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Price Shocks and Associated Policy Responses Stemming from the Russia-Ukraine War and Other Global Crises: Evidence from Ghana, Kenya, Nigeria, Senegal, Tanzania, and Zimbabwe

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1. Introduction

Recent years have brought a deluge of shocks to agrifood systems, particularly for low- and middle-income countries. The Covid-19 pandemic starting in early 2020 brought a global economic slowdown and supply chain disruptions, and various measures to curb the spread of the virus by limiting mobility and public congregation upended the functioning of food markets. Then, in early 2022, the Russia-Ukraine War set off startling global price spikes in fuel, fertilizer, and food as key supplies of fertilizer, wheat, and edible oil were cut off from their markets, and upheaval in the petroleum market followed from international responses to Russia's actions. The result has been a widespread cost-of-living crisis that is especially felt in lower income settings. At the same time, manifestations of climate change are becoming increasingly evident, with more frequent weather extremes and catastrophic climate events affecting cycles of agricultural production. As but one example, from 2020 to 2023, the Horn of Africa experienced its longest and most severe drought on record.

Key Messages

1. Recent years have brought a deluge of shocks to agrifood systems, particularly for low- and middle-income countries.
2. Across the six countries in this study, prices for key foods (maize flour, rice, wheat, and vegetable oil), fuels, and fertilizers dramatically increased, particularly since 2022.
3. In their response to these shocks, countries exhibit an intensifying emphasis on self-sufficiency in food and fertilizer.
4. While recent shocks have triggered some trade realignment, they evidently have not stimulated increased within-Africa (intra-regional) trade.
5. Spending or revenue measures in response to price shocks are popular but tend to be financially unsustainable. More attention should be allocated to proactive measures aimed at making national economies more productive and resilient to future stress.

In response to recent shocks in prices and availability of fuel, fertilizer, and foods (the "3Fs"), governments worldwide have pursued both reactive and proactive measures aimed at softening the impact of various shocks and making their economies more resilient to future stress. For example, in response to soaring costs of fertilizer and food, African governments have alternately reduced tariffs on increasingly expensive imports, incentivized the substitution of locally produced commodities for imports, and invested in increased domestic production of the products most affected by recent international turmoil.

The "Shocks and Policy Responses" project explores the nature of recent price shocks in the 3Fs along with policy responses undertaken in six African countries, namely Ghana, Kenya, Nigeria, Senegal, Tanzania, and Zimbabwe. These countries represent diverse agro-ecologies and positions along the trajectory of agrifood systems transformation. The objectives of the study are (1) to assess how prices have changed in these six countries for fertilizer, fuel, and key foods; (2) to characterize policy responses to recent global shocks and explain any cross-country patterns observed; and (3) to consider how these patterns in policy responses are alternately encouraging or a cause for concern.

2. Prices and Availability of Key Foods, Fuels, and Fertilizers

Data on prices and availability of the 3Fs since 2019 were obtained from relevant ministries in each participating country, using the most up-to-date and detailed information available as of the time of writing. Our results confirm that prices for maize flour shot up across all six countries. By 2022, the price in Senegal was 48% higher than it had been in 2019 in nominal terms. In Kenya, the price of maize in 2022 was 106% higher. By 2023, the price of maize was 71% higher in Tanzania, 123% higher in Nigeria, and a shocking 310% higher in Ghana. For Zimbabwe, which experienced hyperinflation during this period, the price of maize flour in 2023 was 131 times the price in 2019. In general, the greatest price jumps seem to have occurred in 2022 and 2023, suggesting that it was the delayed (not immediate) impact of the Covid-19 pandemic and especially the arrival of the Russia-Ukraine war that induced these price increases.

For rice, we see relative price stability in most countries through 2021, after which prices began to rise. Prices rose most slowly in Senegal (where they were nominally 32% higher in 2023 than they had been in 2019) and Kenya (33%), and they rose most dramatically in Ghana (175%) and Nigeria (190%). For Zimbabwe, the price of rice in 2023 was 75.5 times the price in 2019. The global market for wheat has been particularly impacted by the Russia-Ukraine war, given the prominent role of Russia and (to a lesser extent) Ukraine as wheat exporters. Between 2019 and 2023, wheat prices rose 19% in Senegal, 53% in Nigeria, and 58% in Tanzania. In Zimbabwe, the price of wheat in 2023 was 146 times the price in 2019. As for vegetable oil, the price had risen by 23% and 28% in Tanzania and Senegal, respectively, between 2019 and 2022. In Nigeria, where vegetable oil prices were available for 2023, the price had risen by 150% over four years, and in Zimbabwe, the price in 2023 was 105 times the price seen in 2019.

