



# Agriculture

## Introduction

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Although there are promising developments in several African countries, the continent has yet to have a modern revolution in agricultural production. The lack of progress is disheartening, for it follows several decades of efforts to implement improvements, much of which was initially led by the World Bank, the African Union's Comprehensive Africa Agriculture Development Programme (CAADP) and the Alliance for a Green Revolution (AGRA) that sought to introduce technologies like high-yielding seed hybrids, agrochemicals, mechanisation, and irrigation to Africa, based on the success achieved in improving agricultural productivity in parts of Asia and Latin America.

Fostering growth in Africa's agricultural sector hinges on the millions of smallholder farmers that constitute the sector. Generally, low levels of investment in agriculture, lack of land reform, the continued use of traditional farming methods and ineffective agricultural policies have left Africa with the lowest agricultural yields in the world. Yet farming is the bedrock of human development, and slow progress in this domain, historically and recently, generally helps explain poor progress with development in Africa.

With the noteworthy exceptions of the Nile River, modern-day Ethiopia, some parts of West Africa and the Sahel, the agricultural development pathway in Africa followed a somewhat unique trajectory compared to other regions. The continent's high disease burden (discussed in the theme on [Health/WaSH](#)) constrained population growth in large parts even as humanity expanded rapidly elsewhere. It also inhibited the spread of domesticated livestock southward, as did the poor soil quality in most of the continent, except areas along great rivers such as the Nile and the length of the Great Rift Valley in East and Central Africa.[1]

Free from most diseases, the fertile highlands of Ethiopia were the only regions where Africans developed intensive agriculture, while the open savannah south of the Sahara and north of the tropical rain forests allowed for relatively small-scale settlements. Cattle were important, and the crop plants included sorghum and millet. But as far as technology was concerned, writes Cyril Aydon, the peoples of sub-Saharan Africa still lived in the Stone Age at the time of the Bronze Age, which had passed them by.[2]

Crop plants in sub-Saharan Africa, such as sorghum and pearl millet, were not as nutrient-rich as wheat, barley, rye, oats, rice and maize—the common staple foods that emerged in the rest of the world—nor were they well suited to the prevailing climatic conditions in southern and eastern regions of the continent.[3] However, the cultivation of yams (perennial herbaceous vines native to Africa) in West Africa around 3 000 BC allowed for more significant surpluses, eventually setting off migration southward and eastward. Grains such wheat, barley, rice, and maize are all members of the grass family that produce small, hard seeds meaning they had low moisture content and were durable once harvested and thus easy to store. Their high energy density (calories per kilogram) makes them attractive to transport to distant markets and can be handled at scale to sow, maintain and harvest. As a result these cereal grains, as they are generally known, and the associated production methods that emerged, enabled the emergence of denser settlements, cities and eventually, states.

Maize, which produced much higher yields than sorghum and millet; was introduced into Africa around 1600 but is not drought-resistant. Also, because the continent covers numerous climatic zones from north to south, the richer staple foods prevalent elsewhere could not readily be transplanted across the humid equatorial regions southward.

With farming in sub-Saharan Africa emerging much later than elsewhere, together with the high disease burden in the tropics, the subsequent lower population pressure and competition translated into lower levels of technology. It is reflected in the relatively short lifespans of Africa's numerous empires that either collapsed when the central authority found it unable to maintain control over the extended lands, or were forcibly dismantled by outsiders. Even before the Arab and Atlantic slave trades, most wars on the continent were fought to capture labour rather than to occupy land to the extent that indigenous [African slavery](#) was widespread.

## Endnotes

1. J Reader, *Africa: A biography of the continent*, New York: Penguin, 1998, 99; also see: J Diamond, *Guns, germs and steel: The fates of human societies*, New York: W. W. Norton & Company, 1997; R Tignor et al, *Worlds together, worlds apart: A history of the world — Beginnings through the fifteenth century*, 3rd ed. New York: W. W. Norton & Company, 2010. A 1997 study by the US Department of Agriculture calculates that 55% of the land in Africa is unsuitable for any kind of agriculture except nomadic grazing. See: H Eswaran et al, Soil Quality and Soil Productivity in Africa, *Journal of Sustainable Agriculture*, 10:4, 1997, 75–90.
2. C Aydon, *The story of man*, Constable, London, 2007, 78.
3. J Diamond, *Guns, germs and steel: The fates of human societies*, New York: W.W. Norton & Company, 1997

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## About the authors

Ms Alize le Roux joined the AFI in May 2021 as a senior researcher. Before joining the ISS, she worked as a principal geo-informatics researcher at the CSIR, supporting various local and national policy- and decision-makers with long-term planning support. Alize has 14 years of experience in spatial data analysis, disaster risk reduction and urban and regional modelling. She has a master's degree in geographical sciences from the University of Utrecht, specialising in multi-hazard risk assessments and spatial decision support systems.

Dr Jakkie Cilliers is the ISS's founder and former executive director. He currently serves as chair of the ISS Board of Trustees and head of the African Futures and Innovation (AFI) programme at the Pretoria office of the Institute. His 2017 best-seller *Fate of the Nation* addresses South Africa's futures from political, economic and social perspectives. His three most recent books, *Africa First! Igniting a Growth Revolution* (March 2020), *The Future of Africa: Challenges and Opportunities* (April 2021), and *Africa Tomorrow: Pathways to Prosperity* (June 2022) take a rigorous look at the continent as a whole.

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