

BYTE BY BYTE

Policy Innovation for Transforming Africa's
Food System with Digital Technologies

SUMMARY

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Commendable progress has been made across many parts of Africa over the past years to increase agricultural productivity, reduce hunger, malnutrition and poverty, create new employment opportunities for young people and improve the livelihoods of rural communities. Yet, demographic change, urbanization, shifting diets and climatic changes mean that pressure is growing on food systems to make more food and more varied and nutritious food available and accessible. Sustaining past progress and responding to emerging pressures requires innovative means of resolving faster and at scale the host of institutional, infrastructural and technological obstacles to future gains in productivity and competitiveness in Africa's food value chains. New digital technologies and services are already having a considerable impact on how food is being produced, processed, marketed, traded and consumed across the continent.

The Malabo Montpellier Panel's report –**Byte by Byte: Policy Innovation for Transforming Africa's Food System with Digital Technologies**– Summarizes the key findings of a systematic analysis of what seven African countries at the forefront of progress on digitalization of the agriculture sector have done right. It analyzes which institutional and policy innovations were implemented and what actions were taken by the private sector and agtech start-ups to increase the development and use of digital tools and services in the agriculture value chain. Several of these can be brought to scale across the continent to help governments meet the targets and goals under the African Union Agenda 2063, the Malabo Declaration on agricultural transformation and the Sustainable Development Goals (SDGs). **The objective of this report is to identify interventions that work and benefit farmers and other actors in the value chain and recommend options for policy and program innovation that allow countries to develop a "digitalization ecosystem" in which digital technologies and services can be developed and used to foster growth and competitiveness in Africa's agriculture value chains.** Efforts need to be supported by governments and the private sector, and crucially, any agriculture digitalization strategy needs to be designed to fit local environments and meet the needs of all value chain actors, while creating new opportunities for Africa's youth and women.

How African countries position themselves to harness and deploy digital technologies will determine the future competitiveness and sustainability of African agriculture and its contribution to African economies. In fact, the so-called Fourth Industrial Revolution can be an opportunity for African countries to leapfrog and lead the way in the application of digital technologies along the agriculture value chain. While some technologies may be out of reach for most value chain actors for now, this is an opportune moment to devise appropriate strategies to equip the next generation of farmers with the right set of digital skills to be able to harness those digital solutions and services still on the horizon.

At its simplest, information and communications technology (ICT) enables farmers to digitize farm operations. Farm management applications can give farmers an overview of their farm processes at the touch of a button and expedite decision-making as a result. At the other end of the scale, more complex technologies and platforms are redefining how stakeholders along the value chain and across public, private and civil society sectors work together to transform the whole sector. For example, the use of the internet of things (IoT) can automate the generation of large amounts of data, in principle reducing the likelihood of mistakes and enabling easier and faster analysis of matters such as land degradation, drought, and infrastructure utilization. Given that Africa has been using innovative technologies to leapfrog economic development in some sectors such as banking, for instance, there is now an opportunity for African governments to champion the Fourth Industrial Revolution in the agriculture sector.

The experience of the seven African countries analyzed in this report can help other African governments develop country-specific strategies to increase resilience and improve livelihoods in Africa's rural communities and beyond. The Malabo Montpellier Panel has identified a set of policies and practices summarized below that, if brought to scale, could significantly improve the resilience and livelihoods of rural communities and spur overall agricultural growth and transformation in Africa.

RECOMMENDATIONS

1. Placing digitalization at the core of national agricultural growth and transformation strategies and policies.
2. Creating a transparent and smart regulatory environment that promotes the development and confident use of digital technologies and services and limits the risks.
3. Expanding university curricula to spur digital innovation and the development of an African agtech sector.
4. Strengthening skill development and digital literacy training for farmers and other actors in the food system as technologically more advanced innovations are being developed.
5. Increasing investment in R&D to develop both frugal and cutting-edge digital solutions that meet the demands of all actors and at each segment of the food value chain.
6. Introducing fiscal incentives to spur digital innovation and to facilitate market entry and the import of technologies until local markets are developed.
7. Investing in supportive and last-mile infrastructure to bridge the digital divide.
8. Developing digital agriculture innovation hubs to create an innovation ecosystem for young people to develop locally suitable technologies and digital solutions.
9. Carrying out evaluation and impact assessments of specific technologies and e-services in rural areas to highlight gaps and opportunities for further skill development and capacity strengthening.