Prices for urea, a common inorganic fertilizer, escalated dramatically in all countries. The price of urea rose relatively more slowly in Kenya and Tanzania, where it was 51% and 67% higher in 2023 (in nominal terms) than it had been in 2019. This value was 101% in Senegal, 191% in Nigeria, and 450% in Ghana. In Zimbabwe, the price of urea in 2023 was 72 times the price in 2019. The high price of fertilizer would logically lead farmers to turn to substitutes, such as organic fertilizer, or apply fewer inputs to their crops. This is worrisome if it leads to lower agricultural production, which would place further pressure on food prices.

As for petrol, prices in Senegal were fairly stable, rising by only 14% between 2019 and 2022. The price of petrol rose faster in Kenya, where it was 42% more expensive in 2022 than it had been in 2019. Tanzania seems to have been able to control the price, which remained elevated but did not rise further between 2022 and 2023. However, in Nigeria, the price of petrol skyrocketed in 2023 to reach a value 138% higher than it had been in 2019. This is because the Government of Nigeria repealed a fuel subsidy in 2023, which caused prices to surge from their subsidized baseline. As a result of hyperinflation, the price of fuel in Zimbabwe in 2023 was 110 times what it had been in 2019.

3. Assessment of Policy Responses

In each country, we completed a desk review to identify policies most relevant in the national response to recent shocks, and we conducted semi-structured interviews with policy makers and other key stakeholders (e.g., private sector leaders) to understand their experiences with, and perspectives on, policy responses to recent and ongoing shocks. In total, 104 interviews were conducted across the six countries. To our knowledge, this is the first study to synthesize the full breadth of policy responses to multiple recent crises and the first to incorporate qualitative data on policy responses to account for policy makers' perspectives. The content of the interviews was analyzed to draw out themes and identify areas of convergence and divergence in how these countries have so far responded to shocks. The most prominent themes are discussed below.

First, countries exhibit an intensifying emphasis since 2020 on self-sufficiency in food and fertilizer. While a desire for national self-sufficiency has always been common among policy makers, our interviews indicate that this has deepened in recent years in the countries examined. In terms of food self-sufficiency, the Ghana Covid-19 Alleviation and Revitalization Enterprise Support (CARES) Obaatanpa Programme aims to accelerate competitive import substitution for rice, poultry, cassava, sugar, and tomatoes. In 2023, the Government of Senegal launched a multi-sectoral program for food sovereignty. The Government of Tanzania responded to price shocks in wheat by introducing new wheat production areas and requiring wheat companies to source wheat domestically before importing. The Government of Zimbabwe similarly implemented a Wheat Input Support Program, which capacitated Zimbabwean farmers to produce enough wheat to meet national demand by 2022.

In terms of fertilizer self-sufficiency, the National Fertilizer Council in Ghana expedited discussions on establishment of a local fertilizer manufacturing plant. The Nigerian Government launched a comprehensive fertilizer intervention program focused on revitalizing domestic fertilizer production and reducing import dependency. In Zimbabwe, the Five-Year Fertilizer Import Substitution Roadmap (2020-2024) aimed to increase local production of phosphates and ammonium nitrate to reduce fertilizer imports, and a new fertilizer blending plant which uses phosphate from Dorowa Mine is expected to enable Zimbabwe to meet half the current national demand for basal fertilizer. As for Tanzania, the government is fast-tracking investment in urea production using gas from offshore deposits.

Second, though new subsidies and reductions of existing tariffs are a readily available policy response, the fiscal burden can be quite high. Among many examples of subsidies, in Ghana, the Coronavirus Alleviation Programme (CAP) included (among other features) three months of free water and sanitation for households and a three-month subsidy for electricity. The Government of Kenya responded to the energy price crisis by introducing a petrol and diesel subsidy for fiscal year 2021/22. The Government also responded to high flour prices by offering a short-term maize flour subsidy in mid-2022 and scaling up the fertilizer subsidy program in 2021/2022. In Zimbabwe, the Government's Pfumvudza/Intwasa

conservation farming program from 2020 to 2021 distributed agricultural inputs, including seed and fertilizer, to 1.8 million smallholder farmers.

