Food Insecurity in the Greater Horn of Africa:

Climate, Fuel, and Fertilizer Drivers

1. The communique from the last Ministerial acknowledged the role climate change plays in extreme weather events, including droughts, and how that exacerbates food insecurity. It also noted that an anticipated 49 million people in the Greater Horn of Africa (GHOA) would be vulnerable by September 2022. It called for urgent national and regional responses providing technical and financial assistance for both emergency and medium-term programs aimed at boosting resilience, food security, trade, and market ecosystems in the GHOA.

2. This note seeks to provide the update on the current food security crisis and its drivers, including expanded discussion on the impact of the global fuel and fertilizer crisis.[1]

Food Insecurity is Still Increasing

3. At the last Ministerial meeting, the GHOA had faced three failed rainy seasons and a fourth was likely. The fourth rainy season did fail, and a fifth failed rainy season is likely. Up to 45 million people in the Horn of Africa continue to experience increased acute food insecurity (IPC3+) and that number will rise in the coming months as La Nina continues into a third year based on current predictions. When we refer to IPC3+, this is the Integrated Phase Classification system, which while not perfect, is perhaps the most rigorous measure of food insecurity. The IPC system has five stages based on agreed criteria, and at IPC3, households do not have sufficient food (calorie) intake, their livelihood assets and strategies are depleting rapidly (e.g., selling livestock for food and water), and deaths from hunger are beginning to occur although they are still less than one person per 10,000 population. These conditions deteriorate through IPC4 until IPC5 (famine) where on average, two or more people per 10,000 population die daily from hunger. Famine is predicted for a few areas in the GHOA this year. As households move up through the IPC phases, they lose livelihood assets, perhaps their home, and even members of their families, the recovery from the current crisis will take time. Households will start rebuilding from less than zero.

4. To give some perspective to the current situation, the Humanitarian Snapshot for the Greater Horn of Africa in October 2019, just before this series of shocks, including COVID-19, the desert locust upsurge hit, conflict and the fuel and fertilizer crisis, showed 23.6 million people experiencing acute food insecurity. This is roughly equivalent to the number of highly food

[1] The World Bank Vice Presidents for Western and Central Africa, Ousmane Diagana, and Eastern & Southern Africa, Victoria Kwakwa, are hosting an invitation-only session with African Ministers of Finance and representatives from the fertilizer industry to raise awareness of how the fertilizer market is impacting food security and steps to improve resilience against price shocks in the future. The event will be held on October 11, 2022, at the World Bank headquarters.

insecure people projected to be in just the 3 drought affected countries (Ethiopia, Kenya, and Somalia) by February 2023. The 2019 number also indicates food security persisted it the GHOA before the latest series shocks. While shocks are increasing—e.g., moving from one every 12.5 years to every 2.5 years–systemic issues have created chronic food insecurity that leave production systems vulnerable.

Drivers of Food Insecurity

5. A complex set of drivers of food insecurity are impacting the GHOA. Some are more systemic, contributing to chronic food insecurity and generally making the system more vulnerable to shocks. Others are extreme events that trigger crises like the current situation.

Chronic Drivers

6. **Policies**. The agriculture policies in many countries are not transforming the food system. For example, the increasing share of expenditures on input subsidies crowds out more productive public investments in research and technology transfer that could make farmers more efficient. Trade restrictions remain pervasive for outputs and inputs, which drives down the incentives for farmers and other value chain participants to invest in increasing their productivity. According to the African Union Biennial Review, only 4 of 49 member states are on track to achieve the goals of the Malabo Declaration on Accelerated Agricultural Growth by 2025. There is a large policy reform agenda to attend to.

7. **Zoonoses and pests.** As the climate has changed, the frequency and intensity of disease and pest outbreaks has increased, and while impacts are often localized with a few notable exceptions, the damage caused can be significant. For example, while the desert locust upsurge grabbed headlines due to the immense scope of the invasion, three other transboundary pests—quelea bird, African Armyworm, and Fall Armyworm—have infested parts of the GHOA, sometimes inflicting 100 percent losses on producers. The system needs a preventive management approach to all major pest threats with a focus on surveillance and early intervention so that curative management, which often entails vehicle mounted or aerial spraying of pesticides, can be avoided. Preventive management is also vastly more economical than curative management. In West Africa, according to analysis by Agence Française de Développement, the funds spent to end the 2003-2006 desert locust upsurge in the Sahel, would have paid for 170 years of the preventive management approach the countries adopted at the end of that crisis.

