

# Tackling Climate, Rising Food Prices, and Agro-Inputs Access to Bolster Agricultural Resilience

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## Key Messages

- Price stabilization is required to address the rising agro-input prices in 2022 that limit input access for Ugandan smallholder farmers.
- Factoring weather forecasts in pre-season planning by farmers and SMEs can mitigate the impacts of deteriorating weather patterns. These deteriorating weather patterns disrupt planting and harvesting seasons and have fueled food insecurity in the country.
- Scaling up improved seed varieties is critical to building agricultural resilience to boost productivity and incomes.

adoption and yields and, subsequently, incomes to improve their resilience and mitigate COVID-19 effects. aBi supported its partners to provide seeds and fertilizers to 37,000 farmers producing maize, beans, and soya beans. Through the project, aBi partnered with local Small and Medium Enterprises (SMEs): AgroWays Uganda Ltd, MMACKS Investments, Arise and Shine Maize Millers, Grow More Seeds & Chemicals Ltd, Acila Enterprises, Ngetta Tropical Holdings, Aponye Uganda.

The project interventions included training farmers in good agricultural practices such as post-harvest handling. It also supported marketing, improved seed (for maize and beans) mineral fertilizers distribution, and facilitated market access for farmers' produce.

Over three seasons, the project distributed 509MT of maize seed (100% of target) and 535MT of bean seed (99% of target), and 3,157MT of mineral fertilizer to Implementing Partners (IPs). The project targeted 37,217 farmers.

Of the target, 14,550 farmers received maize seed and fertilizer, and 8,775 farmers received bean seed and fertilizer. Thus, 23,326 farmers (45% women and 17% youth) directly benefited from the project. This reach marked 62.6% of the target. In addition, there was an increase in acreage under the supported crop – the project targeted one acre for each beneficiary. On average, farmers allocated more than one acre to the supported crops.

In addition, jobs, both skilled and unskilled, were created. The unskilled were 285 (89 percent women), and the skilled 84 (63 percent women).

Farmers' incomes increased (74% for maize and 26% for beans) due to increased grain volumes and yields. Better high-yielding seed varieties that attract a higher price offered under the project, coupled with farmer training in post-harvest handling, led to high-quality grain. In 2020/21, the farmers and SMEs received better prices due to the high demand for beans and maize by the government and other agencies for COVID-19 relief. This increased demand created competition between the IPs and other companies and the 'middlemen' involved in the grain business and drove up prices. This competition fueled side selling by farmers.

As a result of the project, beneficiary farmers received an additional income of UGX 36 billion. At the same time, the partners got UGX 72 billion. In addition, because of the intervention, the yields of beans improved from 450kg/acre to 550 kilograms/acre. In comparison,

The agricultural sector is the backbone of Uganda's economy. It accounts for approximately 24 percent of the country's GDP and 34 percent of its export earnings. In addition, it employs about 65 percent of the nation's labor force.

Farm inputs must be available, affordable, accessible, and of good quality for agriculture to prosper. Seeds, fertilizers, and agrochemicals are essential for improving the productivity and incomes of smallholder farmers in developing countries.

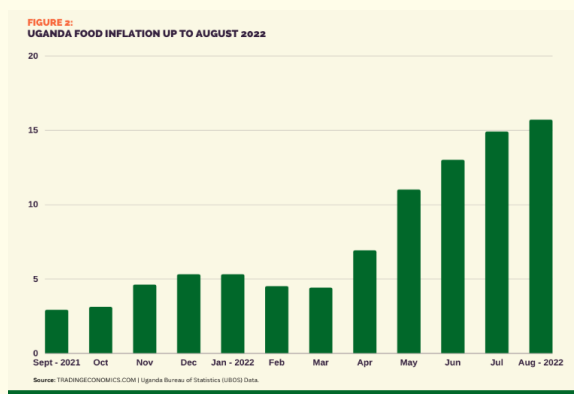
Between 2020 and 2021, the Agriculture Business Initiative (aBi) Development Ltd implemented its COVID-19 Response project: "Building the Resilience of Smallholder Farmers through Increasing Access to Agro-Inputs." The UGX 19.7billion project sought to increase farmers' access to agro-inputs through input subsidies. In addition, it aimed to safeguard the production, trade, and processing of essential food staples.

