

BOTSWANA

Kathleen Flaherty and Charles Mazereku

KEY INDICATORS, 2000–2011

Total Public Agricultural Research Spending	2000		2008		2011
Pula (million constant 2005 prices)	45.4		58.1		42.4
PPP dollars (million constant 2005 prices)	18.8	↑	24.0	↓	17.5
Overall Growth		28%		-27%	
Total Number of Public Agricultural Researchers					
Full-time equivalents (FTEs)	67.6	↑	97.9	↑	123.8
Overall Growth		45%		26%	
Agricultural Research Intensity					
Spending as a share of agricultural GDP	4.32%		4.03%		2.44%
FTE researchers per 100,000 farmers	24.06		32.01		38.45

Note: Acronyms, definitions, and an overview of agricultural R&D agencies are available on page 2.

Overall, the number of researchers holding PhD degrees doubled in Botswana during 2000–2011, and the number of researchers qualified to the BSc-degree level tripled.

Agricultural R&D in Botswana is almost entirely funded by the government. Spending on operating and program costs increased significantly during 2005–2007, but contracted again from 2008, when government funding to many public-sector agencies was cut due to spiraling inflation.

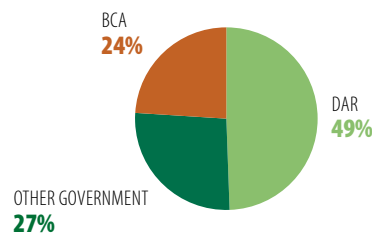
Botswana invests a relatively high share of its agricultural GDP in agricultural research. Nevertheless, such a high intensity ratio is not uncommon in countries with small populations and relatively high per capita incomes. Small countries are not able to benefit from economies of scale to the degree that larger countries can, so basic research infrastructure and staffing constitute greater shares of investment.

FINANCIAL RESOURCES, 2011

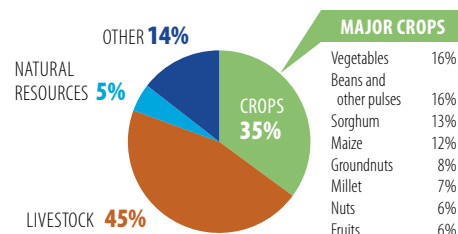
Spending Allocation	
Salaries	62%
Operating and program costs	29%
Capital investments	9%
Funding Sources	
Government	91%
Sale of goods and services	9%

Note: Shares are based on data for DAR only.

INSTITUTIONAL PROFILE, 2011



RESEARCH FOCUS, 2011

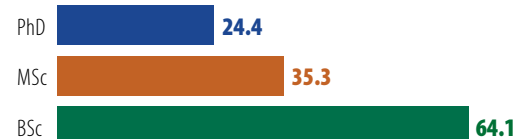


Notes: Major crops include those that are the focus of at least 5 percent of all crop researchers; 16 percent of all crop researchers focused on a wide variety of other crops.

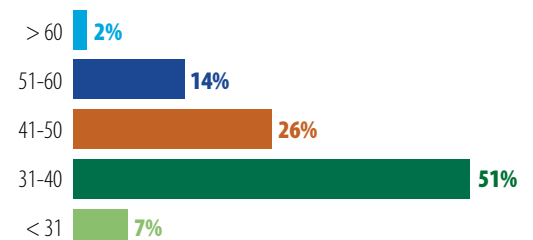
RESEARCHER PROFILE, 2011



Number by qualification (FTEs)

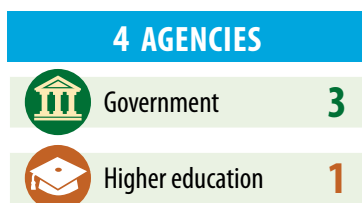


Share by age group (years)



OVERVIEW OF BOTSWANA'S AGRICULTURAL RESEARCH AGENCIES

Four agencies conduct agricultural R&D in Botswana. The main agency, DAR (employing 61 FTEs in 2011), accounts for half of the country's researchers and holds a broad mandate covering crop and livestock research. DAR is structured around three divisions focusing on arable research, animal production and range research, and support services. The government agency NVL (29 FTEs) conducts livestock research, whereas NFTRC (4 FTEs) focuses primarily on food technology. The higher education agency BCA (30 FTEs) conducts crop, livestock, natural resources, and socioeconomic research. One nonprofit agency, VPRD, conducted some agricultural research in the past, but lacked research funding during 2010 and 2011. Research conducted by the private-for-profit sector in Botswana is minimal.



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

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 Botswana, visit www.asti.cgiar.org/botswana.

ACRONYMS USED IN THIS FACTSHEET

BCA	Botswana College of Agriculture
DAR	Department of Agricultural Research
FTE(s)	Full-time equivalent (researchers)
NFTRC	National Food Technology Research Centre
NVL	National Veterinary Laboratory
PPP(s)	Purchasing power parity (exchange rates)
R&D	Research and development
VPRD	Veld Products Research and Development

ABOUT ASTI, IFPRI, AND DAR

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 **Department of Agricultural Research (DAR)** is Botswana's principal agricultural R&D agency. It falls under the administrative coordination of the Ministry of Agriculture. In addition to holding a broad mandate covering crop and livestock management research, DAR provides research support services in seed production and certification; soil, plant, and feed analysis; and genetic resources conservation.

ASTI/IFPRI and DAR 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 DAR.