8. **Beyond pests, disease impact is significant.** Seventy-five percent of the infectious diseases on the planet originate in animals, domestic or wild, and Eastern Africa, particularly the GHOA with hits domestic and wild animal populations, is among the most pronounced hotspots globally. Africa has suffered over 260 infectious disease epidemics, disasters, and other potential health emergencies between 2016-2018, and in the past two decades successive epidemics have caused the loss of over 227 million years of healthy lives and an annual productivity loss of over USD$800 billion. Given this, the call for an internationally well-coordinated integrated One Health (OH) approach for prevention of and preparedness against health threats is an imperative.

9. **Macroeconomic crises.** Currency depreciation, debt distress, fiscal deficits lower GDP growth and job creation. Public debt has tripled as share of GDP to 78 percent and is crowding out productive and social spending.

10. **Gradual Climate Change**. A major challenge in the planning for climate change is the deep uncertainty about its localized impact and over time. Beyond shocks, subtle changes to the climate threaten ecosystems and people. Small changes to weather patterns gradually erodes the productivity of food systems and cause losses of assets through events too small to attract global or even national attention—examples include delayed rains, localized drought or flooding, pest infestation, animal disease, temperature. The IPCC and the Global Center on Adaptation, urge countries and stakeholders to adopt "no-regret robust solutions" to help manage the uncertainty.

11. **Conflict**. Violent conflict has surged since 2010, with food insecurity both a consequence and a cause of conflict. The nature of conflict spans the gamut from localized cattle raiding and conflict over water and land resources, to protected conflict and war. Even post conflict, the challenge is to establish new norms and rebuild lost assets—e.g., market infrastructure, crop fields, etc.—to benefit from peace.

Acute Drivers

Climate Shocks

12. **Africa depends on complex interconnected climate systems, and three of the most important are the El Niño Southern Oscillation (ENSO), the monsoons, and cyclones.** Each is already affecting the lives and livelihoods of people across Sub-Saharan Africa.[2] The IPCC 6th Assessment Report (AR6) suggests that a 1.5°C increase in the average global temperature within the next decade and 2°C or more by mid-century are largely unavoidable. Even if greenhouse gas emissions are lowered to target goals, Africa's climates will still be more erratic, because so much damage has already been done. The IPCC predicts that most of Africa will become more arid, and much of Africa will become so hot that outdoor work and tourism will be life-threatening for much of the year".

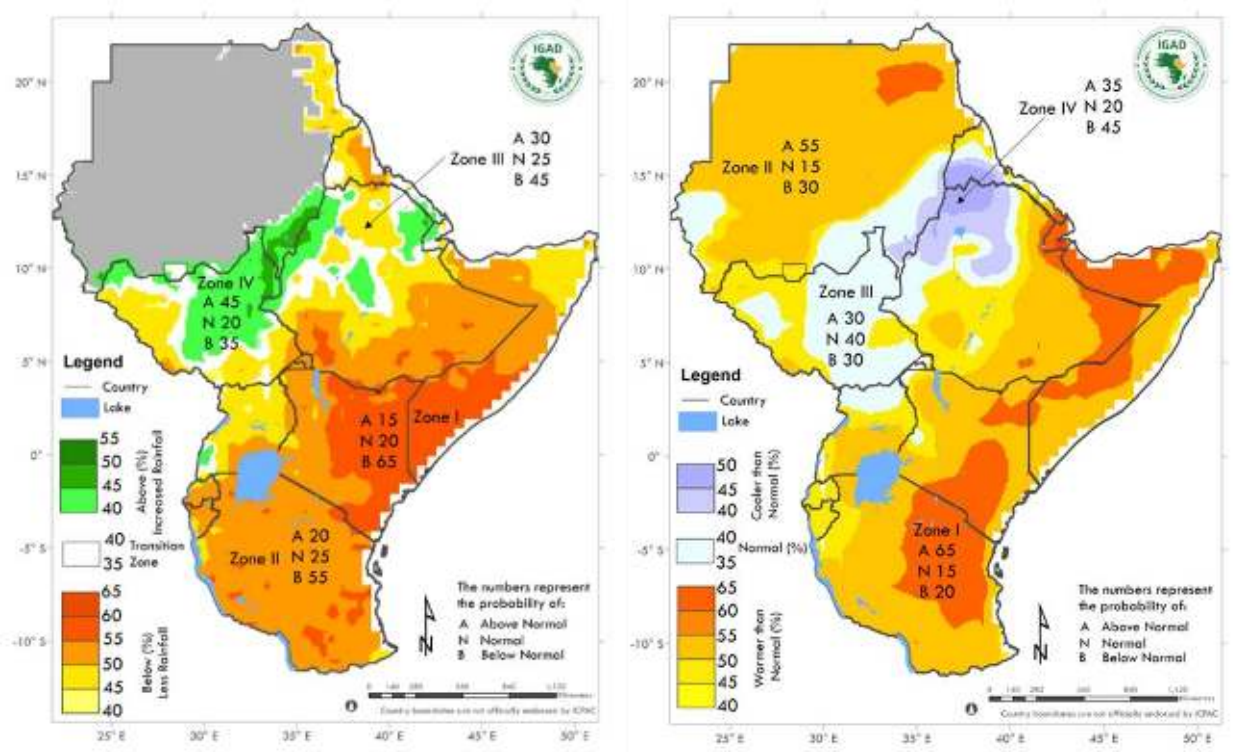
13. **Africa's production systems and infrastructure are particularly vulnerable to climate extremes and the continent has had more than its fair share of disasters, however, fatalities from disasters have been declining.** *In SSA, each flood or drought increases food insecurity by 5-20 percent, and both are likely to increase in intensity and frequency in the future according to the IPC*C. Even shifts in weather norms, like a delayed monsoon or temperature increase, can impact crop and livestock production, and thus producer incomes, food availability and food prices. The IPCC notes that adaptation in SSA is urgent and more challenging than ever. Platforms like the HOAI can facilitate the flows of knowledge about what works and what does not work when it comes to climate adaptation and food security. For example, through the Water for Agro-pastoral Productivity and Resilience Project in Somalia, the Government of Somalia worked with technology and participatory engagement with local communities to construct water