The project provided farmers with essential agro-inputs such as fertilizers, seeds, and advisory services. It also availed them with information to increase their

maize yield increased from 1000kg/acre to 1500kg/acre.

In 2022, aBi evaluated its resilience project approach, performance, and lessons learned which provided insights into the risks that affect and will influence future agro-input markets and interventions. By contextualizing its learning at a national level, aBi explores the potential opportunities for policy action on three main risk areas as explained below:

## PRICE VOLATILITY AND THE NEED FOR STABILIZATION

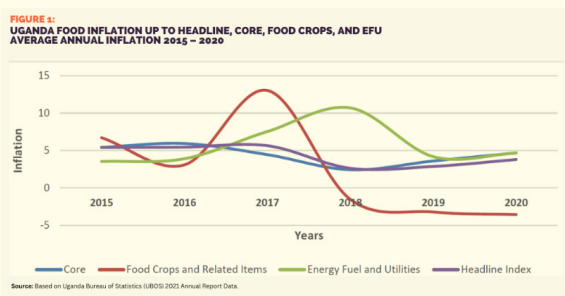


While aBi anticipated that the IPs would buy back the farmers' produce through existing forward contracts, the IPs bought fewer volumes than targeted. The majority of farmers (84%) sold some of their produce individually to other buyers (side selling) due to price volatility.

Market access is the primary objective for smallholder farmers to enter into contract farming. However, local and international markets for crop commodities are often highly volatile and have unpredictable price changes posing a significant risk.

Price fluctuation (Inter-annual price variability) is not only harmful to consumers but also affects producers. Generally, poor farmers do not have enough investment capital to sustain such unpredictability. Therefore, this unpredictability can result in poor investment decisions and compromise production in the long term. In addition, high short-term market price jumps can keep farmers from honoring their contracts to side selling. On the other hand, low market prices harm traders and farmers alike.

Such price volatility has hit Ugandan farmers hard over the last five years. For example, in 2018, maize dropped from 1,000 to 200 UGX per kilogram. This significant drop shuttered the farmers, especially those who lacked proper storage facilities and could not access warehouses. Moreover, because of the lack of a 'good market,' the affected farmers had no alternative but to sell their grains at a 'giveaway' price.



In 2020, the country's annual average food crop inflation

decreased to minus 3.6 percent, from minus 3.2 percent recorded for 2019 (Figure 1).

The annual average food crop inflation decrease was attributed to the COVID-19 pandemic in 2020.

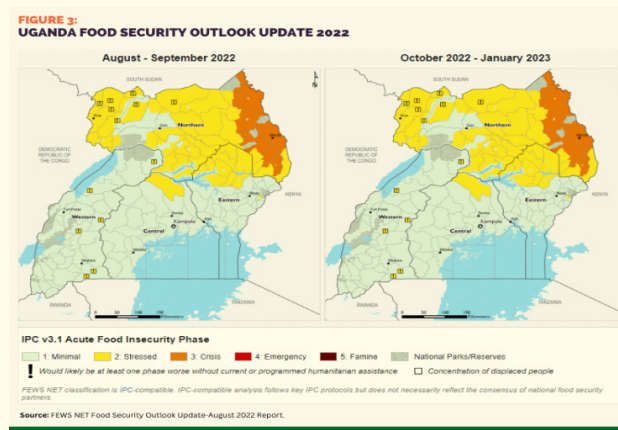
However, in 2021/22, the barriers to accessing input markets faced by Ugandan smallholder farmers have increased mainly due to rising inflation. Fertilizer prices have more than doubled since the start of the year, triggering forecasts of food production decrease and famine. In addition, beans and maize - the most consumed foods- have already seen rising costs, and farmers struggle to get seed inputs. As a result, the period registered a steep spike in food prices that/which increased to 15.70 percent in August 2022 (Figure 2).

