BURUNDI

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KEY INDICATORS, 2000–2011

Total Public Agricultural Research Spending	2000		2008		2011
Burundian francs (million constant 2005 prices)	1,503.2		3,611.0		2,872.2
PPP dollars (million constant 2005 prices)	4.4	▲	10.5	▼	8.4
Overall Growth		**140%**		**–20%**	
Total Number of Public Agricultural Researchers					
Full-time equivalents (FTEs)	70.8	▲	100.1	▲	132.3
Overall Growth		**41%**		**32%**	
Agricultural Research Intensity					
Spending as a share of agricultural GDP	0.34%		0.79%		0.57%
FTE researchers per 100,000 farmers*	2.57		2.81		3.48

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

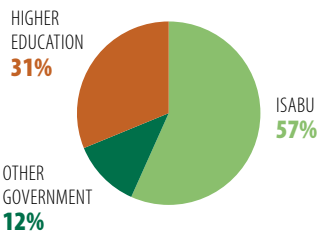
- The number of agricultural researchers increased rapidly between 2008 and 2011 due to a substantial influx of young scientists at ISABU and the return to Burundi of a large number of professors from universities abroad.
- The overall quality of agricultural R&D capacity remains very weak in terms of the number of agricultural researchers qualified to the PhD-degree level.
- Following a period of growth, reduced government and donor support caused overall spending levels in Burundi to decline during 2008–2011.

FINANCIAL RESOURCES, 2011

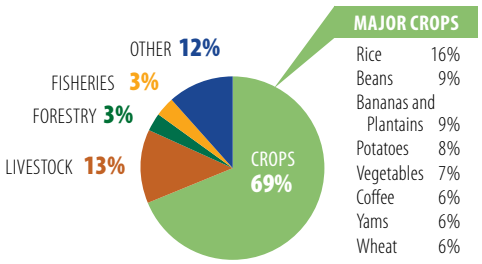
Spending Allocation	
Salaries	26%
Operating and program costs	65%
Capital investments	9%
Funding Sources	
Government	60%
Donors	25%
Sales of goods/services	15%

Note: Shares are based on data for ISABU only.

INSTITUTIONAL PROFILE, 2011



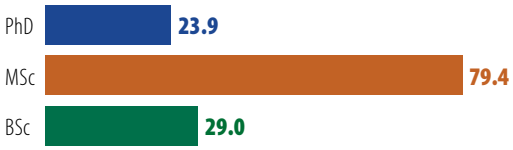
RESEARCH FOCUS, 2011



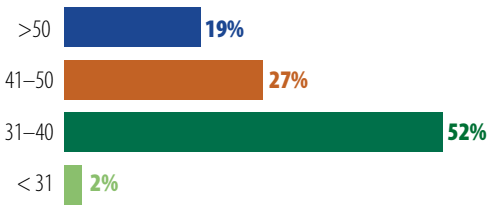
Notes: Major crops include those that are the focus of at least 5 percent of all crop researchers; 34 percent of total crop researchers focused on a wide variety of other crops.

RESEARCHER PROFILE, 2011

Number by qualification (FTEs)



Share by age group (years)



CHALLENGE

- With the 2010 ratification of a law changing the status of ISABU's personnel, the Institute has been able to improve the salary levels of its researchers; nevertheless, the base salary of ISABU's PhD-qualified researchers is still five times lower than that of professional staff at universities, making it extremely difficult for ISABU to attract researchers with doctorate degrees.

SOLUTION

- The existing salary gap between government and higher education agencies needs to be closed if the government agencies are to successfully build agricultural R&D capacity. Raising the retirement age to 65 (in line with universities) would allow ISABU's senior researchers a further five years to train and mentor younger scientists. A stricter enforcement of the policy that scientists return to ISABU upon completing their PhD training is needed.

The total number of researchers at ISABU and FACAGRO has increased considerably in recent years. A 2009 law improving the salary levels of university staff prompted most of the Burundian nationals who had left FACAGRO a few years prior for better paying positions at the National University of Rwanda to return to FACAGRO. In contrast, ISABU lost its very last PhD-qualified researcher in 2012. Currently, four ISABU researchers are pursuing PhD training abroad and are expected to return to Burundi soon. Despite the lack of PhD-qualified researchers at ISABU, those with MSc degrees increased from 23 in 2003 to 58 in 2011.

