

KENYA

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Background and Key Trends

- ▶ Growth in agricultural research spending during 2000–2016 mostly stemmed from increased capacity within Kenya’s higher education sector and among government organizations other than KALRO.
- ▶ Both KEFRI and KMFRI reported substantial growth in both their spending and researcher numbers. As a result, forestry and fisheries’ share of agricultural research rose from 12 percent in 2008 to 18 percent in 2016.
- ▶ In efforts to improve the coordination and efficiency of resource use, KARI, KESREF, CRF, and TRFK were merged to form KALRO in 2014. The goal—following the trend in countries like Brazil, Mexico, Japan, and India—is to promote cross-sectoral integration and collaboration. The establishment of the State Department for Agricultural Research is intended to both facilitate and fast track this process.

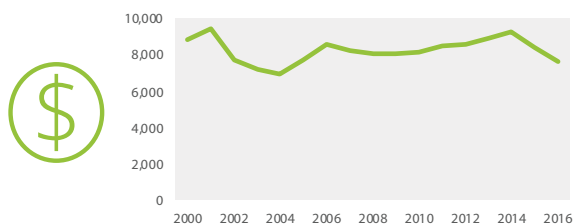
Challenges

- ▶ Maintaining high-quality research and avoiding loss of research capacity will be crucial in addressing, or mitigating, future challenges, given that a significant number of senior researchers in the government and higher education sectors are nearing retirement age.
- ▶ Given declining government funding, the cessation of EAAPP, and the government’s reallocation of commodity-levy funding to nonresearch-related activities, KALRO was forced to use reserve funding during 2015–2017 to meet its expenses.
- ▶ An internal evaluation determined that KALRO would need to increase its agricultural researcher numbers by 40 percent to fulfill its research potential. Despite this, and the recent hiring of some interns on one-year contracts, KALRO’s researcher capacity is slowly declining and will continue to do so based on the departure and retirement of senior researchers and the ongoing long-term hiring freeze.

Policy Options

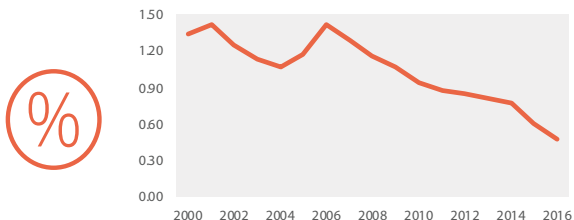
- ▶ The government research institutes need solid hiring, training, and mentorship plans, backed by government support. Exempting KALRO from the country’s civil service hiring freeze would also enable pressing human resource gaps to be filled.
- ▶ Establishing an agricultural research fund according to the NARS Policy and KALRO’s restructuring plan could be a way to secure the organization’s self-sufficiency and reduce its dependence on volatile external donor funding.
- ▶ Having the national government reallocate commodity-tax revenues for coffee, sugar, and tea back to agricultural research would secure ongoing R&D for these key commodities.

AGRICULTURAL RESEARCH SPENDING



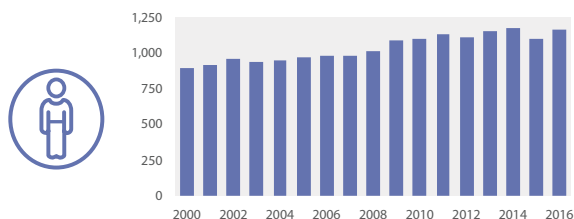
	KENYA	ETHIOPIA	NIGERIA (2014)	SOUTH AFRICA (2014)
Million Kenyan shillings (2011 constant prices)	7,637.7			
Million PPP dollars (2011 constant prices)	222.7	162.1	433.5	417.4

SPENDING INTENSITY



Agricultural research spending as a share of AgGDP	0.48%	0.29%	0.22%	2.78%
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AGRICULTURAL RESEARCHERS



Full-time equivalents	1,157.6	3,024.6	2,975.5	811.3
Share of researchers with MSc and PhD degrees	85%	47%	66%	na