The Bank of Uganda (BoU) forecasts show that core inflation for 2022 will remain at 7.0 to 7.4 percent. The inflation outlook is driven by higher exchange rate depreciation and dry weather resulting in the sharp rise of food crop prices. In addition, the current global inflationary pressures worsen it. As a result, BoU forecasts that inflation pressures will continue to rise well into 2023.

These trends and experiences, with limited government intervention, underscore the need for agricultural policies to stabilize market prices. Uganda has been mostly a free market. Unpredictability and distorted pricing can keep even established traders from honoring their contracts. Unstable prices of agricultural products often lead to farmers abandoning or scaling down on crop production in subsequent seasons. Therefore, at such a time when maize prices are falling and failing farmers, the Government or development partners need to come in strongly to implement price stabilization strategies. These could include supporting the construction of silos and warehouses and establishing commodity funds<sup>13</sup>.

The aBi evaluation recommended that IPs establish forward contracts with farmers that specify the price (including minimum fee) to buy farmer produce to address side selling. While most IPs had these contracts in place, some did not.

Few farmers receive forward contracts with a minimum price for their grains; this market instrument is more common in exportable cash crops. Many farmers who depend on under-developed grain value chains for their livelihood and sustenance are left to make production decisions based on the previous year's prices in an industry known for dramatic swings in supply and price<sup>11</sup>



## DETERIORATING CLIMATE AND UNPREDICTABILITY

With less than three percent of agricultural cropland under irrigation, Uganda's subsistence farmers depend on seasonal precipitation for crop production. However, with the increasingly deteriorating weather patterns, Uganda is experiencing prolonged drought seasons, disrupting planting and harvesting seasons that have fueled food insecurity in the country.

The aBi resilience project evaluation revealed the negative impacts of the prolonged drought on its beneficiary farmers, IPs, and contrasted with unsupported farmers. For example, the volumes of maize for beneficiaries increased by only 19.2% from 2.1MT before the project to 2.5MT after (maize yield increased by 13.6% from 818.5kg/acre to 930.4 kg/acre for the beneficiaries).

This drought, which adversely affected yields for unsupported farmers (32% yield reduction), was mitigated by the project-supported farmers through good agricultural practices on which they were trained. These practices included applying fertilizers and planting early maturing seed varieties, for example, the Fortune 6 FH6150 maize seeds.

As a result of the low productivity from the drought, IPs were constrained by farmers' inability and unwillingness to recover input (seed and fertilizer) cost contributions of 20% and 40% from farmers, especially during the first season. For one partner, Agro-Ways, yields declined to as low as 200kg/acre.

In 2022, erratic early rainfall prompted plowing and early planting for the second season. However, cumulative rainfall during the dry period in July and August remained below average across most of the country. As a result, groundwater resources remained stressed after poor rain in the first season from March to June.

Meanwhile, in the eastern and parts of northern Uganda that received localized heavy rainfall, over 12,000 people were affected by landslides and flash floods. Banana production systems in the cattle corridor of Uganda are also severely threatened by drought. Available forecasts for the September to November 2022 second rainy season indicated that cumulative rainfall would most likely be near average (Figure 3). However, below-average rainfall remains possible, resulting in a fourth consecutive below-average crop production season.

More than ever today, the deteriorating climate and its unpredictability have become critical determinants for agricultural sector performance. Providing weather forecasts would aid farmers in pre-season predictability and planning. These forecasts would allow the farmer to make educated decisions at planting time. Pre-planting contracts would also encourage farmers to adopt improved seed and fertilizer as they target high yields to meet the market quantity specifications<sup>15</sup>.