Number of agricultural researchers (FTEs)

	ISABU		FACAGRO	
	PhD	Total	PhD	Total
2008	2.0	63.0	1.8	6.0
2009	2.0	68.0	7.7	12.7
2010	2.0	76.0	9.8	16.8
2011	1.0	75.0	12.7	22.0

Note: FACAGRO employed 40 professional staff (including 23 with PhDs) in 2011. An adjustment was made to reflect the time they effectively spend on agricultural R&D.

POOLING SCARCE RESOURCES ACROSS AGENCIES

Although ISABU's pool of MSc- and BSc-level scientists is highly capable of effectively responding to farmers' needs, a minimum number of PhD-qualified scientists is necessary for the conduct of a viable research agenda; for effective communication with local and international stakeholders; and in securing external funding, especially through subregional or competitive funds.

The University of Burundi and the University of Ngozi employ 95 percent of Burundi's agricultural scientists with PhD degrees. Unfortunately, few of these academics have the necessary resources to allocate much of their time to research, since teaching and related administrative and supervisory responsibilities are their main focus. Moreover, both universities are challenged in terms of the required infrastructure and equipment to pursue agricultural research.

Given the tremendous constraints that agricultural R&D agencies in Burundi are facing, the scarce resources of universities and government agencies need to be pooled more effectively. By collectively identifying research priorities and sharing staff and infrastructure, these agencies could create synergies in conducting research and ultimately in generating outputs that would enhance the quantity and quality of agricultural production. The government has an important role to play in this regard in terms of providing the necessary policy environment to stimulate cooperation among the country's agricultural R&D agencies.

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)
Burundi	**132.3**	**32%**	**18%**
Rwanda	180.4	44%	12%
DR Congo	423.9	25%[a]	13%
Tanzania	814.8	18%	20%

[a] For DR Congo, growth is based on data for the 2009–2011 period.

OPPORTUNITY

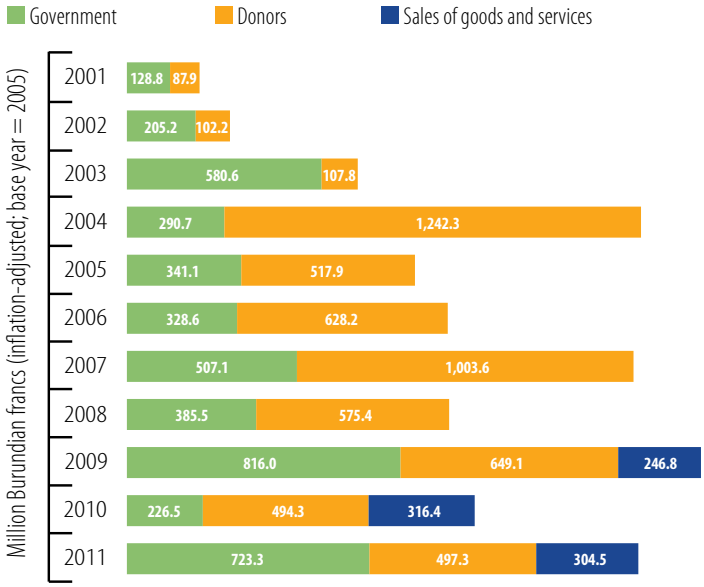
- According to the Global Hunger Index, Burundi has the world's highest chronic malnutrition rate and the second-highest level of hunger after DR Congo. However, the country's favorable climate offers great potential for agricultural development. With well-targeted investments and sound government policy, agricultural production could be increased to levels that would lift millions of smallholders out of poverty.

OBSERVATION

- Burundi's National Agricultural Investment Plan for 2012–2017 contains a well-defined set of priorities and investment targets to stimulate agricultural R&D and innovation. Regrettably, only 30 percent of the required funding for the R&D component of the Plan has been mobilized, making it extremely difficult for R&D agencies to reach the set targets. Long-term financial commitment is urgently needed from the national government, donors, and the private sector.

The 2003 signing of the peace agreement prompted a large influx of donor funding, leading to an overall increase in ISABU's spending on agricultural R&D. During 2004–2011, donors financed 56 percent of ISABU's expenditures, other than those related to salaries. Both donor and government funding, however, has exhibited considerable fluctuations over time.

Funding sources of ISABU's operating, program, and capital costs



ISABU'S RESEARCH FUNDING IS HIGHLY VOLATILE

ISABU's salary bill is entirely funded by the Burundian government. Support for operating and program costs and capital investments is derived from the government, donors, and the sale of goods and services. Volatility in yearly government and donor funding levels presents a major cause of uncertainty and inefficiency because it complicates and compromises long-term budget, staffing, and planning decisions, all of which affect the continuity and outcomes of research. Mitigating the effects of abrupt funding shifts is crucial, and highlights the need for greater funding diversity. ISABU's success in generating more than 20 percent of its 2009-2011 funding through the sale of goods and services is an encouraging sign.

