

Precision agriculture is key to meeting Africa's growing demand for food

By [Tony Esmeraldo](#)

23 Jul 2019

The Food and Agriculture Organisation of the United Nations forecasts that the world's population will reach 9.1 billion by 2050 and that global food production will need to grow by 70% to feed that number of people. By this time, the population in Africa will have grown to more than 2 billion, putting the agricultural sector under enormous pressure to accelerate productivity to meet demand.



CloudVisual via [Unsplash](#)

McKinsey, the management consulting firm, says that around 23% of sub-Saharan Africa's GDP comes from agriculture. With more than a quarter of the world's arable land, Africa not only faces the imperative of meeting the demand for food from its own population, but also has the opportunity to unleash economic growth by producing food for the rest of the world.

Yet the issues the agricultural sector in Africa faces are significant. Farming productivity is low compared to many parts of the world, a challenge exacerbated by the ongoing migration of the young from rural areas to the cities. Changing weather patterns, land degradation and short fallow periods are also threatening the sustainability of agriculture in many parts of the continent.



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Against this backdrop, many **farmers are looking to technology** to help them improve productivity and yields. Growing Internet penetration in even some of Africa's remote corners, paired with the falling costs of cloud-based farming applications and drones, intelligent sensors, and other devices are clearing the way for farmers to use digital technology to address some of their most pressing challenges.

Adopting agricultural techniques

As a result of the growing accessibility of technology, we are starting to see commercial farms of all sizes adopt precision agriculture techniques into their processes. Like every other business – from financial services to manufacturing to media – farming is evolving into a high-tech industry, fuelled by the usage of data to make better strategic and operational decisions.

Precision agriculture is about using real-time information to ensure that crops, water, fertiliser, pesticides and soil are managed in a manner that produces the optimal yield while ensuring environmental sustainability. The tools of this trade – satellite imaging, drones, Internet of Things sensors, data analytics – are becoming more accessible to small-scale commercial farmers all the time.

Some examples of how smart technologies can help African farmers to address the challenges they face include:

- Digital breeding systems – including sophisticated drones equipped with a multi-spectral camera, laser sensors, and the ability to deliver three-dimensional photography – can be used by seed producers to scale breeding and develop products. This enables them to deliver genetic information efficiently and effectively for farmers.

- Data about plant growth, development, and condition can be gathered via drones or sensors, and turned into feasible insights. This includes incorporating digital tools in agriculture, from intelligent farm equipment to planting prescriptions to tools that enable an increase in crop yields for farmers.

- Technology can be used to deliver weed and pest control in an optimal fashion.

- Farmers can use hyper-local weather data and soil data to manage fields and crops for maximum yield.

Africa's agricultural sector can only thrive if it becomes more precise, more resilient and more adaptive. This is especially the case in water-stressed and low resource environments in sub-Saharan Africa. Better access to information for smart decision making is key to producing more each season and ensuring progress for generations to come.

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