ETHIOPIA

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KEY INDICATORS, 2000–2011

Total Public Agricultural Research Spending	2000		2008		2011
Birr (million constant 2005 prices)	107.7		145.4		156.9
PPP dollars (million constant 2005 prices)	47.8		64.5		69.6
Overall Growth		**35%**		**8%**	
Total Number of Public Agricultural Researchers					
Full-time equivalents (FTEs)	743.8		1,410.3		1,876.6
Overall Growth		**90%**		**33%**	
Agricultural Research Intensity					
Spending as a share of agricultural GDP	0.30%		0.24%		0.19%
FTE researchers per 100,000 farmers	3.09		4.68		5.79

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

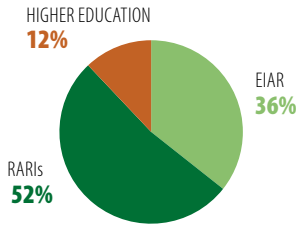
- National agricultural research spending increased by a modest 8 percent during 2008–2011. The majority of funding was derived from government sources, with foreign donors contributing around 20 percent in 2011. At just 0.19 percent in 2011, Ethiopia's agricultural research intensity ratio (investment in agricultural R&D as a share of AgGDP) is one of the lowest in Africa.
- Continuing the growing trend in Ethiopia toward the decentralization of research, in 2011 the RARIs accounted for half the country's agricultural researchers (in FTEs) compared with about one-third in 2000. Combined, the RARIs accounted for 42 percent of total agricultural R&D spending in 2011.
- Ethiopia has one of the fastest-growing, but youngest and least-qualified pools of agricultural researchers in Africa. As of 2011, more than half the country's agricultural researchers (in FTEs) held only BSc degrees, and 48 percent were under 31 years old.

FINANCIAL RESOURCES, 2011

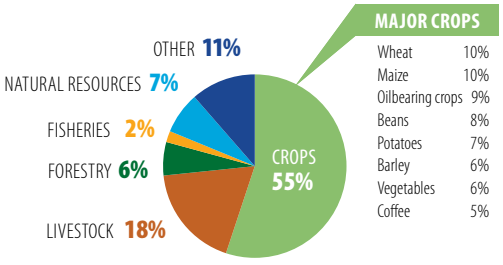
Spending Allocation	
Salaries	39%
Operating and program costs	33%
Capital investments	28%
Funding Sources	
Government	80%
Donors	18%
Development bank loans	1%
Sales of goods/services	1%

Note: Shares are based on data for EIAR only.

INSTITUTIONAL PROFILE, 2011



RESEARCH FOCUS, 2011

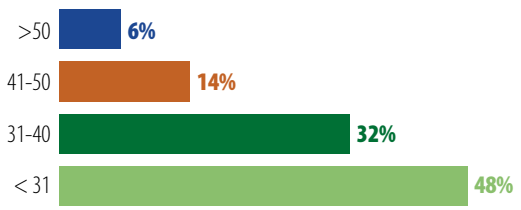


Notes: Major crops include those that are the focus of at least 5 percent of all crop researchers; 39 percent of total crop researchers focused on a wide variety of other crops.

RESEARCHER PROFILE, 2011

Number by qualification (FTEs)

Share by age group (years)



CHALLENGE

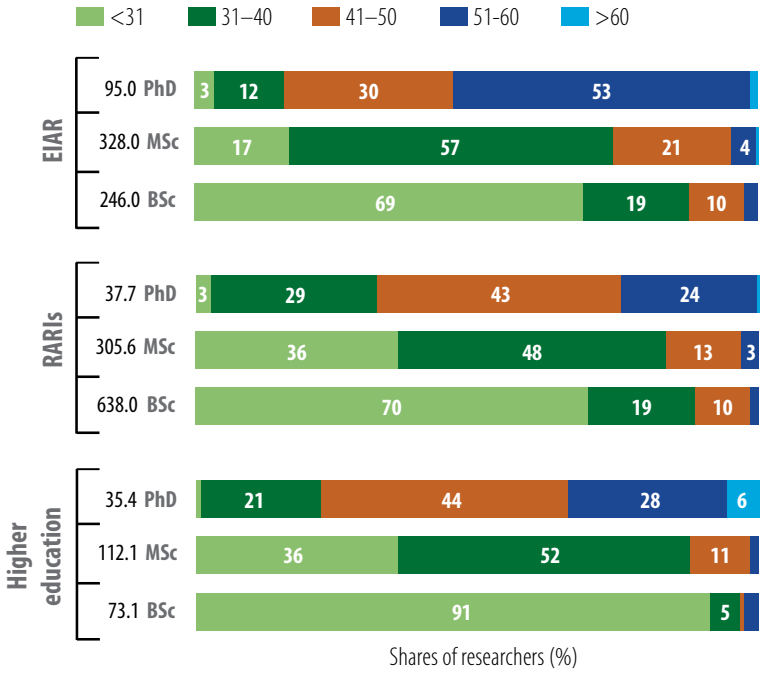
- Although the total number of FTE researchers employed at EIAR and the RARIs has increased in recent years, many of the new recruits are young and only trained to the BSc level. Many long-serving senior staff left EIAR during 2008–2011 in favor of positions within universities, at donor or international organizations, and elsewhere.