BELGIAN SUPPORT TO AGRICULTURAL R&D

Belgium has traditionally been Burundi's principal donor for agricultural R&D. The *Institutional Support to ISABU* project, which began in 2010, assisted ISABU in developing a research master plan, a strategic vision for 2010–2015, and an action plan for institutional reform. The project improved the efficiency of the Institute's organizational structure and human resource management, and provided substantial funding for the rehabilitation of R&D infrastructure and equipment (that is, vehicles, laboratories, and information technology). In addition, the project funded five priority research programs and numerous smaller activities. In November 2011, all agriculture-related projects funded by Belgium were bundled in the *Institutional and Organizational Support Program to the Agricultural Sector* for the period 2011–2017. Belgium also plays a key role in funding postgraduate training for Burundian scientists at Belgian universities through CIALCA and BTC.

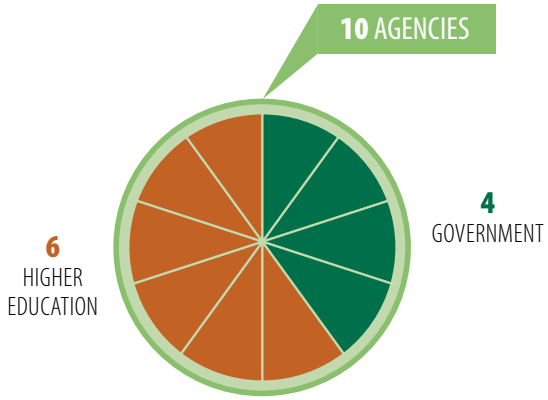
CROSS-COUNTRY COMPARISONS OF KEY INDICATORS *continued*

	Total spending, 2011 (million 2005 PPP dollars)	Overall spending growth, 2008–2011	Spending as a share of AgGDP, 2011
Burundi	**8.4**	**–20%**	**0.57%**
Rwanda	27.2	35%	0.69%
DR Congo	16.2	76%[b]	0.17%
Tanzania	81.4	5%	0.54%

[b.] For DR Congo, growth is based on data for the 2009–2011 period.

OVERVIEW OF BURUNDI'S AGRICULTURAL RESEARCH AGENCIES

Ten public agencies conduct agricultural R&D in Burundi. ISABU (employing 75 FTE researchers in 2011) is by far the largest agency and accounts for more than half the country's agricultural researchers (in FTEs). ISABU's research portfolio is built around four main thematic areas: crops, livestock, farming systems, and rural socioeconomics. ISABU also carries out soil analyses and plant-health diagnostics in its laboratories. Other government agencies involved in agricultural R&D include CNTA, LNV, and IRAZ, focusing on food technology, veterinary medicine, and bananas and taro, respectively. IRAZ has a regional mandate that also encompasses Rwanda and DR Congo. Burundi's higher education sector plays an important role in agricultural R&D through the University of Burundi and the University of Ngozi, both of which operate three units that conduct agricultural R&D. The largest are FACAGRO under the University of Burundi and CERADER under the University of Ngozi. Agricultural R&D conducted by the private for-profit sector in Burundi is negligible.



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

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 Burundi, visit* **www.asti.cgiar.org/burundi.**

ACRONYMS USED IN THIS FACTSHEET

AgGDP	Agricultural gross domestic product
BTC	Belgian Development Agency
CERADER	Agriculture and Rural Development Research Center
CIALCA	Consortium for Improving Agriculture-based Livelihoods in Central Africa
CNTA	National Food Technology Center
FACAGRO	Faculty of Agricultural Sciences (University of Burundi)
FTE(s)	Full-time equivalent (researchers)
IRAZ	Institute of Agronomic and Zootechnical Research
ISABU	Institute of Agricultural Science of Burundi
LNV	National Veterinary Laboratory
PPP(s)	Purchasing power parity (exchange rates)
R&D	Research and development

ABOUT ASTI, IFPRI, AND ISABU

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 **Institute of Agricultural Science of Burundi (ISABU)** is Burundi's principal agricultural research agency; the institute falls under the Ministry of Agriculture and Livestock and focuses on crop, livestock, farming system, and socioeconomic research.

ASTI/IFPRI and ISABU 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 ISABU.

* This December 2013 version reports FTE researchers per 100,000 farmers, which is an adjustment from the November 2013 version (which reported per thousand farmers).