[2] GCA. 2021. State and Trends in Adaptation Report 2021

infrastructure—primarily sand dams—and undertake local development for cropping and pastoral livelihoods. A World Bank team visiting one sand dam at Rabaable in September learned that one rain event was able to provide water to the community for 4-5 months, even during a historic drought. Technological and people-centered solutions need to be scaled up to address the growing climate challenge to the GHOA.

14. **When it comes to climate shocks drought and flood are the leading causes.** From 1991 to 2020, Africa had about 50 reported disasters per year, and floods were two out of three events. Droughts are less numerous but affect an estimated five times the lives and livelihoods of floods, while floods cause greater financial damage (however, more data is needed on damages from climate shocks). Relative to 1970-79, the frequency of natural disasters in 2010-19 has increased 3-fold for droughts, 4-fold for storms, and 10-fold for floods.[3] According to the latest modeling used by IPCC, temperatures are also already higher across Africa, and there is high confidence that critical warming levels will happen earlier than previously projected. The October-November-December forecast maps for the GHOA from ICPAC show the variability of climate conditions showing up simultaneously across the region.

[3] The IPCC notes that "[s]ome of the increase in floods could be due to a changing climate but changing exposure patterns of populations along rivers and coasts and improved reporting almost certainly contribute as well."



Rainfall Forecast October – December 2022

Temperature Forecast October – December 2022

Fuel and Fertilizer Crisis

15. **Africa's worsening food security crisis is at least partially fueled by the twin challenges in the energy and fertilizer markets.** Failure to intervene and mitigate this crisis in the near term could result in food poverty for an additional 30 million Africans beyond the 100 million already experiencing catastrophic levels of food insecurity which could result in further economic dislocation and political upheavals.

16. **AFE is highly exposed to global fertilizer market risks.** The Eastern and Southern Africa (ESA) region accounts for 60 percent of SSA fertilizer consumption, and the top three users are in the GHOA: Ethiopia (55.5% of farmers using fertilizers; 70,000 Mt), Kenya (31.4%; 40,000 Mt) and Sudan (31.4%; 30,000 Mt). Shares in remaining countries of ESA are below 5 percent. After two years of sharp increase, world fertilizer prices have been stabilizing over the summer but remain at extremely high levels. Year-on-year fuel prices increased by 17-75 percent (depending on location) in April 2022—impacting mechanized farming and the transport of food to markets. The steepest increase was observed in Burundi, Somalia, Kenya, Ethiopia, and South Sudan. This has impacted farmers' ability to use farm machinery and transport and will further reduce their ability to grow sufficient crops this year.

