KENYA

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KEY INDICATORS, 2000–2011

Total Public Agricultural Research Spending	2000		2008		2011
Kenyan shillings (million constant 2005 prices)	4,479.3		5,011.9		5,553.3
PPP dollars (million constant 2005 prices)	151.7		169.8		188.1
Overall Growth		**12%**		**11%**	
Total Number of Public Agricultural Researchers					
Full-time equivalents (FTEs)	880.8		1,014.1		1,150.9
Overall Growth		**15%**		**13%**	
Agricultural Research Intensity					
Spending as a share of agricultural GDP	1.32%		1.35%		1.21%
FTE researchers per 100,000 farmers	8.19		7.96		8.53

Note: Acronyms, definitions, and an overview of agricultural R&D agencies are available on page 4.

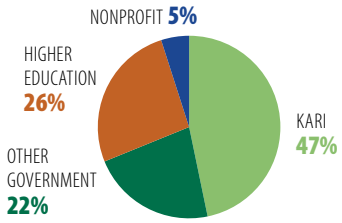
- Public agricultural R&D spending increased by 11 percent during 2008–2011 as a result of strong growth at CRF and other government agencies involved in agricultural research.
- Although government funding for agricultural research has been strong and stable over time, total funding levels have fluctuated in response to high, but variable, levels of donor support —including development bank loans—to Kenya's main agricultural research agency, KARI.
- The total number of researchers employed at KARI remained fairly constant during 2008–2011 despite a decrease in the number of PhD-qualified researchers. Researcher numbers at most other agencies grew substantially during this time, resulting in a net increase of R&D capacity nationwide.

FINANCIAL RESOURCES, 2011

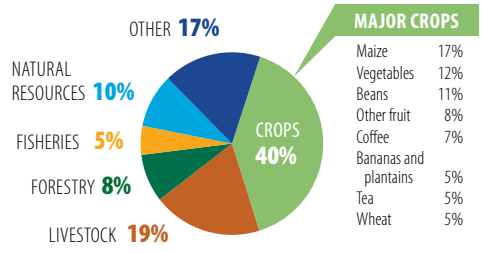
Spending Allocation	
Salaries	50%
Operating and program costs	41%
Capital investments	9%
Funding Sources	
Government	62%
Donors	10%
Development bank loans	9%
Commodity levies/producer organizations	13%
Sales of goods/services	6%

Note: Due to lack of availability, financial data exclude the higher education sector.

INSTITUTIONAL PROFILE, 2011

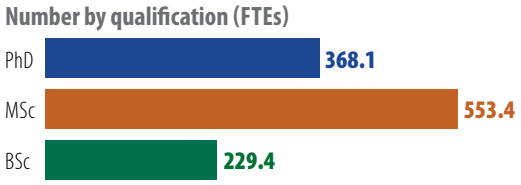


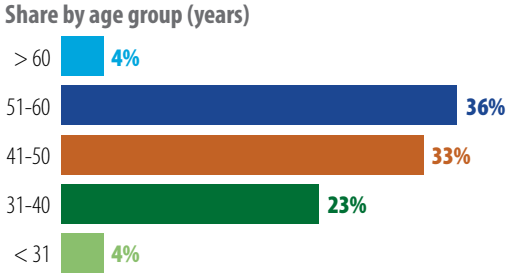
RESEARCH FOCUS, 2011



Notes: Major crops include those that are the focus of at least 5 percent of all crop researchers; 31 percent of all crop researchers focused on a wide variety of other crops.

RESEARCHER PROFILE, 2011





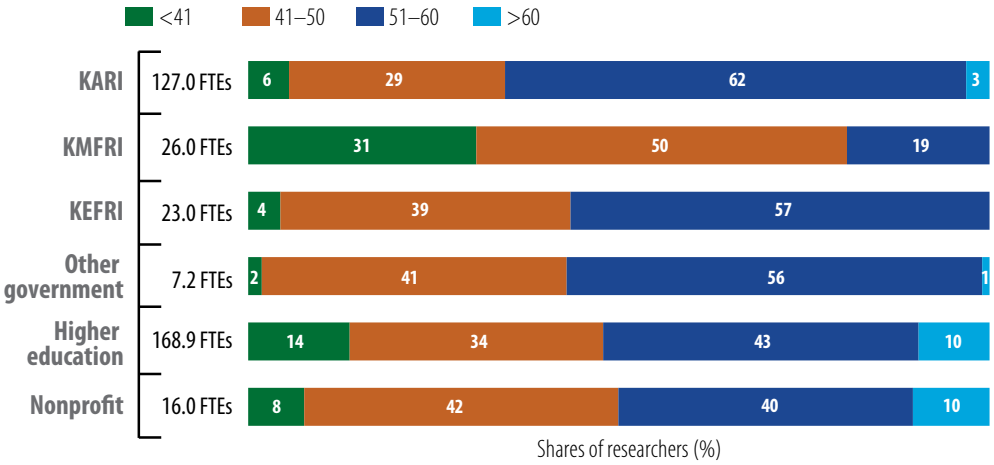
CHALLENGE

- A large number of senior, highly qualified researchers at KARI have recently retired or will soon do so. Despite the increase of the official retirement age in 2004, the institute has not been able to maintain its number of PhD-qualified researchers, though capacity losses have been lower than before 2004.

