

## APPLYING SYSTEM MAPPING TECHNIQUES TO UNDERSTAND SHOCKS COVID-19 UPDATE REPORT NO. 2 (25 JUNE 2020)

### Executive Summary

This report captures key impacts of COVID-19, and the corresponding government response, on the agriculture market system in Uganda. This update report discusses the impact on the agricultural inputs supply chain, based on our analysis of open-source information combined with insights derived from system maps. These assessments will be updated as new information becomes available.

#### Input availability likely decreased in the short-term, with higher input prices

Importers and manufacturers of agricultural inputs have been negatively impacted, particularly by delays at the borders and restrictions on movement. Since a large fraction of inputs are imported, border delays have a substantial impact on the volume of inputs available to both importers and wholesalers, and increase the cost of transportation. Importers may also reduce imports further in order to increase liquidity, in response to the risk that demand may drop, and more broadly within the uncertainty that the pandemic brings. This is expected to reduce input availability at both the wholesale and retail level, and increase wholesale and retail prices in the short-term, particularly impacting commercial agribusinesses. These effects could persist through August, when many farmers will begin purchasing inputs for 2020 Season B.

#### Risk to businesses along the inputs supply chain

All types of businesses along the agricultural inputs supply chain, including importers, manufacturers, wholesalers, distributors, and agrodealers, have likely been negatively impacted by the precautionary measures put in place by the government. Some businesses have been unable to operate as normal, while most are facing disruptions and higher operating costs, particularly for transportation. These higher costs will likely be transmitted through the supply chain, contributing to the increase in prices. Smaller businesses have reported greater issues in accessing financing, a potential buffer to the impacts. Overall, businesses in this sector are at higher risk of bankruptcy or insolvency, though the magnitude of this risk will depend on how long the restrictions put in place (and their effects) continue to last.

#### Demand for inputs will likely be reduced, with increased risk of counterfeit inputs

Demand from commercial agribusinesses has likely reduced, both due to the impacts of COVID-19 measures on these businesses and in response to increased prices. We expect to see a decrease in demand for agricultural inputs from non-commercial farmers in 2020 Season B, both because many households are facing reduced incomes and because we expect the price elasticity of inputs to be high for these farmers. Again, the full impact on demand for inputs in the medium-term will depend on how long the various restrictions last. It is also likely that we will see an increase in counterfeit inputs on the market for 2020 Season B, as the disruptions in the supply chain create opportunities for unscrupulous actors.

### Methodology

The USAID/Uganda Feed the Future Market System Monitoring team is conducting a Rapid System Assessment of the agricultural market system in Uganda. This report is based on consultations with a few key stakeholders and our team's existing knowledge of the agricultural market system, combined with publicly available data and news reports. This information has been layered onto the Uganda Agricultural Market System Map, created by our team and available to view on the Kumu platform at <https://kumu.io/MSM/usaids-uganda-fff-msm-activity-covid-19-map#full-map/shock-status>. The system map allows us to identify how the



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shock is propagated through the system, where we anticipate the shock will have an effect, and through what mechanism this effect will occur.

- For a guide to interpreting the system maps in this document, please consult <https://humanitarian.mit.edu/rapid-system-assessment-methodology-kumu-example/>.
- For more on our Rapid System Assessment methodology, please visit <https://humanitarian.mit.edu/rapid-system-assessment-methodology>.
- Please contact our team at [msm.uganda@mit.edu](mailto:msm.uganda@mit.edu) with any questions or feedback.

### Agricultural Input Importers and Manufacturers

Broadly, the availability of inputs at the wholesale level is expected to decrease in the short-term, and wholesale input prices are expected to increase. These effects may persist over the next six months, depending on how the situation evolves.