17. **Cereal production in ESA could decrease by 16 percent during the 2022 cropping season due to higher fertilizer prices**. Most ESA countries import fertilizers from Kenya or

Tanzania, which import the bulk of their fertilizers from Russia. Sudan and Ethiopia are exceptions as they source about 50 percent of fertilizers from Egypt and Morocco, respectively. While fertilizer prices had been on the rise since 2020 (largely supply chain constraints), the initial price spike (a two-fold within two months of the outbreak of the war in Ukraine), coincided with the 2022 primary season crop planting. There have also been price hikes region-wide, rising fuel prices by 17-75 percent in April 2022 year-on-year. WFP estimates that the cereal production during the 2022 cropping year could potentially decrease by 16 percent year-on-year because of high fertilizer and fuel prices. The total 2022 cereal production will be about 37.8 million MT, down from 45.2 million in 2021. The most significant decline in cereal production is in Ethiopia (21%), Kenya (12%), and Sudan (12%).

18. **Short-term credit facilities through trade financing and guarantees mobilized with the support of international development actors (e.g., IFC) are a critical need.** Manufacturer, trader, and importer financing needs, especially among local players, are a major bottleneck. The financing need for fertilizer buyers has in some cases increased 3-4 x given escalating prices in the past 1-2 years and African fertilizer producers are also seeing fast increasing financing needs to source equipment or raw materials (e.g., natural gas), compounding the general scarcity of local commercial bank financing in many of these markets.

19. **It is best to avoid subsidies because once they are installed, they are very difficult to remove.** However, to address immediate the affordability challenge, targeted short-term subsidies —e.g., direct-to-farmer models such as Zambia's Farmer Input Support Program (e-FISP) and Nigeria's Growth Enhancement Scheme—would align farmer incentives and manage the risks of market distortion and cross border leakage of subsidized fertilizer as high fertilizer prices and cost-

to-value ratios make it disadvantageous/uneconomic for smallholders to buy fertilizer for most staple crops. The gap that some combination of such subsidies and price concessions would need to cover is substantial—e.g., $2.5 billion for SSA as a whole.

20. **The current crisis is compounding medium to long term structural challenges in African fertilizer markets** including opaque and inefficient procurement/tendering processes, delayed government payments and defaults, infrastructure bottlenecks, working capital financing constraints, issues of small/fragmented markets, and a range of policy challenges. The current systems for the procurement of fertilizer need to be made more transparent, to dramatically reduce tender complexity and timelines, and to instill confidence in off takers to help unlock immediate and medium-term market bottlenecks. This requires stronger data sharing to identify stock positions at ports, embrace of simplified procurement processes (e.g., emergency procurement procedures with deadlines of weeks rather months), and support for finance mechanisms that de-risk government-led sales to secure commitments for primary nutrient supplies. Other interventions include:

- Support for high quality and at-scale data systems on fertilizer volumes/prices to improve market transparency and early warning systems, anticipate supply shocks, and improve market planning through the coming period of disruption and volatility.
- Tax adjustments to increase fertilizer availability regionally and reduce distribution costs—e.g., allow fertilizer to be shipped FOB rather than CFR as latter incurs additional taxation.
- Tax incentives and guarantees to promote domestic blending, encourage alliances, and mitigate risks of geopolitics which are likely to persist and grow (i.e., stimulate Africa production and intra Africa trade with Nigeria Urea, Phosphates from Morocco, Potash from Congo, etc.); and
- Embrace longer offtake agreements to mitigate volatility and improve market consistency and certainty, as exemplified in Ethiopia, Nigeria, and Benin, and historical examples from Asia).

21. Potential support from WBG could include

- Financing/procurement of fertilizers through existing projects (restructuring, CERCs, etc.). This could be associated with smart, coordinated subsidy scheme with specific triggers, amounts and guardrails (IDA).
- Short-term credit facilities through trade financing and guarantees – scale/adapt existing credit facility mechanism to be fit for the fertilizer market and respond to the rapidly evolving financing needs.
- Build partnerships with other development partners (AfDB, IFAD, AFD, etc.) to share information and coordinate efforts and alignment on overall funding
- Build industry wide alliances (OCP, Dangote, Yara, etc.) to share information of stock positions in ports and planned/on-going programs4
- Establish early warning system for any future crisis in partnership with regional organizations;

[4] Industries such as OCP are planning to supply fertilizers to selected countries in SSA in the form of grants.

