



Experiences and Policy Responses in Kenya to Price Shocks Stemming from the Russia-Ukraine War and Other Global Crises

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Lilian Kirimi, John Olwande, Jackson Langat, Nicholas Odhiambo, and Hillary Bii

1. Introduction

African countries are exposed to various shocks emanating from the global crisis of food, fuel, and fertilizer (3Fs) prices and availability, which itself has been triggered by the Covid-19 pandemic, the Russia-Ukraine war, and drought. The first Covid-19 case in Kenya was confirmed on 12th March 2020, and the government instituted several policy measures to reduce the spread of the virus. The Kenyan economy has been greatly affected by the Russia-Ukraine war primarily because of trade relations between Kenya and the two countries in conflict. Kenya's exports to Ukraine and Russia mainly consist of tea, coffee, cut flowers and vegetables, while it imports wheat, oil, iron, steel, and fertilisers from the two countries. The arid and semi-arid lands (ASAL) of Kenya have endured three severe droughts in the last decade (2010-2011, 2016-2017 and 2020-2022). The drought of 2020-2022 was identified as the most severe and longest, with widespread livelihood losses and massive population displacement (ASAL Humanitarian Network 2022).

When such shocks occur, a country's responses and policies can have deleterious or advantageous impacts on its citizens and may also affect those in other countries through shifts in supply. In light of this, the Africa Network of Agricultural Policy Research Institutes (ANAPRI) and its member institutes sought to perform country-level analyses of the short- and

Key Messages

1. Following three major shocks (the Covid-19 pandemic, the Russia-Ukraine war, and drought), the Government of Kenya put in place various policies to address the increased prices of food, fertilizer, and fuel.
2. Between 2021 and 2022, maize prices increased by 23% due to high global fertilizer prices, as well as a spike in global oil prices which raised domestic transportation costs.
3. Subsidies have been a common short-term response to price shocks, and these are effective in mitigating against high commodity prices. However, they entail a large fiscal outlay and are difficult to sustain for long.
4. Addressing price hikes requires a mix of tools and strategies. Policymakers should consider a range of measures from immediate, short-term responses to medium-term and more long-term structural changes to deal with inherent and recurring challenges.



medium-term impacts of the global crisis on the availability and prices of the 3Fs. The objectives of this study were to:

- i. Assess the prices and availability of the 3Fs for the period before and after the three crises namely the Russian war on Ukraine, the Covid-19 pandemic and drought.
- ii. Characterize government policy responses to the shocks and explain any patterns observed.
- iii. Derive country specific and Africa-wide policy implications regarding responses to global shocks.

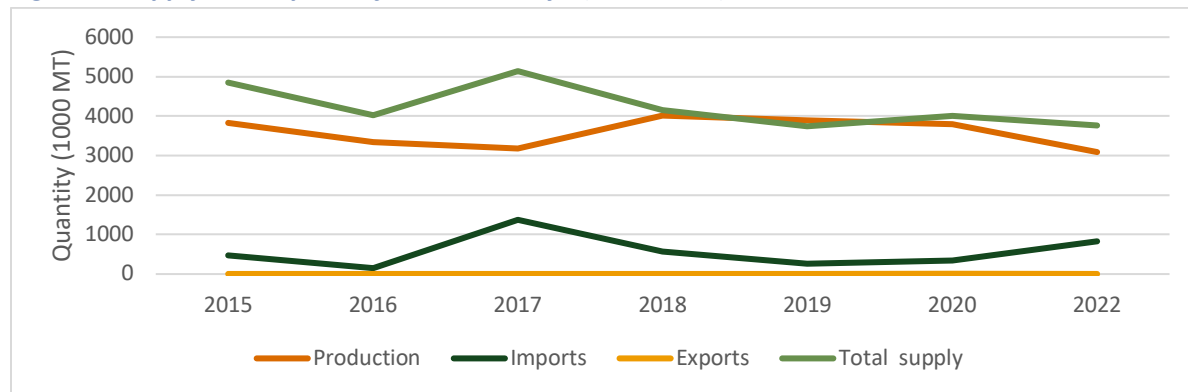
2. Data and Methods

The study focused on three commodity categories namely: food (maize, wheat, rice, Irish potato, cooking oil); fertilizer (DAP, CAN, Urea); and fuel (petrol, diesel). A mixed methods approach was applied and involved a review of the literature, secondary data collation and analysis, key informant interviews and focus group discussions with public officials and private sector players in the commodity value chains. Time series data on quantities and prices of the 3Fs was obtained from the Kenya Economic Survey (2008 to 2022); National Cereals and Produce Board Weekly Market Prices Survey Reports (2022 & 2023); Kenya Agricultural Market Information System; Ministry of Agriculture and Livestock Development database; AfricaFertilizer.org; Economic Review of Agriculture (2015, 2013, 2011); and the Energy and Petroleum Regulatory Authority (EPRA).

