



Climate-Smart Agriculture as a Pathway to Recovery

By John Asafu-Adjaye

Summary

The COVID-19 pandemic has hit African economies very hard and most countries face a slow recovery process. Climate-smart agriculture (CSA) offers an opportunity to speed up economic recovery and put economies back on a sustained growth and transformation trajectory.

Thematic Context

According to the World Health Organization as of August 2021, Africa has only had 2.5% of global confirmed COVID-19 infections and 2.8% of deaths. Yet the pandemic has hit the continent very hard economically. Border closures and travel restrictions have reduced imports, exports, and domestic production, resulting in a decline in economic growth across the continent. Given the recent falls in commodity prices, commodity-dependent economies in particular have been hit exceptionally hard. According to World Bank data, the GDPs of South Africa and Botswana declined by 7% and 8% in 2020, respectively, with Sub-Saharan Africa's GDP as a whole declining by 2.4%.

Looking ahead toward the eventual aftermath of the COVID-19 crisis, agriculture looms large. The sector offers an obvious opportunity to kickstart economic recovery and put African economies back on a path of sustained growth and transformation. This could be done by leveraging technological innovations related to climate-smart agriculture (CSA) to increase the productivity of smallholder farmers and build resilience to climate change.

Innovation's Contribution

CSA involves the use of innovations such as precision agriculture and improved agronomic practices to help optimize the use of farm inputs in order to increase output and lower operating costs. An example of precision agriculture can be found in Pune, India, where farmers in the Nano Ganesh irrigation system use digital applications to allow remote control of irrigation pumps by mobile phone, which saves farmers time, water, and energy.

Digital innovations such as digital agricultural technologies (DATs) can boost the implementation of CSA by providing real-time market and climate data, including cost-effective agricultural advisory services for smallholder farmers. DAT solutions can help farmers and other agriculture value chain actors access finance, pay for goods and services, connect and transact business as buyers and sellers, manage operations and logistics, and make decisions about the future.

Carbon markets, as well as other international carbon emission reduction mechanisms, also present opportunities to accelerate the diffusion of CSA in Africa. Carbon markets allow participants in

cap-and-trade schemes to trade emissions for credits that pay for reductions in greenhouse gas emissions or offset emissions. A company in Europe, for instance, can buy carbon credits from African farmers practicing climate-smart agriculture if the cost of buying the credits is lower than the cost of reducing its own carbon emissions. African farmers currently face several challenges, including limited capacity, in accessing carbon market finance. Addressing these challenges could encourage farmers to undertake CSA.

The African Continental Free Trade Agreement (AfCFTA) also offers several opportunities to scale up the adoption of CSA, particularly through collaboration and information sharing. For example, the AfCFTA can enable countries that share common agro-ecologies to act collectively to achieve greater scale in their investments in research and development on CSA practices. It can enhance the spread of CSA by improving farmers' access to larger input and output markets and by raising the returns to CSA. And it will enable countries with good agricultural potential to have greater access to finance from across the continent and beyond, remedying the pervasive capital market failure in much of Africa's agriculture sector.

Many CSA interventions require upfront infrastructural or technical investments, as African farmers face numerous constraints in CSA adoption, including high initial setup costs and limited access to credit, technology, and technical know-how. Poor access to CSA technology often takes the form of limited physical access to seeds of improved crop varieties. Implementation of some CSA practices demands relatively high levels of technical knowledge, which may be a powerful deterrent to adoption, given that smallholder farmers tend to have low levels of educational attainment and lack access to adequate extension services.

Recommendations

To promote the diffusion and scaling up of CSA across the continent, a number of urgent actions are required. Governments should:

- Strengthen national agricultural research and extension systems and foster regional cooperation among research systems in the production of localized CSA practices.
- Build the requisite infrastructure and ecosystems to support technology and new business models and attract investment into CSA.
- Partner with the private sector in different parts of the agriculture value chain where the business case for CSA practices might initially be weak but where there is potential to create farm-level incentives.
- Address both the supply-side and demand-side barriers to digital technology access.
- Take measures to close the gender gaps in access to resources, technology, and institutions. Addressing these gaps should expand the adoption of CSA practices and increase the returns.

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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.

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