stagnates at around 800kg/acre/ year. The largest producer of maize in Africa is Nigeria with over 33 million tons, followed by South Africa, Egypt, and Ethiopia (Grow for Me, 2022).

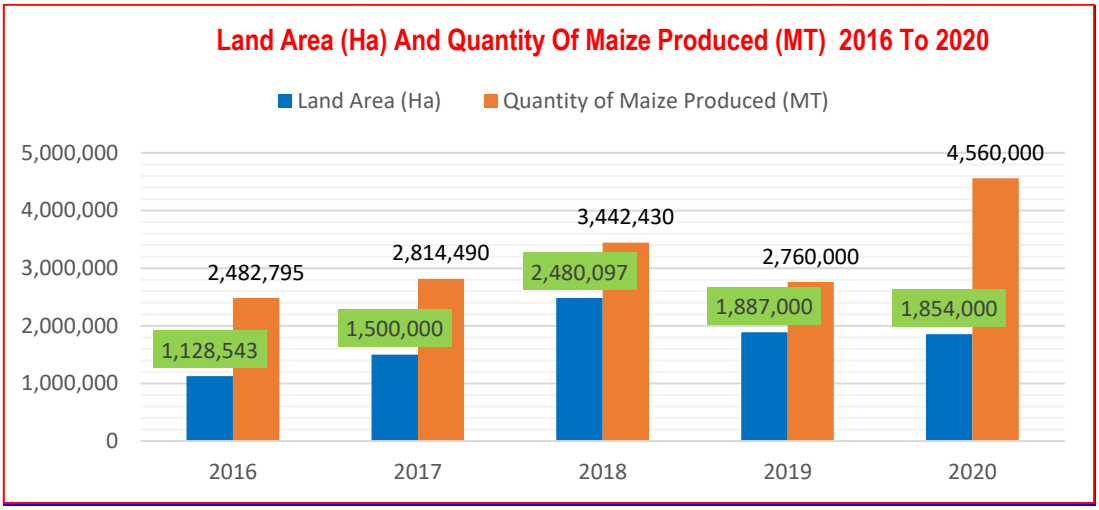
Maize is the most important cereal crop in sub-Saharan Africa (SSA) and an important staple food for more than 1.2 billion people in SSA and Latin America. More than 300 million Africans depend on maize as the main staple food crop. All parts of the crop can be used for food and non-food products. Maize accounts for 30-50% of the low-income household expenditures in Africa. Over 30% of the caloric intake of people in SSA comes from maize. Several African countries that depend on maize as a staple food crop have adopted agricultural policies that maintain a steady supply of the commodity through increased production and productivity of the crop. Maize is also consumed as a vegetable and its rich in dietary fiber and other nutrients.

1.2. Maize Production in Uganda

Uganda is the eighth largest producer of maize in Africa and third in East Africa. The production coverage area for maize is 1.854 million hectares with a production capacity of 4.56 million metric tons (UBOS 2021). An estimated 75% of maize production and 70% of marketable surplus are attributed to smallholder farmers. Maize as the 3rd most cultivated crop after banana and beans is a growing source of livelihood and foreign exchange through exports in Uganda. According to the 2018 Annual Agricultural Survey, at least 4.26 million households or 55% of all agricultural households, were engaged in maize cultivation (UBOS, 2019). It is grown by small-scale farmers who for, so many years have cultivated maize for food and income generation. Maize acts as a livelihood to more than 100,000 traders, 50 exporters and about 3 million Ugandan farm households. Approximately, 2.8 million Metric Tonnes (MT) of maize are produced, and 90% of that amount is exported as grain to Kenya. In 2018, Uganda exported about 461,691 tons in 2018 (ITC and UN COMTRADE, 2020).

Over the years, Production was oscillating around 2.5 to 2.8 million metric tons of maize until 2020 when the production almost doubled to 4.56 million metric tons. Uganda's maize production has been on a raising trend in the last five years with a record high of 4.56 million metric tons in 2020 and a record low of 2.4 million metric tons in 2016 (See figure 1).

Figure 1: Maize production (MT) and land under maize production from 2016 to 2020.



Source: UBOS 2021.