3. Prices and Availability of Key Foods, 2015–2023

Domestic maize production plays a vital role in maize supply in Kenya (Figure 1), and it accounted for over 85% of the total maize supply between 2015 and 2022. However, its production declined between 2015 and 2017 then increased in 2018, and thereafter has been on the decline. The production decreased by 23 percent from 4008 thousand tonnes in 2020 to 3090 thousand tonnes in 2022, mainly due to unfavourable weather conditions. Kenya’s maize imports during this period more than doubled to 831 thousand metric tonnes.

Figure 1: Supply and exports of maize in Kenya (2015-2022)



Source: Kenya Economic Survey (various years)

Note: Total supply refers to production + imports – exports – stock changes. Thus, total supply equals domestic utilization.

Maize prices have been on an upward trend over the period 2001 to 2022, with a steeper rise between 2016 and 2022. The sharpest rise in retail price of maize (by 43%) occurred between 2016 and 2018 and between 2019 and 2022, periods when maize production was severely affected by depressed rainfall, effects of the Covid-19 pandemic and a locust invasion. Between 2021 and 2022, maize prices increased



by 23% due to high global fertilizer and food prices. Mather et al. (2022) noted that domestic food prices in Kenya rose more rapidly in 2022 due to a further spike in global oil prices and their influence on domestic transportation costs, as well as reduced cross-border imports of food—especially maize—from Uganda and Tanzania, which were insufficient to stabilize prices. For instance, the inflation-adjusted price of maize increased by 42% from January through August 2022.

For wheat, domestic production showed a modest increase between 2015 and 2022, though its level in 2022 was below the prior four years due to drought conditions (USDA, 2023), and most wheat consumed in Kenya over this period was imported. Prices of wheat grain and flour showed a general increase between 2001 and 2022. The sharp increase in prices from 2020 is attributed to global supply chain disruptions due to the pandemic and the effects of the Russia-Ukraine war. Olwande et al. (2022) reported that between January 2021 and January 2022, the inflation-adjusted, national-level retail price of wheat flour increased by 9%. A steeper price increase of 24% was observed for the period January to June 2022. Kenya’s worsening exchange rate kept wheat prices high, which likely prompted Kenyans to shift to other food staples such as rice, potatoes and bananas.

Rice has become an increasingly important cereal in Kenya; however, nearly 90% of rice is imported. Domestic production rose slowly between 2017 and 2022, though it is expected to increase from 2023 following the commissioning of the Thiba dam in October 2022 (USDA, 2023). In the meantime, rice imports were expected to increase in 2023 due to the temporary removal of import duties for 600,000 MT effective February 2023 for rice arriving in the country before August 6, 2023. Kenya imports most of its rice from outside the East African Community (EAC), largely from Pakistan and India. Rice prices have consistently increased during the period 2001–2023, with the steepest rise observed between 2021 and 2023. Although the objective of the reduction of the import tariff on non-EAC rice imports was to ease rising food staple prices, rice prices still increased in 2023 due to a combination of growing demand for rice (USDA, 2023) and the increase in global rice prices following India’s ban on exports from July 20, 2023.

Irish potato is the second most important staple food after maize in Kenya, and by 2015, it was grown by approximately 800,000 farmers (Njagi et al., 2018). Total supply coincides with domestic production and, hence, imports and exports are negligible. Production of potato increased steadily between 2016 and 2019 and then consistently declined due to drought conditions, erratic supply of quality seed and high fertilizer prices. The price of Irish potato has been on an upward trend since 2001, with the retail price escalating in 2019, after which it dropped by nearly 40% in 2020. However, since 2020, both retail and wholesale prices consistently increased, and prices in 2023 surpassed those in 2019. This is due to the overall decline in production against increased demand as Kenyans shifted from the more expensive maize to less expensive food staples including potato and rice.

Kenya largely depends on cooking oil imports from Indonesia and Malaysia, which were affected by supply chain disruptions following the Covid-19 pandemic. The price of cooking oil has been increasing over the last two decades and has increased more rapidly since 2021 due to a shortage of dollars to finance imports, enforcement of various taxes, and the disruption in global supply chains caused by the Covid-19 pandemic and the war in Ukraine.