POLICY OPTIONS

- Ethiopia will need to invest in improving the qualifications of its newly recruited junior researchers, and endeavor to maintain a more balanced age structure to ensure the future continuity of research. Aiming to halt the high turnover of its researchers, EIAR is currently developing a new staffing structure that includes incremental salary increases, housing allowances, and a new "lead researcher" classification.

As of 2011, the majority of researchers employed at EIAR and the higher education agencies held a minimum MSc qualification, whereas most researchers employed at the RARIs only held BSc degrees. About 80 percent of the researchers employed at the RARIs and higher education agencies were under 40 years old (and about half of those were under 31 years old), whereas the age distribution of EIAR's researchers was more balanced.

Distribution of agricultural researchers by age bracket, 2011



HIGH STAFF TURNOVER AT EIAR

In efforts to improve efficiency, the Ethiopian government implemented a restructuring process (affecting both government and higher education agencies), which led to the departure of 200 researchers and support staff from EIAR in 2008. Some staff left in response to the inherent uncertainty of the process, whereas others were laid off or chose to accept early retirement. Regrettably, some staff members were laid off in error, and even though all the staff who had been let go are currently being reinstated to their original positions, many long-serving researchers have continued to leave EIAR in pursuit of better remuneration and conditions elsewhere. Further moves to improve researchers' salary packages have been initiated, but whether these actions will be sufficient to halt the high rate of staff attrition remains to be seen.

Loss of researchers from EIAR, 2010–2012 (FTEs)

	2010	2011	2012
PhD	9	14	15
MSc	35	37	28
BSc	18	21	18
Total	62	72	61

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)
Ethiopia	**1,876.6**	**33%**	**9%**
Kenya	1,150.9	13%	32%
Uganda	353.9	13%	31%
Tanzania	814.8	18%	20%

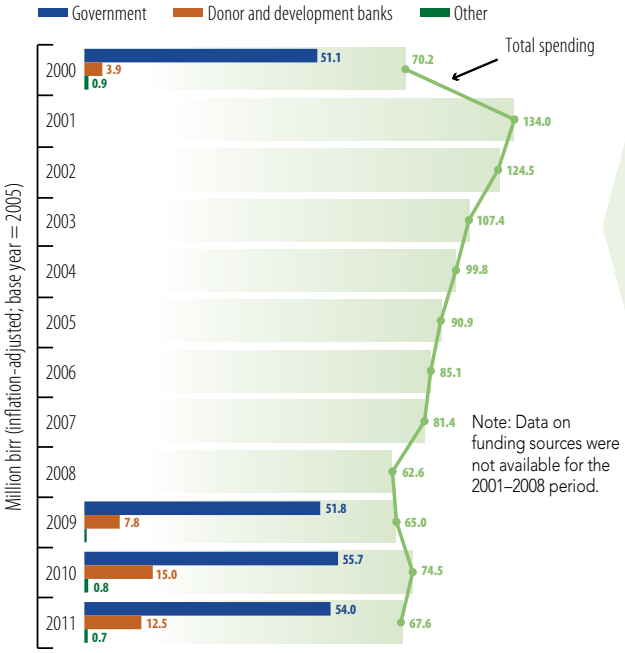
CHALLENGES

- Underinvestment in agricultural R&D in Ethiopia—reflected in its very low, and declining, intensity ratio—is serious. The nation's agricultural research has become increasingly fragmented due to the combined effect of decentralization (through the RARIs) and a growing number of higher education agencies focusing on agriculture.

POLICY OPTIONS

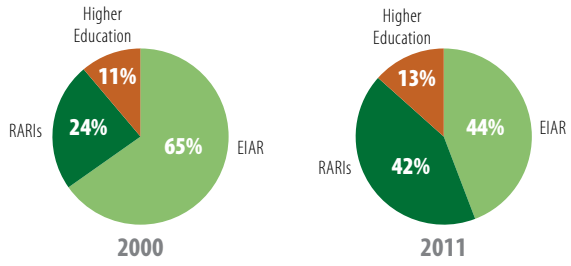
- Higher and consistent levels of government support are needed, along with a stronger alignment of external (donor and development bank) funding with national priorities. Moreover, Ethiopia's fragmented research system requires greater coordination; the draft NARS reform document proposing the establishment of the Ethiopian Agricultural Research Council is a positive first step.

