Agriculture
Introduction

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Africa is yet to have a revolution in agricultural production. Low levels of investment in agriculture, lack of land reform and the continued use of traditional farming methods leave 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, helps to explain poor progress with development in Africa generally.

The Neolithic revolution started more than 12 000 years ago when humans adapted their nomadic hunter-gatherer lifestyles and turned to farming to meet the needs of their growing population. Given the need for water, most settlements were located close to large rivers, such as the Nile, the Euphrates and the Yangtze. Producing food in large quantities required granaries and the domestication of animals for slaughter, transport and work.

Hunter-gatherer societies were constantly on the move in search of food whereas farmers needed to remain close to their fields, had to store food surpluses for winter or feed more animals. With the transition to farming, villages and towns developed close to fields and people started to make pots to preserve foods and developed ways of storing knowledge through symbols and eventually writing. Soon, a division of labour followed. Communities started a barter system of trade, developed rules for property ownership and learnt how to use metal.

With the noteworthy exceptions of the Nile River, modern-day Ethiopia and some parts of West Africa and the Sahel, the agricultural development pathway in Africa followed a somewhat unique trajectory. The continent's high disease burden (discussed in Theme 3) constrained population levels in large parts of the continent even as humanity expanded rapidly elsewhere. It also inhibited the spread of domesticated livestock southwards.

Poor soil quality in most of the continent, with the exception of areas along great rivers such as the Nile and the length of the Great Rift Valley in East and Central Africa, also constrained agricultural development. [1] Free from most diseases, the fertile highlands in northern Tanzania, central Kenya and Ethiopia were the only regions where Africans developed intensive agriculture. [2]

Finally, crop plants in sub-Saharan Africa, such as yams, 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 African yams in West Africa around 3 000 BCE did allow for larger surpluses to be produced, which eventually set off migration southward and eastward.

Maize, which produces much higher yields than sorghum and millet and was introduced into Africa around 1600, had one major disadvantage: it was not drought resistant. Also, because the continent covered 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, subsequently lower population pressure and hence lower levels of technology, Africa's numerous empires had a relatively short lifespan and collapsed or were forcibly dismantled by outsiders. Even before the Atlantic slave trade, most wars on the continent were fought to capture labour rather than to occupy land to the extent that indigenous African slavery was widespread. [4]
Endnotes


5. T Lewis, *Transatlantic slave trade*, 2018


14. World Bank, *Aggregated LPI*

15. World Bank, *Aggregated LPI*

16. Embassy of the DR Congo, *Invest in DRC, Agriculture*


19. In 2003, the New Partnership for Africa's Development (now called the African Union Development Agency) published its Comprehensive Africa Agriculture Development Programme, with ambitious goals, namely to: allocate at least 10% of national budgets to agriculture; reach rural growth rates of 6% annually by 2015; integrate and invigorate regional and national agricultural markets; significantly increase agricultural exports; transform Africa into a ‘strategic player’ in global agricultural science and technology; practise sound environmental and land management techniques; and reduce rural poverty (see: M Fleshman, *Boosting African farm yields*, 2014).

20. The commitment to devote at least 10% of national budgets to agriculture and rural development was also included in the 2003 Maputo Declaration by African heads of state and reiterated in the 2014 Malabo Declaration on Accelerated Agricultural Growth and Transformation in Africa.

21. On aggregate, Africa spends only 5–7% of national budgets on agriculture, although a 2018 study found that 11 African countries did manage to allocate 10% or more of their budgets to agriculture in some years since 2005, with Ethiopia, Kenya, Mozambique and Sierra Leone achieving 6% agricultural...


33. World Bank, *Agriculture in Africa: Telling facts from myths*.

34. In contrast to the tripling in growth cited earlier, this was an improvement across the entire country, so the growth is understandably much smaller; see: JY Lin, *The Household Responsibility System in China’s Agricultural Reform: A Theoretical and Empirical Study*, *Economic Development and Cultural Change*, 36:53, 1988, S199–S224.

35. China-Africa Project, Chinese and African agriculture have a lot more in common that most people think: *Interview with Xinqing Lu, Associate Programme Officer for Alliance for a Green Revolution in Africa*, 3 December 2019.

36. OEC, Brazil.


41. In most of rural Africa, precise location of a farm is objectively unknown so the location is determined via a series of SMS questions (e.g. time to walk to different primary schools). The more schools a farmer is familiar with in their area, the easier it is to hone in on their specific location.

42. J Bird, *'Smart' insurance helps poor farmers to cut risk*, *Financial Times*, 5 December 2018; also see, for example, https://agrocenta.com/ and https://www.zenvus.com/.

44. S Gebre, **AGRA plans to invest $500 million in African seed companies**, Bloomberg, 7 September 2016

45. The Alliance for Food Sovereignty in Africa and its allied organisations argue that ‘AGRA has unequivocally failed in its mission to increase productivity and incomes and reduce food insecurity, and has in fact harmed broader efforts to support African farmers.’ See: Various co-signatories, **Open letter: The Green Revolution in Africa has unequivocally failed**, 15 September 2021


47. Ammonia manufacturing contributes 1% of worldwide carbon dioxide emissions. See LK Boerner, Industrial ammonia production emits more CO2 than any other chemical-making reaction. Chemists want to change that, *Chemical & Engineering News*, 15 June 2019

48. See, for example, T Guédégbé and MR Doukkali, **Fertilizer use in Africa: A price issue**, Policy Brief 18, OCP Policy Center, 2018; World Bank, **Unlocking Africa’s Agricultural Potential: An Action Agenda for Transformation**, Rabat: Policy Center for the New South, 2013, 16.

49. Indorama Petrochemicals, **About IEPL**, Port Harcourt


54. Food and Agriculture Organization, **Food wastage: Key facts and figures**

55. InspiraFarms, **Our team**

56. The improvements in yields are similar in magnitude to the improvements seen in South Asia between 1980 and 2020, and in a similar timeframe. Indeed, South America achieved a much more rapid increase between 2000 and 2010, moving from roughly 7.8 tons per hectare to about 11.8 tons.

57. Chart 14 presents the reduction in extreme poverty in African countries across the low- and middle-income categories. The reduction in extreme poverty in Seychelles, Africa’s only high-income country, is negligible.

58. The contribution of agriculture as a proportion of the Seychelles’ economy, the continent’s only high-income island state, was about 4% in 2019.

59. Some of these constraints can be overcome through technology, such as the use of precision irrigation and application of precise amounts of fertiliser exactly where they are required. Then there is also the potential of vertical farming, which could produce 180 m tons of food globally, according to some analysts.


61. Food and Agriculture Organization, **Government expenditure on agriculture**, 2019


63. Intergovernmental Panel on Climate Change, Working Group II: **Impacts, adaptation and vulnerability**, 2018


65. The International Institute of Tropical Agriculture does particularly impressive work in this regard. See: https://www.iita.org/
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Jakkie Cilliers is the founder and former executive director of the Institute for Security Studies (ISS). 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 ISS. His 2017 best-seller Fate of the Nation addresses South Africa’s futures from political, economic and social perspectives. His two most recent books, *Africa First! Igniting a Growth Revolution* (March 2020) and *The Future of Africa: Challenges and Opportunities* (April 2021), take a rigorous look at the continent as a whole.

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