Agricultural R&D Indicators Factsheet | February 2014

BURKINA FASO

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KEY INDICATORS, 2000–2011

Total Public Agricultural Research Spending	2000	2008	2011
CFA francs (million constant 2005 prices)	4,622.3	3,955.9	5,089.1
PPP dollars (million constant 2005 prices)	23.1	19.8	25.4
Overall Growth		**–14%**	**29%**
Total Number of Public Agricultural Researchers			
Full-time equivalents (FTEs)	209.4	246.4	218.0
Overall Growth		**18%**	**–12%**
Agricultural Research Intensity			
Spending as a share of agricultural GDP	0.80%	0.32%	0.42%
FTE researchers per 100,000 farmers	4.20	3.81	3.05

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

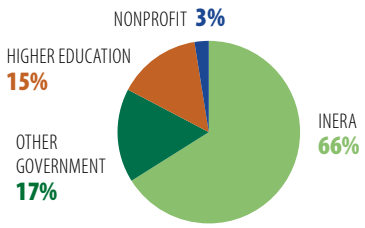
- Agricultural R&D spending in Burkina Faso has followed a highly erratic pattern in recent years. The government funds research staff salaries, but operating costs and capital investments are largely dependent on volatile donor funding.
- Underinvestment in agricultural R&D is serious. In 2011, Burkina Faso invested only 0.42 percent of its AgGDP in agricultural R&D, which is well below the recommended 1-percent target set by the NEPAD and the United Nations.
- The national number of agricultural researchers grew until 2006, but thereafter steadily declined. In 2011, the country employed 218 FTE researchers, roughly half of whom held PhD degrees.

FINANCIAL RESOURCES, 2011

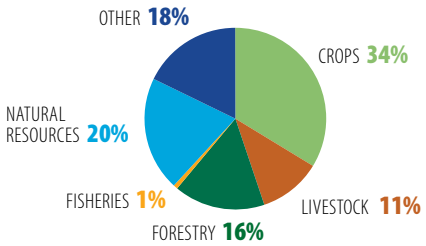
Spending Allocation	
Salaries	32%
Operating and program costs	68%
Capital investments	0%
Funding Sources	
Government	32%
Donors and development banks	58%
Sales of goods/services	10%

Note: Due to availability, financial data only include INERA and IRSAT.

INSTITUTIONAL PROFILE, 2011



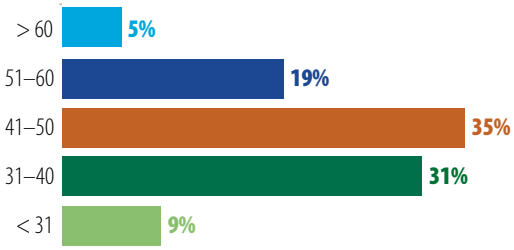
RESEARCH FOCUS, 2011



RESEARCHER PROFILE, 2011

Number by qualification (FTEs)

Share by age group (years)



Note: Due to lack of availability, data by age bracket exclude the higher education sector.

CHALLENGE

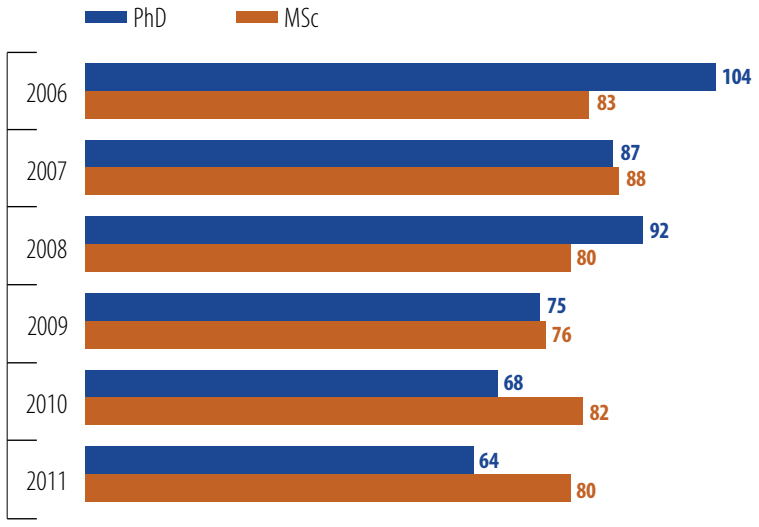
- INERA's research capacity has contracted since 2006 due to the combined effect of recruitment restrictions and the loss of many highly qualified researchers who have either retired or departed for more lucrative positions in the private sector, at international organizations, or in neighboring countries. INERA's current pool of researchers is inadequate, both in terms of numbers and skills mix, to enable the institute to effectively accomplish its mandate.