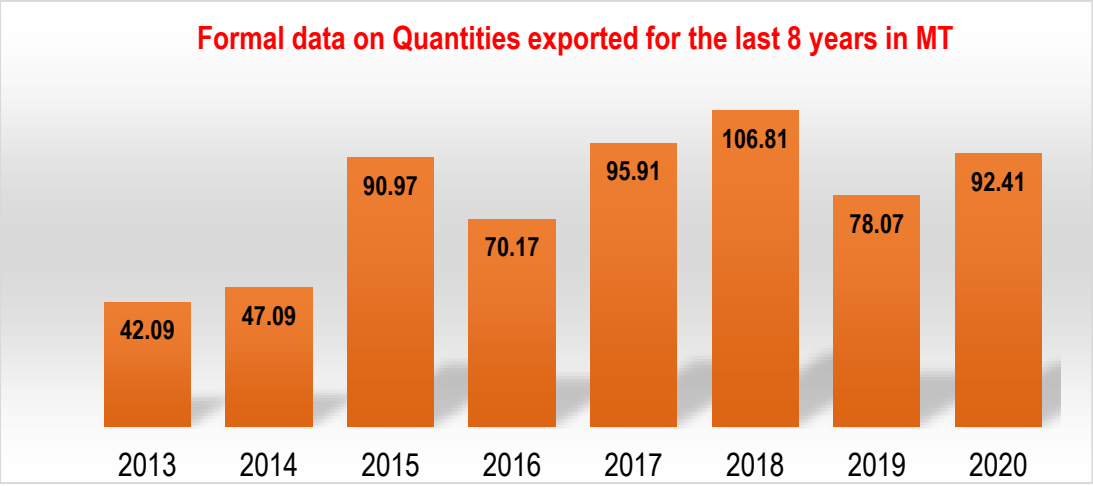
Maize is one of the 18 agricultural commodities that the government of Uganda considers to have the potential to considerably contribute to increasing rural incomes, improving livelihoods, as well as offering food and nutrition security.

Maize has linkages with other sub-sectors within agriculture. For example, it is a major ingredient in poultry and livestock feeds. The feeds produced from maize can feed a population of about 50 million chickens and 3.2 million pigs in Uganda. Uganda is also the leading producer and exporter of poultry products in the East African region with a population of about 296 million people.

Due to high demand in the regional market, Uganda exports maize mainly to Kenya, South Africa, the Democratic Republic of Congo, Rwanda, Tanzania and markets within Eastern and Southern Africa. Therefore, increasing maize yields and quality would go a long way in strengthening its position in the regional and international markets. However, the accuracy of data on volume and value of exports is in question due to the high rate of informal trade at the cross-border level mostly to Kenya and Rwanda.

Uganda has only been able to formally export half of the estimated 66,671 tons to her neighbouring countries. Belatedly, Kenya; Uganda's main trade partner increased production by 36% from 2.9 million metric tons in 2017 to 4 million metric tons in 2018. This contributed to a significant reduction of maize prices at the farmer level from 600 shillings per kg to 250 shillings per kg.

Figure 2: Formal export of maize for the past eight years.



Source: Bank of Uganda, 2020

Uganda and Kenya have partnered to balance out the surplus of grain produced in Uganda. The partnership is expected to allow for more effective and efficient trading of popular grains. However, Uganda's weaknesses to control commodity flow make cross-border trade a challenge. The government of Uganda should therefore find viable measures to ensure control of flow at the borders as well as increase productivity.

2.1. The Problem: Current State of Maize Grain in Uganda

Generally, the inflation on food crops has risen from 6.8% in June 2022 to 16.4% in July 2022 (BOU, August 2022). This, coupled with the rise in the inflation of electricity and fuel utilities to 17.2% has contributed significantly to a rise in commodity prices. The prices for maize prices have gone very high than ever recorded in the history of Uganda. A kilogram of maize grain reached a peak price ranging from 1900 to 2000 Uganda Shillings. Currently, at peak harvest in most of the districts in Uganda, a kilogram of maize grain is going for about 1200 to 1500 Uganda Shillings. Due to an increase in maize prices, from 1500 Uganda Shillings per kilogram in March 2022 to 3,500 in July 2022, many schools were forced to close before the originally planned dates of closure because they have exhausted the budgets for feeding the students.

In 2018, Uganda's livestock population consisted of 12.1 million cattle, 15.6 million goats, 4.4 million sheep, 4.5 million pigs and 48.3 million poultry. Most of this livestock depend on maize bran as one of the components for their feed and with the high cost of maize bran being sold at 1,500 Uganda Shillings, this has affected over 60% of Ugandans who derive their livelihood from livestock (EPRC, 2021). Furthermore, over 100,000 farmers in the livestock, poultry, and piggery value chain have been affected by the increased animals' and birds' feeding costs.