- Support for defining much needed agricultural policy for fertilizer market and reforms to improve transparency and efficiency of government procurement processes, including eliminating perverse tax incentives constraining market development.
- Financial guarantees to cover buyer/government payment risk.
- Promote local investments in fertilizer blending and distribution infrastructure.
- Support the extraction and use of potash deposits available on the continent.
- Train farmers on soil health to increase yields and strengthen agricultural output markets to increase the value to cost ratio of using fertilizers; this would consequently increase fertilizer uptake by farmers.

The Cost of Inaction

22. Financing adaptation to climate change is estimated to cost US$30-50 billion, which is equivalent to 2-3 percent of SSA GDP, each year over the next decade. The cost of inaction is even higher—a 3°C global warming by 2100 (i.e., "business as usual") will bring estimated potential GDP losses of US$2.9 trillion. Agriculture and food systems in SSA need climate adaptation investments of US$15 billion/year. But this is much cheaper than $201 billion/year in disaster relief. Implementing policies to reach the Paris Accord objectives (2°C global warming) would reduce the losses in economic activity by US$962 billion a year in terms of the 2100 GDP.

An Agenda for Action

23. In the Horn of Africa, adaptation is the critical investment need, and the technology, capacity, and policies needed to support adaptation are well-defined and build on solid evidence, including: public policy and regulations, food value chain and livelihood solution, and on-farm and productive landscapes investment, etc. Among these options, the priorities for public sector investment in Africa are fivefold: (a) research and extension; (b) water management; (c) infrastructure; (d) sustainable land management; and (e) climate information services.

24. The Ministerial Meeting will feature a presentation of the HOAI initiatives, including Groundwater for Resilience Project; Build Resilience for Food and Nutrition Security Project (BREFONS); and De-Risking Inclusion and Value-Enhancement of Pastoral Economies Project (DRIVE).[5] This will illustrate how these initiatives are aligned to and contribute to the priority investment areas.

25. In addition, AfDB also has the **African Emergency Food Production Facility (AEFPF),** which focus is designed to respond to the acute food security crisis affecting Sub-Saharan Africa. This is a $1.5 billion facility for the continent, and $226 have already been committed or are in the

[5] Groundwater Resilience project was approved by the World Bank Board in June 2022; BREFONS phase 1 was approved by the AFDB Board in November 2021 and phase 2 was approved in July 2022; DRIVE was approved by the World Bank Board in June 2022.

process of approval to Ethiopia, Kenya, Somalia, South Sudan, and Sudan with another $10.5 million supporting Multinational AEFPF. The facility aims to support African countries through the global food crisis by investing along three pillars: (a) providing quality inputs and extension services and supporting post-harvest management and market development, using ICT where possible; (b) financing the large-scale supply of fertilizers to wholesalers and aggregators to bridge the 2 million metric ton supply gap; and (c) Promoting policy dialogue and reform to address structural factors that are preventing modern inputs from reaching farmers in short and medium term.

26. At the World Bank, the **Food Systems Resilience Program for Eastern & Southern Africa (FSRP)** was approved by the Board of Executive Directors on June 21, 2022.[6] It is designed for participating countries to create investments along the priority areas according to their local context. FSRP is a US$2.3 billion program aims to tackle the underlying structural challenges of food insecurity and increase resilience against climate, conflict, and economic shocks. It is a regional program using a multi-phase programmatic approach that provides participating countries with a menu of activities to build resilient food systems, promote sustainable use of natural resources, enhance access to markets, foster resilience-focused public policies, and improve regional coordination. It can also, by design, engage in short-term emergency response activities, but it is primarily designed to complement emergency response activities and focus on medium-term investments that will help break the cycle of crisis. Phase 1, comprises IDA financing of US$788 million, covers Ethiopia, Madagascar, IGAD and CCARDESA. Additional countries, including Tanzania, Malawi, Mozambique, Comoros, and the African Union Commission, are expected to join later this fiscal year.

Questions for Discussion

27. These guiding questions can be used to start the discussion during the event:

- What do you need now to address the GHOA food security crisis and what successes in your country would you want to share with the rest of the HOAI?
- How do we balance the immediate needs with the longer-term investments?
- What support and collaboration would be most helpful from the HOAI?

[6] World Bank teams have been working with our clients in the GHOA to access the IDA Crisis Response Window Early Response Fund as the food security crisis has deepened. Funds are available for IDA-eligible countries. Thus far, $235 million has been confirmed and $150 million is expected for Djibouti, Ethiopia, Kenya, Somalia, and South Sudan.