EIAR's total spending and funding by source, 2000–2011



Note: Data on funding sources were not available for the 2001–2008 period.

Increased decentralization of agricultural research, 2000–2011



Note: Shares are based on spending data.

In the decade prior to 2011, EIAR's yearly expenditures fell by 50 percent in inflation adjusted terms, largely due to the completion of ARTP (2001–2005); a project cofinanced by a World Bank loan and the Ethiopian government. Toward the end of the decade, the national government contributed around 80 percent of EIAR's total funding, and external funding fell to about 20 percent.

Ethiopia decentralized its agricultural research system from the mid-1990s, and a number of centers were transferred to regional authorities. The original RARIs grew after their 1997 separation from EIAR, and several new regional institutes were established. Hence, the RARIs' share of national agricultural spending on agricultural R&D increased substantially.

THE NEED FOR A MORE COORDINATED NARS

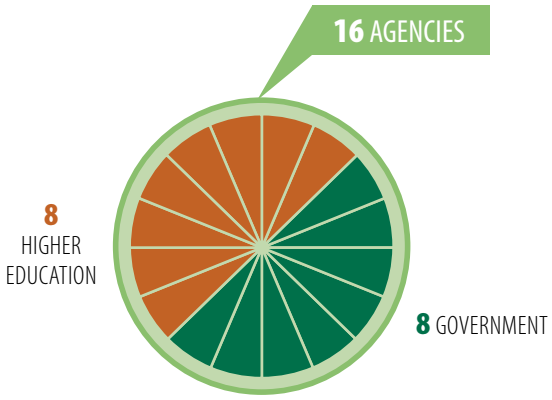
Ethiopia's dual system of federal and regional research institutes, combined with agricultural universities, has increased the country's number of agricultural research performers, but coordination—although officially under EIAR's mandate—has remained weak due to a lack of formal mechanisms. This has led to duplication of research effort, lack of transparency, and inefficient use of funding. Benefitting from the experience of other countries, such as India, EIAR and ATA have developed a proposal to establish the Ethiopia Agricultural Research Council. The council's primary mandate will be to establish a more coordinated agricultural research system to ensure effective, efficient, and accountable use of resources in pursuing an integrated, demand-driven program of research in line with national priorities. The council will also facilitate appropriate capacity building of human resources, investment in necessary infrastructure, and the mobilization of local and foreign funding. Researchers from EIAR and the RARIs are already collaborating as an initial step in this process.

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
Ethiopia	**69.6**	**8%**	**0.19%**
Kenya	188.1	11%	1.22%
Uganda	106.8	15%	1.22%
Tanzania	81.4	5%	0.54%

OVERVIEW OF ETHIOPIA'S AGRICULTURAL RESEARCH AGENCIES

Sixteen public agencies conduct agricultural R&D in Ethiopia. EIAR (employing 669 FTE researchers in 2011) is responsible for the overall coordination of agricultural research and also advises the federal and regional governments on the formulation of agricultural R&D–related policies. The institute, which is headquartered in Addis Ababa and operates 13 research centers across the country, focuses on crops, livestock, fisheries, forestry, and other natural resources. The eight RARIs are administered by regional state governments and, as a group, employ the largest share of agricultural researchers (981 FTEs in 2011). Ethiopia's higher education sector has also grown substantially since the turn of the millennium, in part due to the restructuring and expansion of the country's established colleges of agriculture. The two largest universities in terms of agricultural research capacity are Mekelle University, which operates the College of Dryland Agriculture and Natural Resources (44 FTEs in 2011) and College of Veterinary Medicine (15 FTEs in 2011), and Haramaya University, which operates the College of Agriculture (39 FTEs in 2011). Agricultural R&D performed by the nonprofit and for-profit private sector in Ethiopia is minimal.



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

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.
- **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 Ethiopia, visit* **www.asti.cgiar.org/ethiopia**.

ACRONYMS USED IN THIS FACTSHEET

AgGDP	Agricultural gross domestic product
ARTP	Agricultural Research and Training Project
ATA	Agricultural Transformation Agency
EIAR	Ethiopian Institute of Agricultural Research
FTE(s)	Full-time equivalent (researchers)
NARS	National agricultural research system
PPP(s)	Purchasing power parity (exchange rates)
RARI(s)	Regional agricultural research institute(s)
R&D	Research and development

ABOUT ASTI, IFPRI, AND EIAR

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 **Ethiopian Institute of Agricultural Research (EIAR)** is Ethiopia's principal agricultural research agency; the institute falls under the Ministry of Agriculture and Rural Development and focuses on crop, livestock, forestry, fisheries, and natural resources research.

ASTI/IFPRI and EIAR 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 EIAR.