

Long-term impact of West African food system responses to COVID-19

The COVID-19 pandemic continues to impact health and livelihoods in West Africa. Exposure of food system fragilities by the pandemic presents the opportunity for regional-specific reforms to deliver healthy diets for all and promote resilience to future shocks.

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Long-term impacts of the COVID-19 pandemic on food systems may well be most heavily felt in low- and middle-income countries with fragile health systems and economies.

Although West Africa has so far been spared the worst of the pandemic in terms of infection rates, severity of disease and mortality¹, the World Bank estimates that in Nigeria alone, the largest economy in the West African region, 5 million people may become impoverished due to COVID-19². Furthermore, the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) estimates that the 51 million people who face food stress are likely to fall into food crisis without adequate income support³.

Government responses to the pandemic have been broadly similar across West African countries⁴. Almost all have implemented curfews, travel restrictions, and some have imposed lockdowns in urban areas — albeit with a gradual easing of restrictions as populations become weary of government-imposed restrictions. Limited attention, however, has been given to the impact these measures have on the ability of governments to ensure safe and timely agricultural production, continue international agricultural trade, and secure access to healthy diets for all people. Previous epidemics in the West African region, such as the 2013–2016 Ebola outbreak, provided evidence of the relative fragility of food systems in the region. In the three countries most affected by the Ebola outbreak — Guinea, Sierra Leone and Liberia — more than 40% of regular farming lands were left uncultivated and the price of cereals such as rice increased by over 30% (ref. ⁵). It is noteworthy that the 2020 climatic conditions in the region are predicted to be atypical, but favourable — above-normal total rainfall, and earlier onset and later cessation of rainfall⁶ — and would in normal circumstances provide

a unique opportunity for a productive harvest.

Food system fragilities

The unfolding COVID-19 pandemic may pose unique challenges for West Africa. The agricultural workforce already has a relatively poor nutritional and health profile, and further pandemic-related ill health could reduce labour productivity during the busy planting and harvest seasons. Rural farming communities typically have little to no savings or food stores and many depend on daily-generated income for food⁷. Interruptions to day-wages and unexpected health expenditures may force households into poverty. The impact of lockdowns, market closures, and potential restrictions on regional and international food trade have likely impacted food prices — rises between 11% and 17% in cereals, especially imported rice are observed in Nigeria, Sierra Leone and Liberia³. These measures have particularly affected pastoralists and nomadic livestock herders, interrupted value chains, and reduced access to seeds and other on-farm labour — the availability of which is based on the agricultural calendars in the region⁸. Furthermore, the likely lengthy delays and significant competition in defining new trade agreements, including the African Continental Free Trade Area Agreement, are projected to put West African food systems under significant additional stress⁹. Of particular concern are supplies of nutritionally important but relatively perishable fresh fruit and vegetables¹⁰. Approximately 7 million school children in West Africa benefit from school feeding programmes¹¹, and for many households, these meals cover an important part of household food supply. School closure due to pandemic restrictions will increase pressure on family food supplies as children do not receive free school meals and parents stay at home for childcare¹². The pressures of the pandemic fall on top of the

existing strains from increased frequency and severity of droughts and extreme heat in West Africa, and in particular the Sahel region. In 2010 and 2012 Sahelian droughts caused widespread crop failure and left many households food insecure in Mauritania, Mali, Chad, Niger and Burkina Faso¹³.

Support for governments

International organizations including the International Monetary Fund, International Fund for Agricultural Development (IFAD), the African Development Bank (ADB) and the World Bank have all made major funding commitments and are supporting governments in the region in the fight against COVID-19. This provides policy context conducive to food system reforms that were unheard of pre-pandemic and are now increasingly important to guard against the potentially devastating impacts of future pandemics and other shocks. We propose a number of policy options to support the resilience and sustainability of West African food systems in the post-COVID-19 era where “surprise is the new normal”¹⁴.

Investments and partnerships. Though many of the commitments from regional and international donors and development partners are aimed at reducing food insecurity and impoverishment in the short term, they offer governments the opportunity to increase investments in agriculture that can co-deliver long-term benefits. The ADB recently announced US\$10 billion in support for African economies to safeguard against food insecurity impacts of the COVID-19 pandemic¹⁵. The programme prioritizes agricultural policies that support the most vulnerable through investments in farm inputs for food production and strengthen the capacity of regional organizations for food security. However, three months after this announcement, it has yet to become

clear whether the substantial budgetary allocation for COVID-19-related food insecurity by the ADB could have negative consequences for other sectors receiving funding from the bank. Furthermore, there may be unforeseen consequences of this increase in funding that in turn could jeopardize future food security for other disadvantaged population groups. IFAD's Rural Poor Stimulus Facility programme aims to mobilize US\$240 million to improve food security by supporting production (inputs and basic assets for crop, livestock and fisheries) and access to markets, by targeting funds for rural financial services, and through the use of digital services for weather and market information delivery¹⁶. While these programmes may have a short-term focus, opportunities exist to achieve longer-term impacts, for example through expansion of input support to include seeds that have a greater resilience in the face of future climate change (climate-smart crops) that farmers could continue to grow after the immediate support period ends. Strengthening public-private partnerships, and the use of innovative funding models¹⁷, may also provide an opportunity to ensure programmatic and financial sustainability. The pandemic has resulted in a rebalancing of funding streams in the development community that may have negative impacts on other sectors; the balance is likely to shift again post-pandemic. Therefore, it is important to re-strategize current food system investments now to ensure that they have a lasting impact.

