



# Food Technology for Food Security in Africa



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 **Quick read**

## Introduction

Demand for food in Africa is set to dramatically increase over the next 30 years, with the continent's population predicted to double to over 2.2 billion by 2050. Food and agricultural technology, in all of its forms, has an important role to play in increasing production to match the increasing demand

## Current Situation

Agricultural yields in Africa are currently sitting at around one quarter of the global average. Although technology is essential to improving the situation, adoption in the developing world is evolving more slowly than in other geographies. Reasons include smallholders with shortages of capital, poor rates of literacy and the dominance of mobile phone production.

It is vital that efforts to increase the use of farming technologies do not simultaneously destroy the jobs and incomes on which large proportions of African populations depend. There are also concerns that agricultural technologies may push farmers towards more chemically based farming systems, which, although providing short-term yield increase, deplete and degrade soils over longer periods of time. Judicious use of agricultural technologies can have a opposite effect, by minimising and optimising the amount of chemicals used.

## Irrigation

Irrigation in Africa has the potential to boost crop yields by 50%, however, production on the continent remains almost entirely rainfed. The total amount of agricultural land in Sub-Saharan Africa equipped with irrigation technologies currently stands at a miniscule 4%. According to a United Nations Food and Agriculture (FAO) study, nearly 60% of the population south of the Sahara could benefit from investments in water infrastructure. By using irrigation, farmers can extend growing seasons, increase productivity and incomes and improve their livelihoods. Other benefits include improved food and nutrition security, drought resilience and a better ability to adapt to erratic rainfall patterns. Persistent barriers to adopting progressive irrigation practices remain to be overcome.

- Food and agricultural technology, in all of its forms, has an important role to play in increasing production to match the demand for food from a growing population in Africa.
- Yields shortages of capital, poor rates of literacy and the dominance of mobile phone production all currently conspire to keep the continent's productivity down
- It is important that while increasing the use of farming technologies that jobs and incomes on which large proportions of African populations depend are not destroyed.
- Judicious use of agricultural technologies can have a opposite effect, by minimising and optimising the amount of chemicals used.
- Precision agriculture combats crop stress, monitoring variability, soils, weeds and diseases, saving costs of inputs in both commercial and smallholder farming in Africa. It benefits food security through increasing water and nutrient use efficiency, and timely management of activities such as weed control.

Poor governance and market integration and access to reliable sources of electricity and credit make it difficult for smallholder farmers to acquire the technology. Irrigation systems are however becoming more affordable, and advances in the likes of solar-powered irrigation may make investing in the technology more realistic.

## Mobile Technology

Mobile applications are now being used to provide a range of farming solutions as mobile technology spreads across the continent. There are applications to solve market access issues by connecting producers with retailers, apps that offer skills training, insurance and loans to farmers, and forums where farmers can connect to allow quick responses to their queries. More of these include weather alerts and advice on optimal spraying times. These technologies are designed to improve farm decision making, so as to improve production yields, farm incomes, and food security.



## Precision Agriculture

Precision agriculture is an approach to farm management that uses information technology to increase efficiency on farms. This is often done through the use of drones and satellites providing real-time images of crops and soil, ensuring requirements for optimum health and productivity are met. Through detection of crop stress, monitoring variability, soils, weeds and diseases, precision agriculture has saved costs of inputs in both commercial and smallholder farming in Africa. It benefits food security through increasing water and nutrient use efficiency, and timely management of activities such as weed control. The efficient application of fertilisers and pesticides thanks to precision agriculture means less pollution of water resources and reduced soil degradation, ensuring the future productivity of the land.

## Conclusion

It is clear that the use of technology in agriculture can reduce the negative impact of agriculture on the environment, increase productivity and profitability and improve health and safety, all of which will lead to improved food security on the African continent. These technologies must be made available to farmers, through education on the benefits of adoption but also by affording farmers the means to finance such investments, i.e. through affordable credit. These technologies can help Africa realise its agricultural potential, and by doing so, improve food security on the continent..



### Expert in this Insight

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