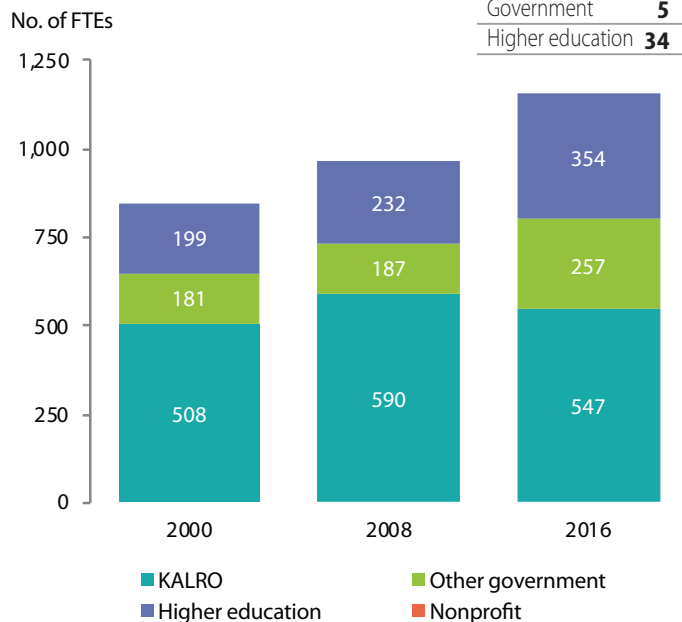
Notes: Data in the table above are for 2016. Research conducted by the private for-profit sector is excluded from this factsheet due to lack of available data. Information on access to further resources, data procedures and methodologies, and acronyms and definitions are provided on Page 4. See www.asti.cgiar.org/kenya/directory for an overview of Kenya’s agricultural R&D agencies.

Institutional composition of agricultural research

Expansion in the number and size of public and private universities and in the conduct of forestry and fisheries research led to an increase in the overall number of agencies and the total number of agricultural researchers employed in Kenya in recent years.

39 AGENCIES, 2016

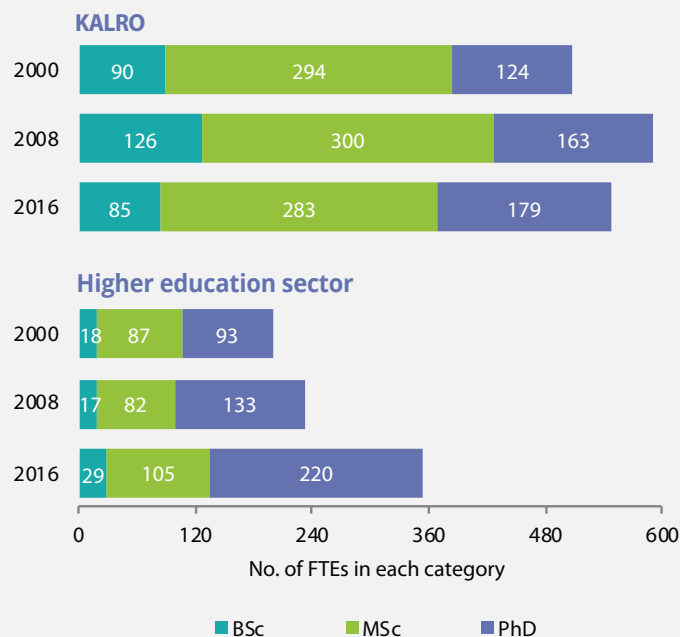
Government **5**
Higher education **34**



Note: Data for KALRO in 2000 and 2008 have been aggregated from data for the government agencies and the former entities KARI, KESREF, CRF, and TRFK.