#### Significant delays in cross-border shipping impacts profitability

Although the border has remained open to freight, [significant delays](#) have occurred due to COVID-19 [testing procedures](#) implemented at the border, putting strain on transport providers and increasing the cost of overland transportation. This creates uncertainties and delays downstream in the supply chain, increasing costs both for importers and for manufacturers who rely on imported raw materials. The [stigma faced by truckers](#) for being perceived as bringing COVID into Uganda has also affected the availability of transportation and therefore imports, though the medium-term impact is still uncertain.

#### Currency depreciation increases costs

The Ugandan shilling has depreciated against the dollar, compared to 2019, which may make imports more expensive, depending on the source of the inputs.

#### COVID-19 restrictions increase costs

An [EPRC study](#) released in early May found that almost 92% of businesses had seen an increase in operating expenses due to the preventative measures put in place by the government. The restrictions on movement and the closure of public transport have limited employees' ability to travel to the office, and may have limited seed companies' ability to travel to their farms and conduct quality checks. Some businesses may have also put in place their own preventative measures and/or changed some of their business practices, which also increase short-term operating costs. We hope to further explore this particular impact on input importers and manufacturers in a future update.

#### Importers may react to uncertainty by increasing liquidity and reducing imports

Some importers, particularly in the grain and oilseeds sector, have [reportedly](#) responded to the crisis by reducing import volumes and cutting back on offering credit to customers, as a way to shore up liquidity in the face of uncertain demand and the uncertainty surrounding the COVID-19 measures.

#### Wholesale input prices likely increased in the short-term, with medium-term impact uncertain

It is likely that wholesale input prices will increase in the short-term, given the increased import and transportation costs faced by importers, as well as the possibility of reduced imports to maintain liquidity. The

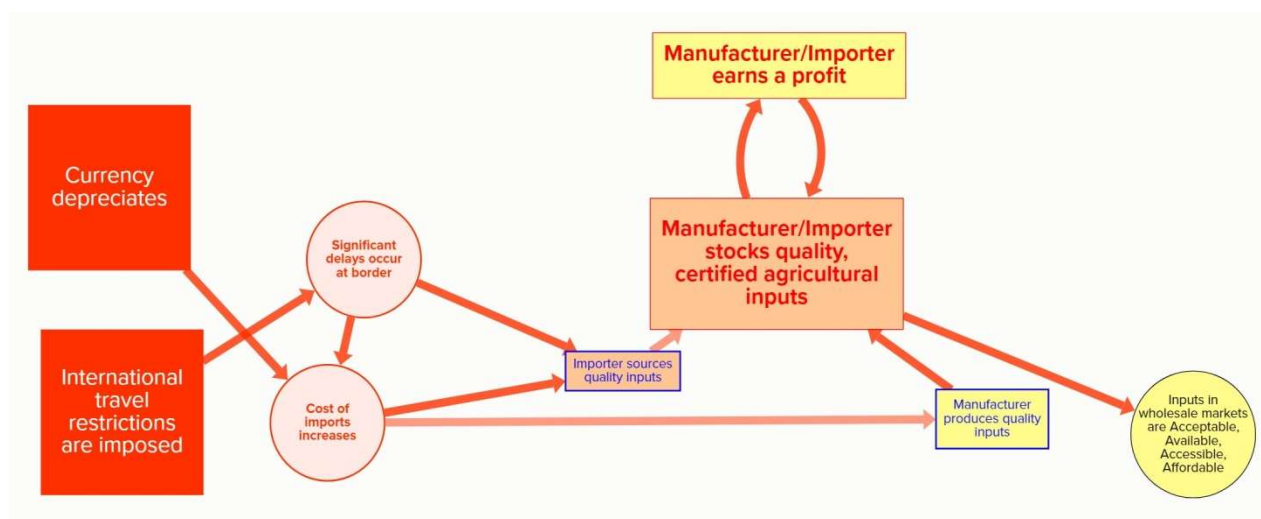


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restrictions on movement and other measures put in place by the government have also impacted the ability of these businesses to operate and increased their operating costs, which may be passed on to their customers or may further impact their liquidity. It is possible that there may be bankruptcies or business failures in this sector over the next few months.