Normally, animal production especially animal feeds account for 70% but with the current trend of maize prices, the cost of animal feeds has accounted for up to 120% yet, the price for livestock and their products has remained the same or even reduced in some instances because of reduction in consumption levels.

2.2. Causes of the Current Increased Maize Prices

i. **Poor input quality;** According to Uganda Seed and Traders Association (USTA), counterfeit seeds account for 20% of the seed on the market. Further, Uganda National Farmers Federation (UNFFE) in collaboration with the Anti Counterfeit Network African in their findings stated that over 60% of herbicides and pesticides on the market are fake.[1] This has tremendously affected grain yields and farm productivity. This challenge is partly being addressed through contract farming. Some private companies such as FICA Seed ltd. contracts farmers and facilitate them with the right quality and quantities of inputs like seed, fertilizers and extension. While contract farming should benefit both producers (assured grain market) and processors (stable supply of grain), contract enforcement is often difficult when there is a better marketplace.

[1] https://unffe.org.ug/farmers-join-forces-to-fight-counterfeit-agricultural-products/

ii. **Use of low input;** According to Birungi et al. (2016)[2] , the percentage of maize farmers who use improved technologies and practices is as low as 21% for improved seed, 9% for pesticides, 8% for chemical fertilizers, 7.7% for herbicides, about 3% for mulching, and less than one percent for irrigation. Due to limited use of productivity-enhancing technologies and practices, the average maize yield was estimated at 1.65 tons per hectare in 2015/16 compared to 5 tons said to be achievable at research stations.[3] This represents a huge yield gap of 3.35 tons per hectare.

iii. **Pests;** in April 2022, over 13,000 acres of crops were ravaged by caterpillars in especially African Armyworm as stated by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) and the most affected crops were maize, millet, sorghum, wheat and sugarcane [4]. About 1,407 farmers with about 1,000 hectares from about 40 districts were affected. This has posed a risk to the food security of the country.[5]

iv. **Drought stress;** due to climate change trends with the fact that about 21% of farmers are likely to use improved seeds which are likely to be drought resistant, rainfall trends changed in this year and in most regions across the country, rainfall delayed to come by over 40 days and even after it came, the rainfall delayed and even disappeared at the time when the maize was flowering which has eventually caused many crops to die off.

v. **Lack of capital to buy and store grains;** members of The Grain Council of Uganda (TGCU) have over 345 warehouses with storage capacity of about 3,500,000 tons. However, the warehouses are operating at about 30% to 40% of the installed capacity because the owners do not have sufficient capital to buy all the maize grain and sell during times of scarcity. This has led to exporting of raw materials to neighboring countries at a reduced price.

vi. **Sudden stop in the distribution of hybrid seeds by Operation Wealth Creation (OWC);** OWC stopped distribution of quality seeds (F1) for planting from season 2021B. Before season 2021B, OWC used to supply over 4 Metric tons of seeds to every Member of Parliament, 10 tons to Cabinet ministers and other large-scale maize producers in the

[2] Barungi, M., Guloba, M., & Adong, A. (2016). Uganda's Agriculture Extension Systems: How Appropriate is the Single Spine Structure? Kampala, Uganda: Economic Policy Research Centre
[3] WFP & NPA. (2017). Towards zero hunger. A strategic review of Sustainable Development Goal 2 in Uganda. Kampala: National Planning Authority.
[4] https://www.aa.com.tr/en/africa/uganda-deploys-soldiers-to-contain-armyworm-invasion/2564689#
[5] https://www.theeastafrican.co.ke/tea/science-health/fall-armyworm-spark-fears-of-food-insecurity-uganda-3784062.

country. The politicians in most cases distributed the seeds to their supporters and indirectly, they contributed to the production of quality seeds. Because seeds were not given, many farmers could not afford quality maize seeds that were going for 8000 Uganda Shillings per kilogram and for one to plan an acre of maize, he needed 10kg of seeds which is equivalent to 80,000 Uganda Shillings. Large-scale farmers who have over 100 acres need over 8,000,000 Uganda Shillings to spend on seeds thus high cost of production.

vii. **High cost of fertilizers;** as most of our soils have lost nutrients, farmers have gotten used to the production of maize using inorganic fertilizers for better yields. However, the increase in price per kilogram from 2000/= in 2020 to an average of 5000 Uganda Shillings per kg is has contributed to reduced yields of maize grains in this year 2022.