Due to prolonged droughts, farm-level productivity is far below the attainable potential for most crops. However, irrigation is critical in aiding farmers against climate change and plays an integral role in transitions from subsistence to commercial farming by ensuring year-round production and farm employment

According to the annual Ministry of Agriculture 2017 report, there is increased knowledge about appropriate irrigation and water management technologies through guidelines developed and disseminated to farmers.

Therefore, there is still an opportunity to exploit the irrigation

potential, ensuring that Uganda is food secure and an exporter of agricultural products.

## **SEED QUALITY, POST-HARVEST HANDLING GAPS**

Smallholder farmers in Sub-Saharan Africa access 90% of their seed needs from informal seed systems, and the majority are faced with low-quality inputs especially seed crops.

Low uptake of improved varieties and quality seeds and continuous use of 'home-saved' seeds has led to late and poor crop harvests among Ugandan farmers. The common characteristics of poor-quality seeds are low germination, mixed varieties, low plant vigor, diseased plants, or the introduction of weeds.

The aBi evaluation revealed that some IPs delivered poor-quality seeds, leading to poor germination, especially in the project's first season. IPs procure seeds from sources with a weak quality control system. While this was not widespread, farmers reported having received counterfeit seeds that they received hybrid seeds that failed to germinate.

The IPs interventions with the farmers created awareness that the farmers now, more than ever, appreciate and understand the benefits of using fertilizer and improved seed. As a result, there was an emphasis on Quality Declared Seed (QDS). Project partner MMACKS trained farmers in producing QDS. In addition, farmers were given contracts to grow beans and supply them at a premium price. As such, the demand for fertilizer by the project beneficiaries has increased. As a result, there is also growing demand for QDS.

Improving the quality of the seed system can mitigate these risks in the value chain system. Improved seeds have high germination rates, less infestation from seed-borne diseases, better tolerance to abiotic stress, genetic purity demonstrated in uniform plant stands, higher quality produces, increased total yield, and a higher net income. Yet, farmers have low countrywide adoption of improved seeds.

Farmers' low uptake of modern seeds has been attributed to a lack of knowledge and behavioral constraints. Training for farmers, including lectures and practices about how to improve seed quality, is an efficient means to enhance farmers' ability to control the quality of seeds. Under the aBi resilience project, the number of training demos exceeded the target by 71%, meaning there is a great interest and potential for knowledge transfer. In addition, the World Bank recommended that farmers in Uganda need practical training about the uses and gratification of high-quality seeds to foster crop productivity.

## **CONCLUSION & RECOMMENDATIONS**

From the aBi experience, it is clear that adaptation is required on these three critical fronts for significant impact and benefit for Uganda's smallholder farmers and SMEs. Reorienting project design to factor evidence-based climate forecasts and awareness in intervention planning is – among other actions above – critical to addressing the ever-changing, and deteriorating, weather patterns.

More considerations need to be made on price stabilization to curtail the losses from volatility for both the farmer and trader. Key among those is getting the forward contracts factored into intervention design and putting in place the necessary infrastructure, such as warehouses and silos, for when the market

prices take a surprise turn. COVID-19 and the Ukraine war are critical examples of how external forces can influence the agricultural markets, driving up prices in most instances in the last four years.

Scaling up QDS production investments could have the potential to not only offset losses from crises but also build the necessary resilience within Uganda's agricultural system. In addition, these investments would help boost the incomes of Uganda's farmers and the SMEs that deliver vital support in agriculture.

The above initiatives should be underpinned by a culture of adaptive management to thrive. Adaptive management will enable SMEs encountering bottlenecks to learn, course-correct, and capture systemic change for benchmarking. However, this approach needs strengthening to reinforce resilience-building efforts.

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The Agricultural Business Initiative (aBi) is one of the major players in facilitating agricultural sector growth in Uganda. aBi acts as a vehicle for channeling technical and financial support to smallholder farmers through its Implementing Partner (IP) agribusinesses across the country. aBi aims to build a solid and competitive agriculture sector

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