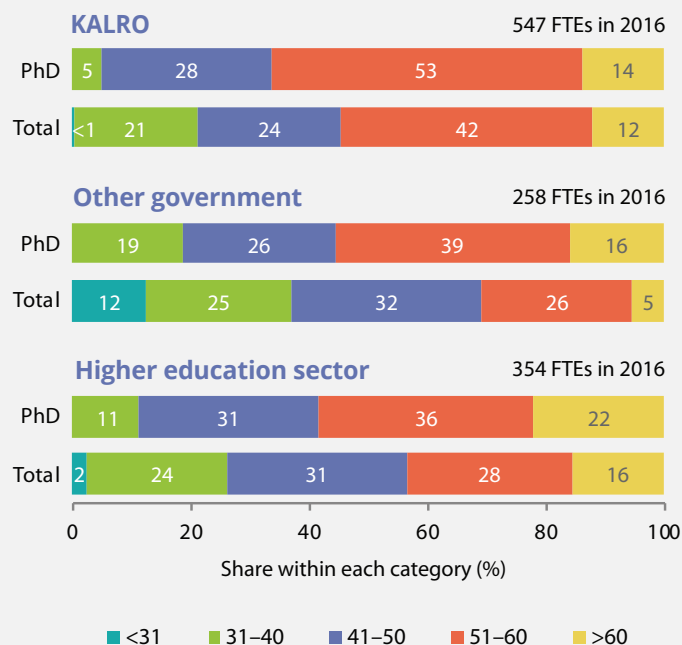
Agricultural researchers by sector and qualification level

The number of PhD-qualified researchers employed in the higher education sector surpassed the number employed at KALRO during 2008–2016. At the same time, the number of researchers with only BSc degrees fell substantially at KALRO and declined somewhat among the higher education agencies during this timeframe.



Distribution of agricultural researchers by sector and age bracket

Large shares of PhD-qualified researchers at most agricultural research agencies in Kenya are in their 50s or 60s. The situation is particularly serious at KALRO: two-thirds of the PhD-qualified researchers and about half of the BSc- and MSc-qualified researchers were more than 50 years old as of 2016.



Agricultural researchers by gender

The country's share of female agricultural researchers grew from 25 percent in 2008 to 30 percent in 2016. As of 2016, female researchers were comparatively younger and less well-qualified than their male colleagues.



Share of women within each qualification level, 2016

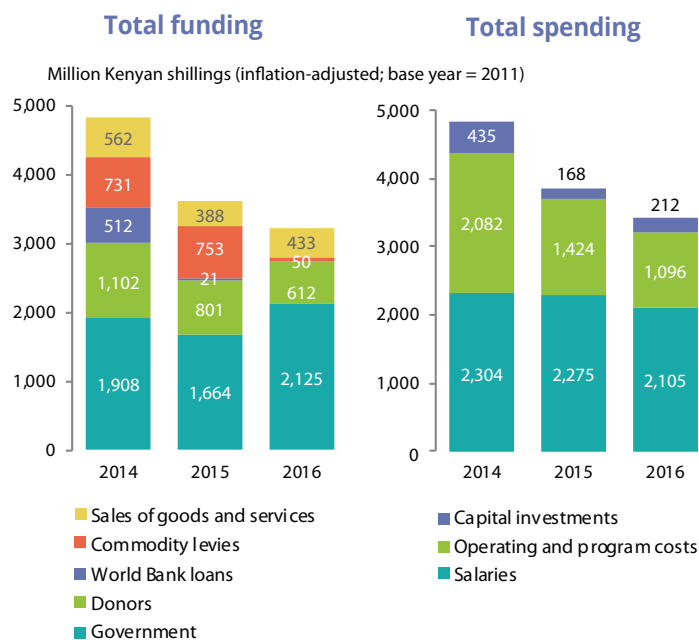
BSc	33%	MSc	33%	PhD	22%
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Share of women by age bracket, 2016

