



Fostering Pandemic-Era Innovations in Agriculture

By Steve Wiggins

Summary

Measures to control the pandemic have depressed demand for agricultural output and disrupted food supply chains in African countries, with governments turning their attention to the usually neglected farmers. For a sustainable recovery, governments need to invest in the public goods and services that farmers need—roads, schools, health posts, agricultural research, and extension services. Governments should also convene business forums to resolve obstacles in supply chains and to set up “nerve centers” for better intelligence on food chains, as well as to respond to evolving issues and seize emerging opportunities. This essay brings together findings from a Development and Economic Growth Research Programme (DEGRP) synthesis report¹ and wider literature on agricultural innovations in African countries to draw lessons for a high-quality recovery from COVID-19.

Thematic Context

The COVID-19 pandemic has been a shock to farming and the food chains in Africa, as it has been to the rest of the economy. Farmers, traders, processors and retailers have been hurt in numerous ways, including:

- Lower demand for food from urban consumers who have lost incomes when urban economies have been locked down;
- Steep falls in demand in some high-value export markets, such as flowers, when consumers in the Global North have been locked down;
- Restrictions on movement that have made it harder to send produce to market and to bring industrial inputs such as fertilizer from city warehouse to farm;
- Reduced capacity to air freight high-value produce to Europe when passenger services were curtailed; and
- Reduced off-farm work, and thus reduced income, in rural areas as lockdowns and other restrictions have suspended trading, personal, and public services.

On the other hand, some impacts have benefitted farmers. For example, some farm households have had more labor because children have not been at school, and because relatives who have lost their (informal) jobs in the city have come back to the village seeking work. Interruptions to international supply chains, including bans on the exports of rice, have led to more demand for locally grown food.

After the initial shock of the outbreak and the often severe restrictions introduced on movement, exemptions have been granted to agricultural transport, recognizing the importance of maintaining supplies of food to the cities. Traders and processors have found ways to mitigate the impacts of the pandemic, in part by using digital communications in place of physical visits.

Farming and food chains in Africa have evolved to cope with shocks. Drought and floods can ruin harvests, roads can become impassable, police barriers can create unpredictable obstacles to marketing, and so on. Those in the supply chains have long had to be flexible to cope; hence for them the effects of the pandemic have not been so shocking.

Innovation's Contribution

Improvements to agricultural productivity in Africa in the 21st century have been modest. For example, average yield per hectare of cereals rose by 22% between 2000 and 2018 in Sub-Saharan Africa, according to the World Bank. Modest though they may be, improvements have been made for many crops and in many farming systems. Farmers tend to increase their productivity by marginal changes—adopting a better seed variety, planting more high-value crops (vegetables, for example) for sale, buying a crossbred cow, and applying more fertilizer and agrochemicals.² More radical changes can be seen when farmers irrigate, potentially raising yields and allowing crops to be grown in the dry season.

In the past, innovation has been limited by a lack of demand at the farm gate for surplus production, by farmers not being able to access quality inputs, by farmers not having working capital to buy inputs, and by the reluctance of farmers to take the risk of investing in better technology. But things are changing quickly. Urbanization in Africa has created new demand for produce, including the higher-value items that middle-class urban consumers want. In the supply chains, small businesses increasingly offer their smallholder suppliers technical assistance, inputs, and credit to encourage them to grow more—driven by the profits they can make from delivering food to the cities.³

The pandemic has also changed the prospects for innovation. With restrictions on movement, mobile phones have been put to work, enabling traders to order deliveries directly from growers, empowering farmers to consult experts about pests and diseases, and allowing growers to order inputs from dealers and pay for them with mobile money. All have learned the potential of phones and the internet to accelerate agricultural development.

A less direct effect of the pandemic can be seen in policy. Farmers are often taken for granted by both politicians and urban consumers. The latter expect to see food in the markets, corner shops, and supermarkets and do not think too much about how and why everyday food is there. When crises disrupt food supplies, or cause prices to rise significantly, consumers become alarmed. Leaders suddenly pay attention to farmers. They typically deliver additional (subsidized) seed and fertilizer to farmers. Sometimes, and more sustainably, they raise public spending on agricultural research and extension services, on rural roads and services. They may also convene public-private forums for specific supply chains, to discuss how farmers, traders, processors, exporters and government can work together to resolve bottlenecks. In such ways, crises can give new impetus to agricultural development.

Recommendations

- **Governments should support farmers and private businesses, many of them small-scale and informal, in making agricultural supply more effective and flexible.** That support should be through investment in the public goods and services that allow farms and agribusiness firms to go to work—better and well-maintained roads, rural schooling and health, clean rural water, and agricultural research and extensions to generate innovations tailored to local circumstances.

- **Governments need to facilitate greater knowledge sharing among all agricultural stakeholders.** For example, they should convene business forums where all interested parties can see how to alleviate bottlenecks. They may also set up “nerve centers”⁴ — small units of well-qualified analysts where key information on the food supply chains can be collated, analyzed, and communicated rapidly to ministers and business leaders so they can respond to emerging problems and opportunities. These units need to identify where some (limited) public action such as an injection of capital, a temporary subsidy, or regulatory changes can remove obstacles to private sector engagement or catalyze private investment. Such units could also—in alliance with universities, think tanks, and NGOs—learn from the many informal innovations taking place to discover which initiatives are effective, why and how they are effective, and ensure the lessons are shared with others.

Steve Wiggins is Principal Research Fellow in the Climate and Sustainability Programme at ODI, and the Agriculture Technical lead for DEGRP. He is an agricultural economist working on agricultural and rural development for more than 45 years.

About the Series

Policy experts and researchers from the [African Center for Economic Transformation \(ACET\)](#) and the [Development and Economic Growth Research Programme \(DEGRP\)](#), in partnership with [ODI](#), explore the critical role of innovation in Africa’s recovery from COVID-19. Essays identify areas in which innovation can contribute to effective responses and offer high-level policy recommendations.

Endnotes

1. Alex Dorgan, Dominic Glover, and Steve Wiggins, [Agricultural innovation for smallholders in sub-Saharan Africa](#) (DEGRP, 2021).
2. David J. Spielman and Rajul Pandya-Lorch (eds), [Millions Fed: Proven Successes in Agricultural Development](#) (Farm Africa, 2009); Steve Wiggins, et al, [“Cautious commercialisation: Findings from village studies in Ethiopia, Ghana, Kenya, Malawi and Tanzania”](#) (FAC Working Paper 82, Future Agricultures Consortium, March 2014).
3. AGRA, [Feeding Africa’s cities: Opportunities, challenges, and policies for linking African farmers with growing urban food markets](#) (Africa Agriculture Status Report, 2020); Lenis Saweda O. Liverpool-Tasie, et al, [“A scoping review of market links between value chain actors and small-scale producers in developing regions”](#) (Nature Sustainability, October 2020).
4. Gillian Pais, Kartik Jayaram, and Arend van Wamelen, [“Safeguarding Africa’s food systems through and beyond the crisis”](#) (McKinsey & Company, June 5, 2020).

WORKING IN PARTNERSHIP WITH



Research jointly supported by the ESRC and FCDO