### Visualizing using the system map

Several of the impacts of the COVID-19 measures on agricultural input importers and manufacturers can be seen in the diagram below. This excerpt from our system map shows how two of the shocks to the system, restrictions on international travel and currency depreciation, travel along a pathway to negatively impact both supply availability and the profitability of the businesses.



### Agricultural Input Distributors and Retailers

The availability of inputs at the retail level is also expected to decrease in the short-term, and retail input prices are expected to increase. These effects may persist over the next six months, depending on how the situation evolves, and particularly in response to demand signals from farmers at the beginning of 2020 Season B.

#### Internal travel restrictions limit input distribution, particularly at the last mile

Under the movement restrictions, and particularly while public transportation was shut down, distributors have had difficulty reaching input retailers, such as agrodealers, as well as difficulty [accessing farmers](#). Inputs make it to market centers (with delays), but cannot be taken the last mile to farmers, and many farmers and agribusinesses have been unable to access input retailers. [The study published by EPRC in early May](#) found that 90% of agriculture firms had seen a reduction in access to inputs, with 52% citing moderately reduced access, 14% citing severely reduced access, and 24% reporting no access at all, though the report does not specify which types of inputs were considered.

#### Distributors and retailers will likely face higher wholesale prices

As discussed above, the impact on importers and manufacturers will likely lead to supply delays, reduced supply, and higher wholesale input prices, which will have a downstream impact on distributors and retailers.

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### COVID-19 restrictions increase costs

Distributors and retailers are likely also seeing increased operating costs due to both the preventative measures implemented by the government. Some of these businesses may have put in place preventative measures as well, and/or changed some of their business practices, which also increase short-term operating costs. We hope to better understand this particular impact on input importers and manufacturers by the next update.

### Transport costs increased

We are hearing anecdotal reports that transport costs within the country have increased as well. This is likely due to the initial uncertainty around which vehicles qualified as cargo transport, and delays around securing movement permits, as well as general delays and cost increases caused by the closures of businesses and public transportation. Transport providers may also be raising prices to compensate for lost income, or given the continued risk associated with transporting goods.

### Credit to small and medium agricultural businesses is reduced

The EPRC survey also [reported](#) that many small-to-medium sized firms were having difficulty accessing credit, which limits their ability to absorb a shock to their business, such as increased operating costs, increased wholesale prices, or reduced sales. Of the agriculture firms surveyed, 45% reported no impact on their access to credit, with 24% stating their access was moderately reduced and 31% reporting that it was severely reduced. Across all types of businesses, SMEs saw a greater reduction in access to credit than large firms, and businesses in the eastern and western regions overwhelmingly reported that their access to credit had been reduced.

### Retail input prices likely increased in the short-term, with medium-term impact uncertain

Overall, we would expect to see increased retail input prices in the short-term, as distributors and retailers cope with increased costs and potentially reduced sales. In the same EPRC [study](#) mentioned above, 24% of agriculture firms reported moderately higher input prices, and 26% cited no change in input prices, while 43% reported that the price of inputs had decreased. It appears that the firms that experienced decreased prices are almost entirely in the eastern region, closest to the Kenyan border where the majority of imported inputs enter the country. We will be exploring this phenomenon further, to understand how retail prices of inputs have changed across the country.