< 41	41%	41–50	38%	> 50	18%
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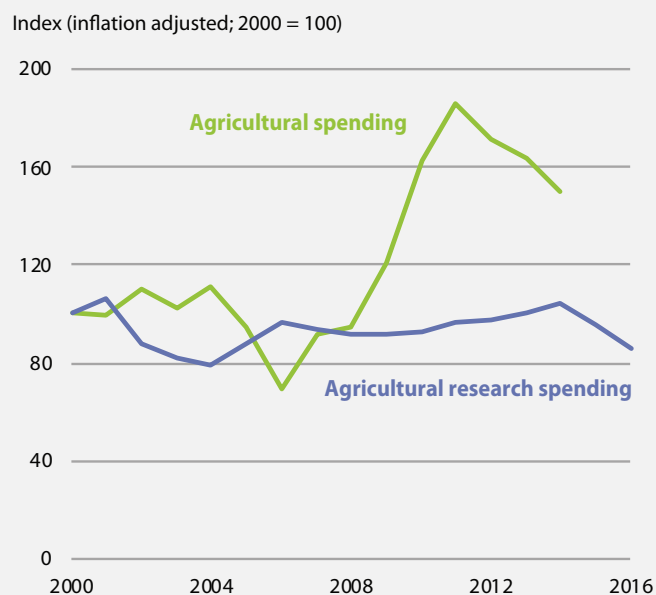
KALRO's funding and spending compared

Donor and development bank support to KALRO contracted during 2014–2016, partly due to the completion of EAAPP and KAPAP. Although the government increased KALRO's funding in 2016—partly offsetting losses due to its reallocation of commodity tax revenues—this was insufficient to cover losses from inflation. As a result, KALRO had to access its reserves to meet its 2015–2017 operating and research expenses.



Spending on agriculture and agricultural research

In 2003, as part of the CAADP process, African heads of state committed to spending at least 10 percent of their budgets on agriculture, with the goal of achieving 6 percent yearly agricultural growth. Although the Kenyan government increased its agricultural investments from 2006, its investment in agricultural research has not kept pace and declined between 2014 and 2016.

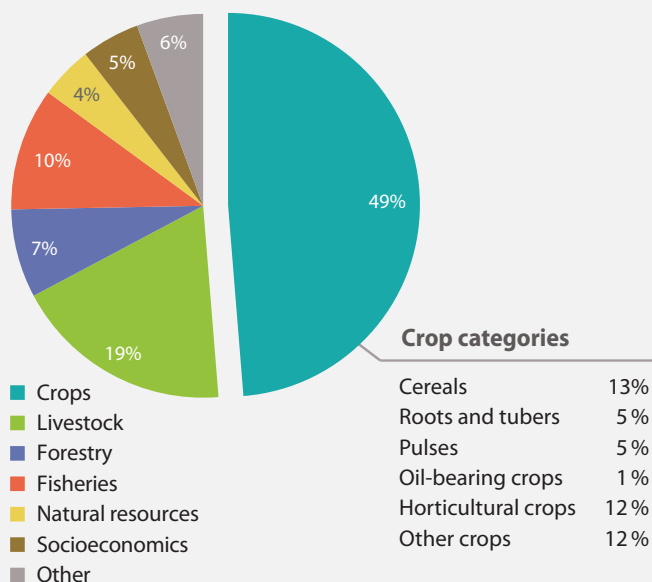


Notes: Data on agricultural spending are from ReSAKSS (Regional Strategic Analysis and Knowledge Support System). 2017. ReSAKSS Map Tool. Accessed February 2017. www.resakss.org/map. Agricultural spending only includes funds derived from national governments; agricultural research spending includes funds derived from governments, donors, development banks, producer organizations, and revenues generated internally by research agencies.

Agricultural researchers by area of focus

In 2016, close to half of the country's FTE researchers conducted crop research, whereas 19 percent undertook livestock research. Major crops under investigation were maize, vegetables, tea, beans, sugar, and coffee. Livestock research mostly focused on beef and dairy.

Share of researchers, 2016



KALRO's recently released crop varieties

Kenya's main agricultural research agency involved in crop breeding, KALRO, released 15 new maize varieties and 34 new varieties for other crops during 2014–2016.