POLICY RESPONSE

- After years of restrictions, in 2013 the government approved large-scale staff recruitment at CNRST's institutes (including INERA and IRSAT). As a result, INERA has instituted a plan to recruit 30 young MSc- and PhD-qualified researchers per year over five years (2013–2017). It will be crucial that these young researchers receive training and mentoring to allow them to develop the requisite skills and experience needed to conduct effective research, and that appropriate conditions and incentives are established to encourage their long-term commitment to INERA.

Between 2006 and 2011, the number of researchers employed at INERA fell by nearly a quarter, and included 40 researchers qualified to the PhD degree level. As a result, the institute currently lacks a critical mass of specialized scientists in many areas. The shortage of horticultural, cotton, zoophysiology, and veterinary researchers is of particular concern.

Number of agricultural researchers at INERA by degree, 2006–2011 (FTEs)



Note: In 2011, INERA also employed 80 BSc-qualified technical support staff, but since they are not officially classified as researchers, they are excluded from this figure.

WAAPP SET TO REVERSE LOSSES IN RESEARCH CAPACITY

WAAPP is a subregional program co-financed by the World Bank, a multi-donor trust fund, and national governments for the purpose of increasing the productivity of priority crops in West Africa. It aims to facilitate regional cooperation in generating and disseminating agricultural technology and to establish national centers of specialization to strengthen the alignment of national and regional priorities. Burkina Faso was selected as home to the subregion's center of excellence for mangoes, onions, and tomatoes, and was allocated a grant of US$23 million over five years (2012–2016). INERA (focusing on production and technology transfer of these priority crops) and IRSAT (focusing on transformation of these crops) are the main beneficiaries of the research-related components of WAAPP.

WAAPP supports INERA and IRSAT in three main ways: by rehabilitating laboratories and equipment for research on the identified priority crops; by providing (limited) funding for research programs; and by investing in postgraduate training for young scientists. In March 2013, 26 young INERA researchers and technical support staff were identified for MSc (18) and PhD (8) training, both locally and in other West African countries. Many more are expected to take advantage of this opportunity in the coming years.

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)
Burkina Faso	**218.0**	**–12%**	**48%**
Mali	307.0	–4%	33%
Ghana	607.0	22%	38%
Senegal	112.2	–16%	70%

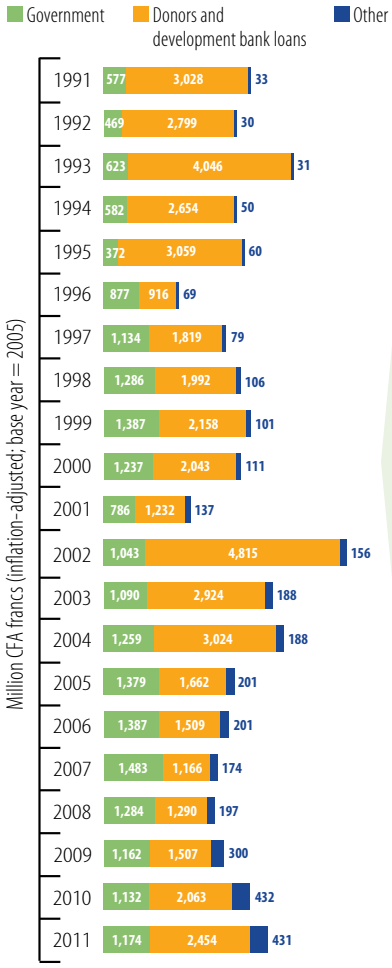
CHALLENGE

- Despite the recent influx of funding to support the recruitment of government-based researchers, their training, and upgrades of their research facilities (through WAAPP and other donor initiatives), the day-to-day costs of undertaking research programs remain severely underfunded and dependent on volatile donor contributions, predominantly through small-scale, mostly ad hoc projects.

POLICY OPTIONS

- The government needs to clearly identify long-term R&D priorities and design focused and coherent R&D programs accordingly. Donor and development bank funding needs to be more closely aligned with national priorities. Sustainable levels of government funding are key, not only to secure researchers' salaries, but also to support the multitude of other costs associated with running viable research programs. Finally, policy reform is needed to stimulate the diversification of funding sources, either by generating revenues through the sale of goods and services or by attracting private funding.

INERA's sources of funding, 1991–2011



INERA's annual funding is extremely volatile. World Bank loan-funded programs like PRA-I (1989–1996) and PNDSA-II (1998–2004) caused large spikes in investment levels after which INERA fell into financial hardship and uncertainty. WAAPP (2012–2017) will no doubt cause a sizable increase in INERA's total expenditure levels; however, while PRA-I and PNDSA-II comprised sizable research components, WAAPP does not. Funding volatility is a major cause of uncertainty and inefficiency because it complicates and compromises long-term budget, staffing, and planning decisions, all of which negatively affect the short-term continuity of research programs and the long-term release of new varieties and technologies.