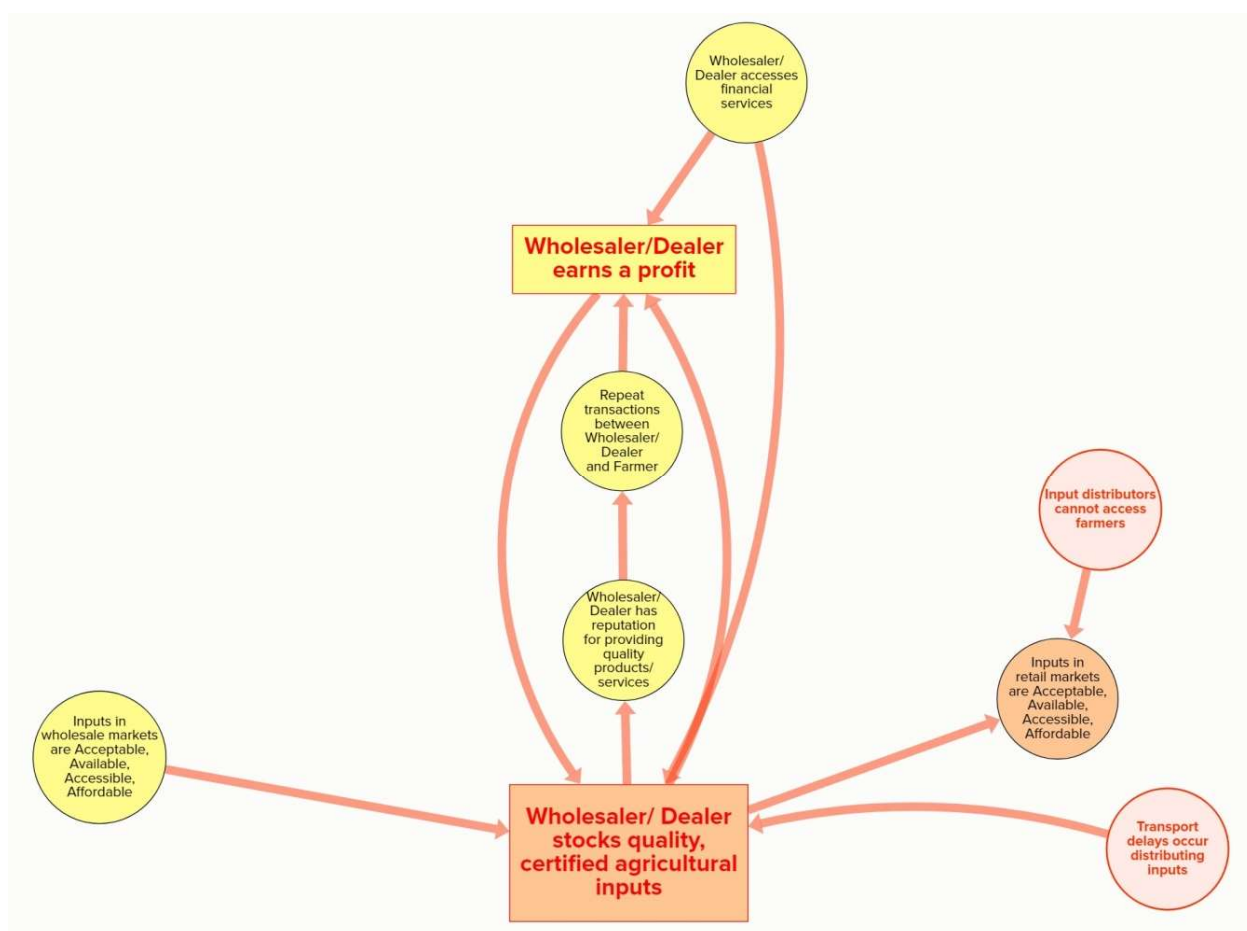
As with importers and manufacturers, the restrictions on movement and other measures put in place by the government have also impacted the ability of distributors and retailers to operate and increased their operating costs, which may be passed on to their customers. It is also possible that there will be bankruptcies or business failures in this sector over the next few months. Some small businesses may also expand their product or service offerings, to compensate for lost business, high costs, or overall uncertainty. Small businesses were hard-hit by the measures imposed by the government, particularly the closure of non-essential businesses (though this excluded many agricultural businesses) and the restrictions on movement. Across all sectors, more than half of Ugandan SMEs expected to close within 3 months if the initial restrictions had persisted, and [43% of agricultural businesses](#) expected to close within 6 months under lockdown conditions.



