The impact of fertilizer prices on maize and soybean production

July 2022

Welcome to the monthly food price tracker. This is an initiative of the African Market Observatory (AMO) of the Centre for Competition, Regulation and Economic Development, at the University of Johannesburg, and its partners. It summarises key trends in prices in East and Southern Africa (ESA) for selected staple food products, focusing on highlighted areas. Please also see the previous trackers.

In this issue of the price tracker, we focus on the effect of increasing fertilizer prices on maize and soybean production in the region.

Key developments:

- East African maize prices increased further, with massive margins over low prices which remain low in producing areas.
- Soybean prices decreased significantly in Zambia in July.
- World prices are moderating, including fertilizer prices, as shipments start from Ukraine.
- The African Development Fund has authorized a US$14.4 million loan to strengthen food security in Zambia.
- World Health Organisation launched a US$123.7 million fund in response to the food crisis in the Horn of Africa and USAID has pledged US$255 million to aid drought-stricken Kenya.
- South Africa has suspended dumping duties on poultry imports, for at least a year, due to rising food prices.
- The president of Tanzania is set to launch a fertilizer subsidy program in August for smallholder farmers.
- The number of people who do not have enough food increased to 62.6 million and 18.5 million in East and Southern Africa, respectively, in June 2022.

Fertilizer prices

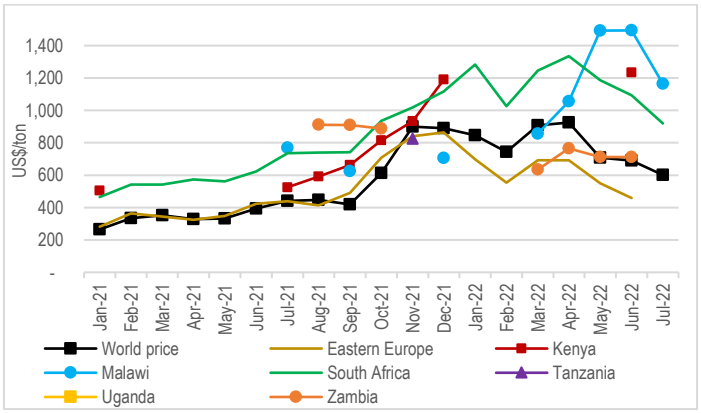
High fertilizer prices have a direct impact on the record-high food prices that have sparked a global crisis that will see millions more people fall into severe poverty, increased hunger and malnutrition. People in low- and middle-income countries bear the harshest burden of soaring food prices as they spend a larger portion of their incomes on food than people in high-income countries.

In 2021, fertilizer prices increased sharply, particularly between September and November, when world prices more than doubled from US$420/t to US$890/t, largely due to high natural gas prices. Natural gas is an important input for nitrogen-based fertilizer and lower ammonia production and higher ammonia prices led to the rise in nitrogen and phosphate fertilizer prices. This presented challenges for farmers in the region as there was limited fertilizer availability as well as huge variation between crop prices and fertilizer prices, exposing the vulnerabilities of the agro-input sector in Africa. The 2021 fertilizer price hike is estimated to have contributed around a 30% increase in food prices.

The rise in fertilizer prices was magnified by Russia's invasion of Ukraine given the importance of these countries to global supply. Further increases in March 2022 came at a time when planting major crops that are essential to global supplies was in progress all over the world. 16% of the world's urea exports and 12% of DAP and MAP come from Russia, while Russia and Belarus account for two-fifths of the world's MOP exports. The supply concerns were exacerbated by China's fertilizer export bans, which were set to be lifted in June 2022, to ensure adequate domestic supply.

In 2022, fertilizer prices have been at their highest levels since the 2008 global food crisis, even while in July, fertilizer prices dropped somewhat with world prices decreasing from US$690/t to US$600/t (Figure 1). Fertilizer prices in the region also dropped, with Malawi's fertilizer price decreasing by 22% month-on-month from June. Notwithstanding the recent reductions, the overall high fertilizer prices contribute to the pressures of inflation and global food security concerns. Lower fertilizer usage will continue to impact food production and mean sustained higher food prices.

Figure 1. Urea prices



Source: World price is from the World Bank. Eastern Europe & South Africa prices are from Grain SA. Kenya and Uganda are from AfricaFertilizer. Malawi, Tanzania and Zambia are from AfricaFertilizer and from POKET app users.

Data from the Kenyan National Bureau of Statistics (KNBS) showed that Kenya's imports of chemical fertilizers in the first three months of the year reduced by 64% to 91 442 tonnes. Together with the drought, this means a greater production shortfall of maize, even after the long rains harvest. The high import price of maize underpins the high price of maize flour retailing at US$2.10/kg.

In South Africa, crop estimates for the 2021/22 crop season indicate that farmers responded to the high fertilizer prices by planting less maize and more soybean (as soybean requires less fertilizer). Although South African production of maize fell by 6% over the previous year it still has a large surplus over local demand and thus has the capacity to export maize to countries in the region that have shortfalls. Soybean production increased by 13%.

Similarly, Zambia's maize production in the 2021/2022 crop season declined by almost 25% to 2.7 million tons. This drop in production has been attributed to a reduction in the area planted and lower yields given high fertilizer prices relative to maize prices. Zambia remains food secure due to its carryover stocks of 1.5 million tons. Due to the surplus from the previous harvest, Zambia has been named the sole exporter of GMO-free maize in region following the shortages of maize in other countries in the region. Soybean production, on the other hand, will see an annual increase of about 16% to 475,353 tons, which is the highest level ever recorded in Zambia and underpins exports.