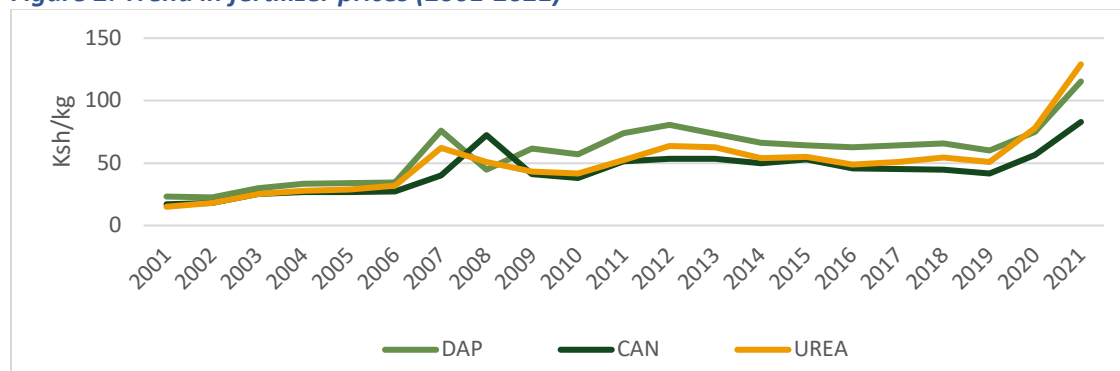
4. Prices and Availability of Fertilizers, 2015–2023

Kenya relies on imports for nearly all its fertilizer needs, and imports are sourced mainly from USA and Saudi Arabia (DAP), Russia and Ukraine (Urea), and Ukraine and Norway (CAN). Only the single super phosphate (SSP) fertilizer is manufactured in Kenya, and only four companies in the country are



undertaking fertilizer blending (Kiriimi et al, 2023). Fertilizer consumption and imports began to increase from 2018/19, but they declined in subsequent years due to Covid-19-related disruptions in supply logistics. Imports in the first quarter of 2022 were much lower than in the first quarter of 2021, indicating that the effects of the Russia-Ukraine war might have already started to set in. Large fertilizer importing countries that faced a shortfall from Russia and Belarus were able to secure supplies from alternative sources such as Brazil. However, this was not the case for smaller countries such as Kenya (Hebebrand and Glauber, 2023). The rise in prices of the three major fertilizers in Kenya preceded the Covid-19 pandemic (Figure 2), but further increases were observed following the pandemic and the Russia-Ukraine war. The retail prices of the two most commonly used fertilizers in Kenya— diammonium phosphate (DAP) and CAN (calcium ammonium nitrate)—fell slightly in 2020 but increased by 76% and 102% in 2021, respectively, then by another 10% and 56%, respectively, from January to July 2022 (Mather et al., 2022).

Figure 2: Trend in fertilizer prices (2001-2021)



Source: *Economic Review of Agriculture (2013, 2015)*

5. Assessment of Policy Responses

Following the three major shocks, the Government of Kenya put in place several policies to address the reduced availability of, and increased prices of, the 3Fs (Table 1).

Following the arrival of the Covid-19 pandemic, the government established various committees under the National Coordination Committee on Response to the Coronavirus Pandemic and rolled out an eight-point Economic Stimulus Programme (ESP) in May 2020 to cushion citizens and businesses, protect livelihoods, and stimulate the economy. The government implemented a range of fiscal measures in the context of the Tax Amendment Act 2020 and Finance Act 2020 that included the removal of PAYE (Pay As You Earn) for those earning Ksh 24,000 and below; the reduction of corporate and personal income tax rates from 30 to 25 percent; the reduction of the Value-Added Tax (VAT) rate from 16 to 14 percent; and the reduction of the turnover rate from 3 to 1 percent. There was an extension of these reduced rates for VAT until 1st July 2021, and for PAYE and corporate tax until 1st January 2021.

Fertilizer-related policy responses

The biggest driver of domestic fertilizer prices is global fertilizer prices, and subsidies are the main policy intervention used to address the increased fertilizer prices. Notably, the country has a long history with subsidies. In 2019/2020, the e-voucher program was rolled out to replace the national fertilizer subsidy program, which was discontinued in 2018/2019. In the e-voucher program, the farmer pays 60% of the fertilizer cost while the government pays 40% to the agro-dealers. The program was further scaled up in 2021/2022 by expanding its geographical coverage and the number of farmers reached. It is currently



being implemented in 37 out of the 47 counties. Additionally, in response to the global fertilizer crisis, the government initiated a special Emergency Subsidy Program in 2022 which was universal and parallel to the e-voucher program. At this time, fertilizer prices had hit a record Ksh 6,000 per 50 kg bag, which partly led to an all-time high maize price of Ksh 6,500 per 90 kg bag. The subsidized fertilizer price was set at Ksh 3,500 per 50 kg bag and was later reduced to Ksh 2,500 per 50 kg bag in the 2023 short rains season.