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## Visualizing using the system map

Several of the impacts of the COVID-19 measures on agricultural input distributors and retailers can be seen in the diagram below. This excerpt from our system map shows how restrictions on movement and transport delays combine with reduced availability of wholesale inputs to negatively impact both retail supply availability and the profitability of the businesses. In particular, we can see how the impact of the shocks on importers and manufacturers, and therefore on wholesale input availability, will travel through the system to negatively impact businesses further down the supply chain. (Wholesale input availability appears on the right hand side of the previous diagram, and at left in this diagram.)



## Input Demand and Prevalence of Counterfeits

The impact of the COVID-19 preventative measures on input demand is less certain, given that most inputs are purchased in the period immediately preceding each season. As such, the full impact on input demand will not be clear until August and September, when inputs will be purchased for 2020 Season B. However, we expect to see a reduction in demand for agricultural inputs. There is also a risk of greater prevalence of counterfeit products on the market over the short-to-medium term.



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### Demand for agricultural inputs will likely reduce

Demand from commercial agribusinesses is likely reduced. Most rely on imported inputs, and purchase inputs more regularly throughout the year. However, many are also linked to international markets, and have likely experienced both a decrease in demand and an increase in transportation costs, with [floriculture](#) a notable example.

The majority of smallholder farmers in Uganda do not purchase agricultural inputs. Demand from those that do usually purchase inputs will likely be reduced if input prices are increased, as we expect to see high price elasticity of demand. Many farm households have experienced an income shock as a result of the COVID-19 measures, as many rely on non-farm sources of income that were significantly impacted by business closures and restrictions on movement. A report released by BRAC found that, even as late as early June, 96% of surveyed households were reporting an impact on their regular sources of income, with 29% of respondents reporting that their regular source of income had completely stopped. This will further depress demand for agricultural inputs, as farmers' ability to afford inputs will be reduced.

Farmers' likelihood of using purchasing inputs on credit has also been reduced, as savings groups cannot operate while movement is restricted, and households will likely use available credit to address other short-term expenditure concerns. We would also expect farm households to display higher risk aversion in the coming season, given the general uncertainty, and to cut back on inputs such as fertilizer and improved seed, which are seen by many as non-essential expenses.

Input dealers are likely already anticipating the possibility of reduced demand. In the [EPRC survey](#) from early May, agriculture firms cited their ability to pay their costs as their primary concern (27.4%), with reduced product demand a close second (25.4%). However, it will be difficult to estimate the true impact on demand until closer to August, particularly depending on the duration of the COVID-19 measures and the impact on input prices.

### Counterfeit inputs may become more prevalent

Due to the disruptions to the inputs supply chain, and the expected increase in input prices, it is likely that more counterfeit products will enter the market, to take advantage of consumers who are uninformed and looking for lower prices. This may be exacerbated by the government's decreased ability to enforce regulations. Government budgets will be greatly reduced due to [sharply falling tax revenues](#). This will hinder the government's ability to effectively provide an array of services, despite some external assistance, and the inspection of imported imports may be impacted. This could be a major issue at the border, where resources are being diverted to COVID testing. This will also likely impact the inspection and certification of domestically manufactured inputs, particularly seeds.

### Visualizing using the system map

The anticipated impact on demand for inputs from smallholder households can be seen in the diagram below. This excerpt from our system map shows how reduced farmer income leads to reduced demand for agricultural inputs, which is further compounded by reduced access to financial services. The diagram also shows how the use of agricultural inputs impacts farmer income, through both quality and yield, suggesting that there will be a negative feedback loop for some households who choose not to use inputs in 2020 Season B and see their income reduced as a result – an impact that these households likely can anticipate, however, and will have factored into their decision.



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