Zambian agricultural production has the potential to mitigate the impacts of the drought in East Africa. However, regional maize and soybean trade is not working well for Zambian producers and East African buyers, with large differences between the low prices

received by farmers in Zambia compared to those paid by buyers in Kenya.

Gro Intelligence's modelling predicts decreased agricultural production and worsening food security as a result of the reduction in fertilizer consumption arising from supply disruptions, high fertilizer prices and the broader impacts of the Russia-Ukraine war on global trade and energy markets. However, the impact of reduced fertilizer application is not distributed equally across countries and production in some parts of the world will be affected more than others. For instance, in Kenya, the decrease in fertilizer use could potentially decrease crop production between 2.32% and 6.22%.

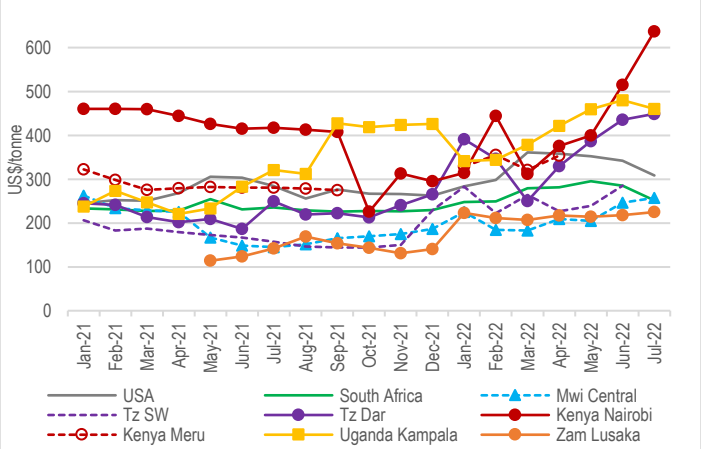
The African Development Bank approved a total of US$93.7 million between Tanzania and Kenya to raise food production, with US$73.5million for a program aiming to expand Tanzania's food production by a million tonnes in 3 years. The AfDB also approved US$20.2million to raise food production in Malawi.

Along with the AfDB, countries in the region are taking remedial steps in response to the soaring fertilizer prices. Tanzania is set to launch a fertilizer subsidy program in August. The government has committed itself to providing US$64 million in 2022/23, equivalent to 31%[1] of all fertilizer imports in Tanzania in 2021, as a fertilizer subsidy to smallholder farmer. In Kenya, the government has launched a fertilizer subsidy program and has since released $47.7million, equivalent to 13%[2] of all fertilizer imports in Kenya in 2021. In total the Kenya fertilizer subsidies will be $108.9million, including the AfDB grant of US$61.2million, equivalent to 31% of the 2021 fertilizer imports.

Maize prices

Maize prices continued to increase across the region in July. In Kenya, prices have soared to over US$630/t (Figure 2), with some reported prices above $700/t. This can be attributed to the poor harvest from the drought. Prices in Tanzania also increased, to US$450/t in July in Dar es Salaam. The huge margins between East Africa and Zambia, Malawi and South Africa, continued to increase.

Figure 2. Maize prices, ESA and international



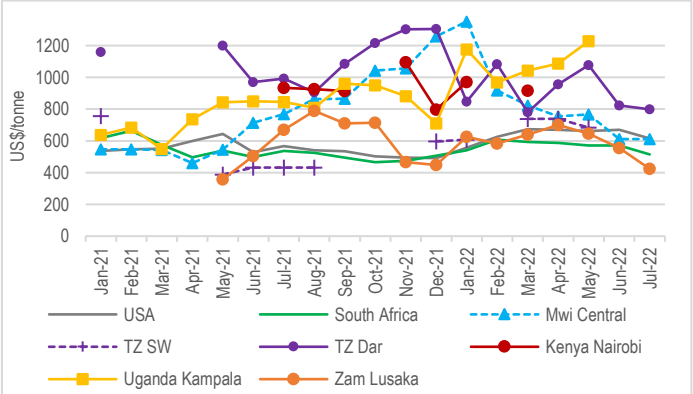
Source: based on price tracker data from multiple sources; South Africa is SA Futures Exchange price; USA is fob prices from SAGIS.

Prices in Zambia and Malawi in July were around US$225/t and US$257/t, respectively, in line with the South African price. The margins between this and the deficit regions in East Africa points to the need for competitive cross-border markets and efficient transport and logistics services which is key to unlocking sustainable agricultural growth in Africa.

Soybean prices

Prices decreased to around US$420/t in Zambia and have remained unchanged month-to-month in Malawi at just above US$610/t. The low prices in Zambia point to traders offering low prices for the large harvest and farmers' inability to access very high-priced export markets. Dar es Salaam prices have also declined and now sit at US$800/t, a slight change from June 2022.

Figure 3. Soybean prices, ESA and international



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Market Observatory App

For crowd-sourcing data, we use a Market Observatory App which is available for download on the Google play store (POKET, only available on android devices), please contact gnsomba@uj.ac.za or +27 65 9965936 for the relevant country code.

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[1] AMO calculations using fertilizer import data from Trade Map

[2] AMO calculations using fertilizer import data from Trade Map