3.0. Policy Recommendations

i. **Provision of clear and strong value chain linkages**. The new PDM approach should be made in line with the zonal economic planning strategy adopted by Government in the NDP III. There should be clear and strong private sector linkages between the parish zonal levels on one hand. On the other hand, there should be strong linkages between farmers, cooperatives, and SMEs located in Economic Zones. This recommendation relates Pillar 1 (Production, Processing and Marketing) of PDM which aims to promote the production and processing of one or more of the 18 priority commodities, maize included.

ii. **Availing of affordable working capital;** Most of the installed warehouses are meant operate at 30% to 60% of the installed capacity but due to lack of affordable working capital, the warehouses are operating under the installed storage capacity leading to limited grains supply and production of grain products.

a. **Guarantee schemes;** The Government of Uganda should provide support the warehouse owners to borrow money out of the country. The highest amount of money that Stanbic bank can give is 5 billion Uganda shillings and yet some of the biggest grain dealers like Aponye have storage capacity of 60,000 metric tons which requires 120 billion according to the current maize price of 2000/= per Kg of grains.
b. **Affordable financing through UDB**; Government of Uganda can allocate more affordable capital to the Uganda Development Bank (UDB) so that silos and warehouse owners can buy and store grain.

iii. **Create a well-structured, market-friendly public-sector procurement of grains.** Engagements with stakeholders found that some public institutions particularly the military, police force and boarding schools are major consumers of grains in Uganda. However, their procurement practices contribute to unstructured trade as elaborated by other grain sector report. Given their significant footprint in grain markets in the country, the participation of key institutions in structured grain trade can "pull" more grain through certified warehouses, thus promoting organized grain trade and creating a business case for greater investment in warehousing, aggregation and commodity trade financing.

iv. **Zero-rate VAT on all post-harvest equipment, machinery, products and construction of grain storage facilities such as warehouses.** These include; grain shellers, tarpaulins, grain dryers, grain storage silos, hermetic storage products such as PICS, AgroZ and Grain Pro bags, testing equipment such as moisture meters, and aflatoxin testing kits. This would reduce postharvest losses in maize and put an extra 232,709 MT in the food basket which can either feed over 8.3 million Ugandans and earn approximately USD 41,215,579 (considering Uganda's per capita maize consumption of 28Kg a year and a current maize price of UGX 650/KG). Additionally, the affordability of such machinery will help in the adoption and implementation of East African grain standards that would eventually increase the e competitiveness of Uganda's export.

v. **Allocate more resources to operationalize the National Seed Policy**; through the proposed interventions, the policy is expected to ensure increased production, availability, accessibility and affordability of quality seed and associated technologies to increased agricultural productivity and reduce the number of challenges like; low level of commercialization, poor linkages between research and farmers; use of fertilizers, limited use of irrigation, land fragmentation; low levels of value addition, high cost of financing, lack of agricultural support machinery, the prevalence of pests and diseases as well as transport mechanisms which affect the distribution of inputs and farm produce.

vi. **Implementation of the 2015 National Grain Trade Policy;** government needs to step up efforts to implement the strategic interventions in the 2015 National Grain Trade policy. This policy focuses on interventions aimed at improving the supply of quality

grain through adoption of post-harvest handling best practices, and use of modern storage and value addition facilities. It aims at promoting agro-processing and value addition, information sharing and marketing, storage and post-harvest losses.

vii. **A Private Public Partnership (PPP)** arrangement could be put in place so that the private sector becomes the reserve for grains that are procured by the government of Uganda and in cases where grains are scarce, the stored grains are released into circulation to reduce on food.

viii. **Need for a price stabilization mechanism;** A price stabilization mechanism should be put in place to determine the price of maize. The standard price for maize can be determined in Kampala and later the effect is distributed to the villages. We recommend that a pricing committee should be composed of the government for regulation and the private sector i.e. buyers, farmers and producers.

4.0. Conclusion

The private sector believes that to stabilize the food crop inflation which is as of August 2022 is at 16.4% and still increasing and ensure food security, there is need for consented efforts both from private sector players and the government of Uganda in: availing and use of high yielding seeds, investing in storage facilities and production infrastructure such as irrigation schemes, implementation of the existing policies and revisiting the tax regime. These can be achieved through public-private sector dialogue and partnership. PSFU continues to champion steady production and supply of food to meet local and regional market demands through our programs and projects.