POLICY RESPONSES

- In addition to increasing the retirement age to address the loss of senior staff, KARI institutionalized a variety of incentive measures over time in efforts to retain staff. As such, KARI offers a positive example to other African agricultural R&D agencies facing similar, or in many cases, more severe human resource challenges.

Distribution of PhD-qualified researchers by age bracket, 2011



Most agricultural research agencies in Kenya face a severe human resource challenge in that large shares of their PhD-qualified researchers are in their fifties or sixties. In KARI's case, two-thirds of PhD-qualified researchers are older than 50 years.

STAFF MOBILITY AND RETENTION STRATEGIES AT KARI

Of the researchers who departed KARI during 2001–2010, about half were transferred to other government departments, were dismissed, or took study leave (often to pursue higher education); 18 percent retired; 18 percent passed away; and 14 percent resigned. Many of the researchers who were transferred or resigned in recent years, especially those with PhD degrees, accepted positions at local universities with similar salary packages but with more flexible working conditions (for example, greater freedom in working hours, better promotional opportunities, and the potential to earn additional income through consultancies).

Recognizing the challenge of retaining well-qualified staff, KARI institutionalized a variety of measures over time, including (1) scholarships and paid study leave, as part of a broader training plan, enabling researchers and technicians to attain higher degrees and become eligible for promotion; (2) performance-based evaluations to improve opportunities for promotion and higher remuneration; (3) increased salaries and allowances, as well as a comprehensive group insurance and medical insurance scheme; (4) the ability for researchers to accept part-time teaching positions at nearby universities and to engage in research consultancies; (5) opportunities to take a leave of absence to undertake short-term work with other institutions that conduct research of relevance to KARI; and (6) an increase in the official retirement age from 60 to 65 years. These measures netted KARI a lower rate of staff attrition compared with comparable institutes in Africa. Recruitment levels, however, were also low during this period, mostly due to a civil service hiring freeze.

Note: This information is based on Murithi and Minayo 2011 (see www.asti.cgiar.org/pdf/conference/theme2/casestudies/murithi.pdf).

CROSS-COUNTRY COMPARISONS OF KEY INDICATORS

	Total number of researchers, 2011 (FTEs)	Growth in number of researchers, 2008–2011	Share of PhD researchers, 2011 (FTEs)
Kenya	**1,150.9**	**13%**	**32%**
Uganda	353.9	13%	31%
Ethiopia	1,876.6	33%	9%
Tanzania	814.8	18%	20%

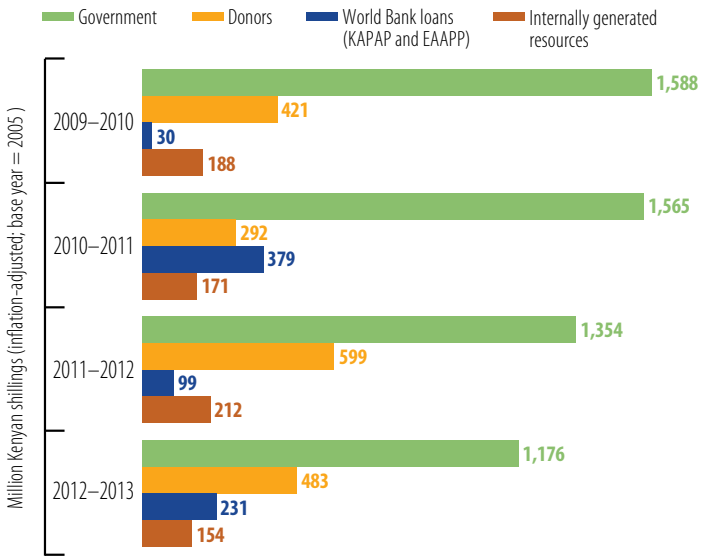
CHALLENGE

- Kenya has a large number of agencies involved in agricultural research, and the number has increased in recent years through the expansion of public and private universities. To date these agencies have mostly conducted research in isolation of each other, which increases the risk of duplicated research efforts and wasteful or inefficient allocation of resources.

OBSERVATION

- The Kenyan government is restructuring public agricultural research by merging CRF, KARI, KESREF, and TRF under the Kenya Agricultural and Livestock Research Organization (KALRO) to streamline and coordinate the country's agricultural research system. This will eventually lead to greater efficiency and effectiveness in addressing diverse national development goals within the context of limited financial, human, and physical resources.

KARI's funding sources, 2009–2013



Government support to KARI has remained strong over time but contracted in recent years in inflation-adjusted terms. Government funding is allocated to salaries and operating costs, but donor and development bank support are important sources of funding for actual research programs. Although small, revenues generated internally through the sale of goods and services grew considerably in recent years.