STRATEGIES TO STRENGTHEN AGRICULTURAL RESEARCH

Nearly all government funding allocated to INERA and IRSAT is spent on staff salaries. As a result, the actual costs of running research programs and maintaining and developing infrastructure and equipment are almost entirely dependent on development bank loans and donor contributions (from the Food and Agriculture Organization of the United Nations, AusAid, McKnight Foundation, Department for International Development, France, United States Agency for International Development, and others). Since the completion of PNDSA–II in 2004, no capital investments have been made to maintain or upgrade research laboratories and equipment. Government agencies lack modern equipment, hardware, and software; much of the equipment they do have is in disrepair; and they are confronted with frequent power outages, slow and unreliable Internet connections, and limited space in laboratories, all of which make day-to-day operations a real challenge and, understandably, have a detrimental impact on morale. Facilities upgrades funded by WAAPP are a step in the right direction, but much more is needed.

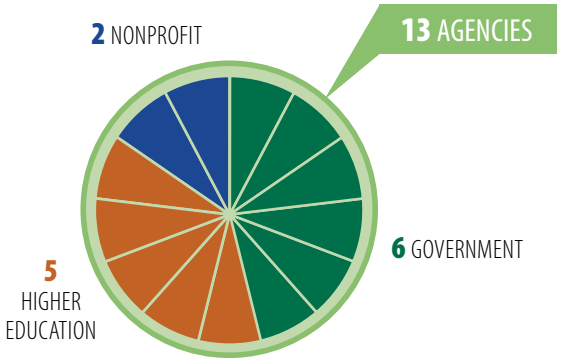
Although INERA and IRSAT officially have financial autonomy, any revenue they generated through the internal sale of goods and services was channeled back to the national Treasury until very recently, creating a disincentive for researchers to develop this avenue as an income stream. Given Burkina Faso's severe underinvestment in agricultural R&D, regulatory reforms have been taken to end this practice and encourage government R&D institutes to expand this income source, not only to increase overall funding levels, but also to buffer shocks arising from funding volatility.

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
Burkina Faso	**25.4**	**29%**	**0.42%**
Mali	33.6	33%	0.61%
Ghana	68.1	18%	0.69%
Senegal	24.8	4%	0.83%

OVERVIEW OF BURKINA FASO'S AGRICULTURAL RESEARCH AGENCIES

Fifteen public agencies conduct agricultural R&D in Burkina Faso. INERA (employing 144 FTE researchers in 2011) is the largest agency, accounting for about two-thirds of the country's agricultural researchers (in FTEs). Aside from its headquarters in Ouagadougou, INERA comprises an environmental and agricultural research and training center located in Kamboinsé, and five regional agricultural and environmental research centers distributed among the country's agroecological zones. INERA's research programs are structured around four themes: animal production, crop production, forestry, and natural resource and farming-system management. Five other government agencies conduct agricultural R&D, the largest of which include IRSAT (21 FTEs in 2011) and CNSF (8 FTEs). IRSAT and CNSF focus on food technology and forestry research, respectively. The higher education sector plays an increasingly important role in agricultural R&D in Burkina Faso. The University of Ouagadougou (19 FTEs in 2011) is by far the largest agency in this category. Two nonprofit agencies (APESS and CEAS) conduct agricultural R&D, albeit on an ad hoc basis. Private for-profit research in Burkina Faso is limited, although SOFITEX plays an important role in cotton research.



For a complete list of the agencies included in ASTI's dataset for Burkina Faso, visit **www.asti.cgiar.org/burkina-faso.**

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 Burkina Faso, visit* **www.asti.cgiar.org/burkina-faso.**

ACRONYMS USED IN THIS FACTSHEET

AgGDP	Agricultural gross domestic product
APESS	Association for the Promotion of Livestock in the Sahel and the Savanna
CEAS	Albert Schweitzer Ecological Center
CNRST	National Center of Scientific and Technological Research
CNSF	National Forest Seed Center
FTE(s)	Full-time equivalent (researchers)
INERA	Environment and Agricultural Research Institute
IRSAT	Applied Science and Technology Research Institute
NEPAD	New Partnership for Africa's Development
PPP(s)	Purchasing power parity (exchange rates)
R&D	Research and development
SOFITEX	Burkinabe Company for Textile Fibers
WAAPP	West African Agricultural Productivity Program

ABOUT ASTI, IFPRI, AND INERA

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 **Environment and Agricultural Research Institute (INERA)** is Burkina Faso's principal agricultural research agency; it is placed under the National Center of Scientific and Technological Research (CNRST), which in turn falls under the Ministry of Secondary and Higher Education and Scientific Research.

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