Table 1: Policies in response to shocks in the availability and prices of the 3Fs

| Global crisis | Policies, Plans and Programs | Timeline | | | | |
|---------------------------|--|----------|------|------|------|------|
| | | 2019 | 2020 | 2021 | 2022 | 2023 |
| Covid-19 pandemic | Eight-point Economic Stimulus Programme | | | | | |
| | Tax Amendment Act 2020 and Finance Act 2020 and the Public Finance Management Regulations (2020) | | | | | |
| Drought, high input costs | Fertilizer Subsidy | | | | | |
| | The Fertilizers and Animal Food Stuffs (Fertilizers) Regulations, 2022 | | | | | |
| | National Drought Emergency Fund (NDEF) | | | | | |
| | Promotion of drought-tolerant crops | | | | | |
| | Water conservation (National Water Policy) | | | | | |
| | Irrigation systems (The irrigation (general) regulations, 2020) | | | | | |
| | Social protection programmes: Hunger Safety Net Program (HSNP) II HSNP III | | | | | |
| | Early warning systems | | | | | |
| | Food aid/emergency relief | | | | | |
| | Livestock insurance and market linkages | | | | | |
| Russia-Ukraine War | Fertilizer subsidy 2023 | | | | | |
| | Finance Act, 2022 | | | | | |
| Rise in fuel prices | Petroleum subsidy program | | | | | |
| | Petroleum pump stabilization mechanism | | | | | |

Food- and consumption-related policy responses

A raft of measures was adopted to deal with high commodity prices. These included a reduction in maize flour prices via a government subsidy to millers, effective Monday, July 18, 2022; continuation of the social protection programs (National Safety Net Programme (NSNP) and Hunger Safety Net Programme (HSNP)) and release of funds previously committed under these programs so that the pandemic would not impact the timely delivery of benefits; tax relief through reduction in the VAT, turnover tax, PAYE, and corporation tax rate; implementation of the National Hygiene Program (NHP), dubbed Kazi Mtaani, a national initiative that was designed to cushion the most vulnerable but able-bodied citizens living in informal settlements from the effects of the Covid-19 pandemic; exemption of lockdown rules on vehicles engaged in the transportation of food items (including produce) and agricultural inputs; food distribution programs to vulnerable populations; cash transfers under the general economic stimulus to provide financial assistance to vulnerable and low-income households affected by the pandemic; and, distribution of relief food and livestock fodder during droughts. In addition, the government encouraged



the use of digital platforms and mobile money services for farmers, consumers and citizens in general, to access information, financial services, cash transfers and markets, and to pay for goods and services. Through the Public Finance Management Regulations (2020), the government set up a Ksh 3 billion stabilization facility to enable banks to extend credit to micro, small and medium-sized enterprises to support recovery from Covid-19 impacts.

Fuel-related policy responses

Petroleum pump prices have been regulated by EPRA since December 2020, in line with the current Petroleum (Pricing) Regulations of 2022 (which succeeded the Energy (Petroleum Pricing) Regulations, 2010). The purpose of the Regulations is to cap the retail prices of petroleum products, and so EPRA sets maximum pump prices every 14th day of the month for different cities and towns in Kenya.

In April 2021, the government introduced a petroleum subsidy program (also known as a stabilization fund) in response to high international oil prices arising from greater global demand in the post-Covid-19 recovery period. The subsidy for petrol was in effect until September 2022, while that for diesel and kerosene ran up to May 2023. In July 2023, the government reintroduced petroleum pump stabilization due to a spike in international oil prices. Since then, the government has been using a pump price stabilization process to address escalations in fuel prices in monthly pricing cycles. This involves compensating the oil marketing companies for the under recovery of costs from the Petroleum Development Levy (PDL) in line with the PDL, Order of 2020 (EPRA, 2023). The local fuel pump prices are largely influenced by international crude oil prices, the weaker Kenyan shilling and the 16% VAT on fuel (in line with the provisions of the Finance Act 2023).