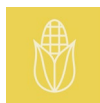
Crop	Number of varieties, 2014–2016
Maize	15
Sugar	8
Wheat	7
Beans	5
Sorghum	3
Millet	3
Potatoes	3
Tea	3
Sweet potatoes	2
Total	49

Resources for Kenya

This factsheet presents recent data on the performance of agricultural research in Kenya, primarily focusing on key financial, human resource, institutional, and output indicators, while also highlighting relevant trends, challenges, and institutional changes. Additional resources are available at www.asti.cgiar.org and include:



ASTI's **interactive country page** for Kenya features national agricultural research investment and capacity data, a data exploration and download tool, as well as access to a variety of country publications.



ASTI's **benchmarking tool** allows key agricultural research indicators to be ranked and compared across African countries.



ASTI's **data download tool** provides access to more in-depth ASTI datasets and graphs for Kenya and many other countries.



ASTI's **agency directory** provides a view of agencies that conduct agricultural research in Kenya, along with their locations and key agency-level indicators.

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Policy Options
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ASTI Data Procedures and Methodologies

- ▶ The **data underlying this factsheet** were predominantly derived through primary surveys, although some data were drawn from secondary sources or were estimated.
- ▶ Agricultural research includes research conducted by the government, higher education, and nonprofit sectors; research conducted by the private for-profit sector and international organizations is excluded.
- ▶ ASTI bases its calculations of human resource and financial data on **full-time equivalent (FTE) researchers**, which take into account the proportion of time staff actually spend on research compared with other activities.
- ▶ ASTI presents its financial data in 2011 local currencies and **2011 purchasing power parity (PPP) dollars**. PPPs reflect the relative purchasing power of currencies more effectively than do standard exchange rates because they compare prices of a broader range of local—as opposed to internationally traded—goods and services.
- ▶ ASTI estimates the **higher education sector's research expenditures** because it is not possible to isolate them from the sector's other expenditures.
- ▶ Note that **decimal rounding** can cause totals to be one point higher or lower than the sum of their parts.



For more information on ASTI's data procedures and methodology, visit www.asti.cgiar.org/methodology.

Acronyms

AgGDP	agricultural gross domestic product
CRF	Coffee Research Foundation
EAAPP	Eastern Africa Agricultural Productivity Project
FTE(s)	full-time equivalent(s)
KALRO	Kenya Agricultural and Livestock Research Organization
KAPAP	Kenya Agricultural Productivity and Agribusiness Project
KARI	Kenya Agricultural Research Institute
KEFRI	Kenya Forestry Research Institute
KMFRI	Kenya Marine and Fisheries Research Institute
RESREF	Kenya Sugar Research Foundation
PPP(s)	purchasing power parity (exchange rates)
R&D	research and experimental development
TRFK	Tea Research Foundation of Kenya

About ASTI, IFPRI, and KALRO

Working through collaborative alliances with numerous national and regional R&D agencies and international institutions, **Agricultural Science and Technology Indicators (ASTI)** is a comprehensive and trusted source of information on agricultural R&D systems across the developing world. ASTI is facilitated by the **International Food Policy Research Institute (IFPRI)**, which—as a CGIAR member—provides evidence-based policy solutions to sustainably end hunger and malnutrition and reduce poverty. The **Kenya Agricultural and Livestock Research Organization (KALRO)** is Kenya's principal agricultural research agency; the organization brings together research programs in food crops, horticultural and industrial crops, livestock and range management, land and water management, and socioeconomics.

ASTI/IFPRI and KALRO gratefully acknowledge participating agricultural R&D agencies for their contributions to the data collection and preparation of this factsheet. ASTI also acknowledges the Bill & Melinda Gates Foundation and CGIAR Research Program on Policies, Institutions, and Markets for their generous support of ASTI's work in Africa south of the Sahara. This factsheet has been prepared as an ASTI output and has not been peer reviewed; any opinions are those of the authors and do not necessarily reflect the policies or opinions of IFPRI or KALRO.

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