Innovation. West Africa's abundant supply of sunlight and agriculturally underutilized land (in mostly rural settings) is ripe for development — including rural development opportunities¹⁸ that improve food safety, reduce post-harvest losses and increase food storage to raise productivity for farmers; with appropriate infrastructural planning and mandated safeguards to protect nature. Modern agricultural approaches — including urban farming of vegetables and novel foods including mycoproteins, insects for animal and human consumption and cellular agriculture¹⁹ — are expanding rapidly with the potential for acceptability testing and adoption. Supporting these new approaches may provide multiple benefits including urban and peri-urban food production (with clear employment opportunities for growing urban populations) and strengthen important food supply chains. Peri-urban food production has many potential benefits, including shorter supply chains that may be particularly useful during

infection-control enforcement, income generation possibilities, and opportunities for the greater engagement of women²⁰. Governments should design 'smart' agriculture insurance programmes that can reduce inefficiencies and be cost effective in supporting agricultural investments²¹. The conversion of urban and peri-urban waste into fertilizer²² to support food production (with the potential to reduce environmental pollution in cities and prevent infectious diseases) could be a 'low-regret' option to consider. Despite the many expected benefits of food system expansion, decision-making on how and to what extent to expand production should be based on a full evidence map of potential benefits and trade-offs. While successful urban production can efficiently complement rural production²³, the possibility to reduce the demand of similar products from rural farmers needs consideration. Furthermore, the expansion of agricultural land could bring several environmental risks, including substantial negative impacts on biodiversity and deforestation. West Africa's experience with Ebola virus and its link to agricultural land conversion²⁴ makes it important to plan production to minimize zoonotic spillover and protect the territorial rights of indigenous communities.

Reconfigure trade policies. Border restrictions due to COVID-19, even though food is often exempted, have disrupted food trade flow and the movement of livestock herders in West Africa, especially for informal trade that represents a substantial amount of total trade in the region²⁵. Food trading arrangements need to consider both the financial and environmental costs of food production. International trade is a potent strategy for 'spreading risk', providing a buffer for regions exposed to climate change and severe local disruptions (such as during regionalized outbreaks). However, long supply chains (inter-regional or continental) may become unsustainable during a severe shock when major food supplying countries adopt a protectionist approach to trade, limiting exports to dependent countries. Trade policies should be reconfigured in a balanced approach, dispersed enough to avoid major disruption in supply in cases of localized harvest failure, but also optimized to consider multiple impacts, including on subsidies, taxes and the environment (such as embedded environmental footprints).

Early warning systems. An integrated system that combines existing systems that monitor food prices, crop diseases, weather patterns and other environmental changes

is needed to support efforts already made in the region to improve early warning. Local, national and regional communication could be improved with better, integrated early warning and notification systems — which are even more crucial with border closure measures in place, as the current COVID-19 border closures has made it more difficult to address and mitigate agricultural pests²⁶. A systemic and structurally designed regional early warning system for pests and diseases such as locusts and fall armyworm — through strengthening the capacity of institutions and organizations in the region, such as CILSS and the Economic Community of West African States trade department — will enable systematic and sustainable data collection and analysis for better preparedness. Functional early warning systems can help countries to take early steps to protect lives and livelihoods when a pandemic or other crisis strikes²⁷.

Healthy agricultural workforce. There are clear opportunities to strengthen occupational health in primary care protocols and enhance protection for subsistence farmers from the health effects of climate change, including intense heat and dehydration²⁸. Accelerated access to universal health coverage, particularly for the most vulnerable (women and children), could improve health. One way to ensure quick assessment, and for support during future disruptions, is by using mobile phone technology. The technology has already aided governments and support services to identify vulnerable populations and simplify the administrative barriers to access support services²⁹. Mobile phone technology can be used to deliver personalized agricultural advice to small-scale farmers and vulnerable groups when access or physical contact is restricted, as seen during the COVID-19 pandemic.

Conclusions

These strategies and policies underscore the extent to which the environment, food systems and public health are intimately intertwined, while this linkage will only become stronger under projected climate and environmental change³⁰. Food system policy should consider and carefully map out the possible trade-offs to other parts of the system that would require a coordinated intersectoral government effort.

The COVID-19 pandemic is having a devastating global impact and all sectors of society are considering how to manage the immediate impacts and rebuild in the future. Building back a stronger, resilient and more environmentally conscious food system is critical both to ensure greater preparedness

for future crises, but also to improve the environmental, nutritional and health outcomes of West African food systems in the future. □

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Author contributions

Z.A., R.G. and P.F.D.S. conceived the study. Z.A., R.G., S.M., A.D.D. and P.F.D.S. performed the literature searches and wrote the paper. R.B.Z., A.P., A.H., A.M.P. and A.D.D. interpreted and critically revised the manuscript for important intellectual content. All authors approve of and agree to take responsibility for the final version of this Comment.

Competing interests

The authors declare no competing interests.