6. Conclusion

Dealing with price hikes emanating from the three shocks has been an arduous task for the Kenyan government. This is because of the emergency nature of the Covid-19 pandemic and the need to implement diverse and evolving interventions as information on the virus became available. Besides, the country was experiencing other challenges such as a general economic decline, prolonged drought, depreciating currency, and a locust invasion. As expected, the government put in place a series of interventions to address the effects of the pandemic that were co-funded by the private sector and the donor community. These were effective in containing the spread of the virus, cushioning citizens and businesses, protecting livelihoods and stimulating the economy. The limitation in human interactions as a containment measure accelerated digitalization where this was already taking place, especially in e-commerce (Capital FM Kenya, 2021).

Subsidies were a common short-term response (for maize flour, fertilizer and fuel) and were effective in mitigating against the high commodity prices. However, as they were not targeted, they have a huge fiscal outlay and are difficult to sustain for long. Also, fertilizer subsidies have resulted only in marginal increases in yield. Hence, there is a need to rethink these subsidies with a view to integrating complementary measures or policies such as consideration of soil health and support its management by farmers as a complement to the subsidy. Medium- to long-term measures such as improving productivity and development of value chains for drought-tolerant products and indigenous vegetables will better ensure a reasonable harvest and reduce overreliance on maize. Further, the government needs to be more proactive and move with urgency to develop policies and put resources into strategies that reduce dependence on food/feed imports. One example is the “Flour Blending Initiative”, through which it was expected that, beginning November 2023, 10% of miller’s daily production would be blended flour (Mwangi, 2023), which can reduce maize and wheat imports (and the overall food import





bill) and the country's over-dependence on maize. Production of sorghum, cassava, amaranth and sweet potatoes for blending is also consistent with and contributes to climate-smart agriculture.

Overall, responses to the price hikes showed that there is no silver bullet for managing price shocks. Addressing price hikes requires a mix of tools and strategies, and so policymakers should consider a range of measures from immediate, short-term responses to medium-term and more long-term structural changes to deal with inherent and recurring challenges.

References

- ASAL Humanitarian Network. 2022. "Drought situation in the Kenya ASAL areas now at crisis level." October 5. Accessed at: <https://reliefweb.int/report/kenya/drought-situation-kenya-asal-areas-now-crisis-level>.
- Capital FM Kenya. 2021. "Covid-19 accelerates digital explosion in Kenya." November 16. Accessed at: <https://www.capitalfm.co.ke/business/2021/11/covid-19-accelerates-digital-explosion-in-kenya/>
- Energy Regulatory Commission of Kenya (EPRA). 2023. Press release on petroleum pump price stabilization. December 11. Accessed at: <https://www.epra.go.ke/press-release-on-petroleum-pump-price-stabilization-11-12-2023/>
- Kirimi, L. J. Olwande, J. Langat, T. Njagi, M. Kamau, and G. Obare. 2023. The role of agricultural Inputs in the food system transformation, in Breisinger, C., M. Keenan, J. Mbutia, and J. Njuki (eds.) *Food Systems Transformation in Kenya: Lessons from the Past and Policy Options for the Future*. Washington, DC: International Food Policy Research Institute (IFPRI). <https://doi.org/10.2499/9780896294561>
- Hebebrand, C., and J. Glauber. 2023. "The Russia-Ukraine war after a year: Impacts on fertilizer production, prices, and trade flows." March 9. Accessed at: <https://www.ifpri.org/blog/russia-ukraine-war-after-year-impacts-fertilizer-production-prices-and-trade-flows>
- Mather, D., J. Olwande, and J. Ricker-Gilbert. 2022. Policy options for supporting household food security and resilience in the context of high food, fertilizer, and fuel prices in Kenya. Policy Note No. 1. Support for Applied Research and Analysis in Kenya and East Africa Region.
- Mwangi, B. 2023. "Blended flour to hit the shelves in November." September 3. Accessed at: <https://nation.africa/kenya/business/seeds-of-gold/blended-flour-to-hit-the-shelves-in-november-4356058>
- Njagi, T., L. Kirimi, E. Kinyumu, and H. Bii. 2018. Cost of Production for Irish Potatoes for the 2018 Main-Cropping Season in Kenya. Policy Brief No. 33. Nairobi: Tegemeo Institute of Agricultural Policy and Development.
- Olwande, J., T. Njagi, M. Ayieko, M.K. Maredia, and D. Tschirley. 2022. Economic burden of COVID-19 continues as Kenya enters the twelfth month into the pandemic. Feed the Future Innovation Lab for Food Security Policy, Research, Capacity, and Influence. Policy Brief No. 6. East Lansing: Michigan State University.
- USDA. 2023. Grain and Feed Annual, Nairobi, Kenya. March 2023.



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