Governments also utilize reductions in tariffs, duties, and taxes to alleviate price shocks. Among many examples, the Government of Tanzania reduced excise duties on gasoline, diesel, and kerosene; granted a duty remission of 10% rather than 35% on imported wheat grain; removed import duties for rice; lowered customs duties for cooking oil; and set aside the VAT for double refined edible oil from locally grown seeds by local manufacturers. Nevertheless, across multiple countries, key informants noted that developing countries can only forego revenues or offer expenditure-based assistance for a limited time. Notably, these tools are generally not sustainable for the full duration of current-day crises which seem to arrive in succession. In both Senegal and Nigeria, subsidies on diesel have been rolled back in an effort to manage government spending and direct assistance in a more targeted manner.

Third, country responses to shocks sometimes lack coherence, with some policies essentially offsetting the others' impacts. In Senegal, for example, even as the government introduced various policies and programs to cushion the impact of global shocks, it responded to pressure from technical and financial partners to raise the regulated price of fuel. Along the same lines, Tanzania recently increased the fuel tax for diesel and petrol by 100 TZS/liter. Given the centrality of fuel costs in many industries and value chains, this was understood to worsen the cost-of-living crisis in the country. In Kenya, food prices have remained high despite implementation of a scaled-up fertilizer subsidy and a good harvest in 2023. This is evidently because fuel prices (which are strongly correlated with food prices) have dramatically increased due to exchange rate fluctuations as well as tax reform, with fuel subsidies removed and higher taxes introduced. There are various reasons a country may opt to remove a market-distorting subsidy, including pressure from external partners, a need to limit government expenditures, or a desire to redistribute benefits to different subpopulations. However, the perception of policy incoherence seems to be problematic.

Fourth, while recent shocks have triggered some trade realignment, they evidently have not stimulated increased within-Africa (intra-regional) trade. Across the six countries of this study, we heard of some instances of trade realignment. When Nigeria's source of potash was abruptly cut off in 2022, the country was able to pivot in its trade relations to access potash from Canada. In 2022, Nigeria also signed a Memorandum of Understanding with Poland to enhance food and energy security, thereby strengthening this trade relationship. In Kenya, the introduction of Covid-19-associated lockdown measures by trading partners had a positive effect on exports but a negative effect on imports. For a time, it seems lockdown policies reshuffled existing trade patterns. However, although the African Continental Free Trade Area (AfCFTA) aims to create a barrier-free trade zone among members with the removal of tariffs and the harmonization of trade rules, across the countries in this study, shocks that disrupted global supply chains did not prompt an increase in within-Africa (intra-regional) trade. Overall, it does not seem the AfCFTA has played a role in how countries responded to these shocks.

Fifth, countries exhibit an increasing appreciation for organic fertilizer and increasingly recognize climate change and associated environmental stress when thinking about fertilizer policy. While far greater resources are directed toward promoting inorganic fertilizer use, countries now appear more likely to be interested in pairing this with organic fertilizer promotion. In Ghana, the "Green Ghana" project advocates for the complementary use of both imported inorganic fertilizers and locally produced organic fertilizer, and through the Planting for Food and Jobs (PFJ) initiative, the government has encouraged fertilizer companies to also venture into manufacturing organic fertilizers. Along the same lines, in 2021,

the Government of Senegal included organic fertilizers among the set of subsidized fertilizers, and in 2023, Kenya published a soil acidity and liming handbook.

Some policy responses also address climate change in progressively sophisticated ways. In Nigeria, the Climate Change Act of 2021 established a legal framework for sustainable agriculture and resilience to climate change. This Act provides a framework for mainstreaming climate change actions, sets up a system of carbon budgeting, and establishes the National Council on Climate Change. In Zimbabwe, the Presidential Input Scheme, which was launched in 2020, sets an expectation that beneficiaries will adopt Conservation Agriculture Principles (CAP) as a climate change adaptation strategy. In Ghana, which experienced a major drought in 2021, the National Climate Change Policy and the National Drought Management Plan both aim to improve water management, promote sustainable farming practices, and help farmers cope with drought.

4. Conclusion

Altogether, these results underscore a need for more (and more thoughtful) discourse on the proper balance between national self-sufficiency and participation in international trade. More attention might be given to the potential role of within-Africa (intra-regional) trade and regional (not national) value chains to promote continental self-sufficiency and thereby ameliorate economic vulnerability to shocks. It does not seem that countries currently view this as a viable response to global shocks, which suggests a need to understand why intra-regional trade is not viewed more favorably and whether relevant obstacles and bottlenecks can be addressed.

In addition, many of the policy responses noted in this study have been reactive and have especially taken the form of spending or revenue measures. Such approaches tend to be financially unsustainable for resource-constrained countries over the protracted duration and compounding nature of present-day crises. It follows that more attention ought to be allocated to proactive measures aimed at making national economies more productive and resilient to future shocks.

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