Notes: Fiscal years run from July 1 to June 31 and are reported elsewhere in this factsheet as the latter year (for example, 2009/10 is reported by ASTI as 2010). The 2013 deflator has been estimated using the inflation rate for 2012.

INTEGRATING THE NATIONAL AGRICULTURAL RESEARCH SYSTEM

Agricultural research in Kenya is conducted by a large number of diverse government and nonprofit agencies established under a variety of legal and institutional frameworks. Most agencies plan and execute their research activities independently, which increases the risk of duplication, competition, and inefficient use of limited financial, human, and physical resources. In addition, the number of higher education agencies involved in agricultural research has increased with the substantial expansion of the country's public and private universities in recent years. Collaboration between the university and government sectors in the conduct of agricultural research has been limited to date. Kenya is also home to a number of private, regional, and international agencies, making its agricultural research system one of the most diverse in Africa.

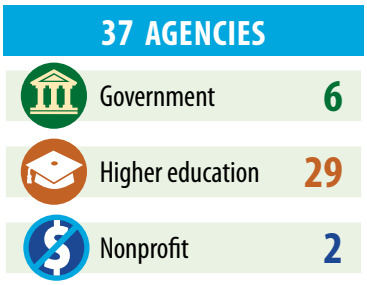
To improve coordination and efficiency in the use of resources, the government developed a National Agricultural Research System Policy in 2012 and enacted the Kenya Agricultural and Livestock Research Act in 2013, paving the way for the formation of KALRO as an umbrella research organization, which is expected to be operational in 2014. The new structure and coordination mechanisms currently being implemented accord with recommendations put forward by the External Management and Programme Review commissioned by the World Bank. These changes will eventually lead to greater integration between the government and higher education sectors in conducting agricultural research, and to closer collaboration with private, regional, and international organizations.

CROSS-COUNTRY COMPARISONS OF KEY INDICATORS *continued*

	Total spending, 2011 (million 2005 PPP dollars)	Overall spending growth, 2008–2011	Spending as a share of AgGDP, 2011
Kenya	**188.1**	**11%**	**1.21%**
Uganda	106.8	15%	1.22%
Ethiopia	69.6	8%	0.19%
Tanzania	81.4	5%	0.54%

OVERVIEW OF KENYA'S AGRICULTURAL RESEARCH AGENCIES

Thirty-seven public agencies conduct agricultural R&D in Kenya, including six government agencies, which together accounted for about 70 percent of the country's agricultural R&D capacity in 2011. KARI alone accounts for almost half the country's agricultural R&D capacity (538 FTEs in 2011). The institute conducts research and disseminates new technologies through its network of 23 research centers located across the country. KARI works with the National Commission for Science, Technology and Innovation to provide policy and priority-setting advice on issues related to agricultural R&D. The remaining five government institutes (254 FTEs combined) focus on forestry, sugar, socioeconomics, agricultural engineering, and fisheries research, respectively. The higher education sector includes 29 separate units conducting agricultural R&D under 13 universities. The role of the higher education sector has grown tremendously since 2009, as a result of the establishment of several new agricultural colleges and departments. Two nonprofit agencies, CRF and TRF (57 FTEs combined)—focusing on coffee and tea research, respectively—play a small but important role in agricultural R&D. Some Kenyan-based private companies are known to conduct crops and livestock research, but given lack of available data, agricultural R&D conducted by the private for-profit sector is excluded from this factsheet.



For a complete list of the agencies included in ASTI's dataset for Kenya, visit **www.asti.cgiar.org/kenya**.

ASTI DATA PROCEDURES AND METHODOLOGIES

- The **data underlying this fact sheet** were predominantly derived through primary surveys, although some data were drawn from secondary sources or were estimated.
- **Public agricultural research** includes research conducted by government agencies, higher education agencies, and nonprofit institutions.
- 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 2005 local currencies and **2005 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, due to **decimal rounding**, the percentages presented can sum to more than 100.

For more information on ASTI's data procedures and methodology, visit **www.asti.cgiar.org/methodology**; *for more information on agricultural R&D in Kenya, visit* **www.asti.cgiar.org/kenya**.

ACRONYMS USED IN THIS FACTSHEET

CRF	Coffee Research Foundation
EAAPP	Eastern Africa Agricultural Productivity Project
FTE(s)	Full-time equivalent (researchers)
KALRO	Kenya Agricultural and Livestock Research Organization
KAPAP	Kenya Agricultural Productivity and Agribusiness Project
KARI	Kenya Agricultural Research Institute
KESREF	Kenya Sugar Research Foundation
PPP(s)	Purchasing power parity (exchange rates)
R&D	Research and development
TRF	Tea Research Foundation

ABOUT ASTI, IFPRI, AND KARI

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 led 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 Research Institute (KARI)** is Kenya's principal agricultural research agency; the institute falls under the Ministry of Agriculture and it conducts crop, livestock, socioeconomic and natural resources research.

ASTI/IFPRI and KARI gratefully acknowledge participating agricultural R&D agencies for their contributions to the data collection and preparation of this country factsheet. ASTI also thanks the Bill and Melinda Gates Foundation for its 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 KARI.