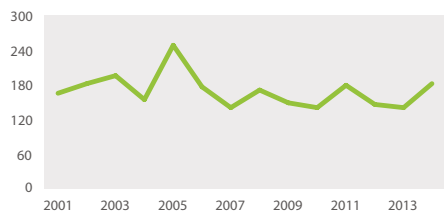


NAMIBIA

Nienke Beintema, Katrina Shiningavamwe, Sheehamandje Ipinge, and Sandra Perez

AGRICULTURAL RESEARCH SPENDING



Million Namibian dollars
(2011 constant prices)

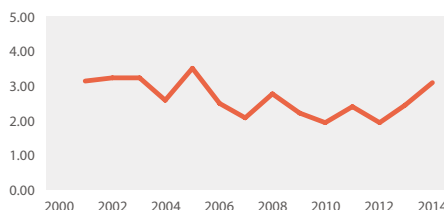
180.9

Million PPP dollars
(2011 constant prices)

38.8

	NAMIBIA	BOTSWANA	MALAWI	MOZAMBIQUE
Million Namibian dollars (2011 constant prices)	180.9			
Million PPP dollars (2011 constant prices)	38.8	21.3	28.1	29.3

SPENDING INTENSITY

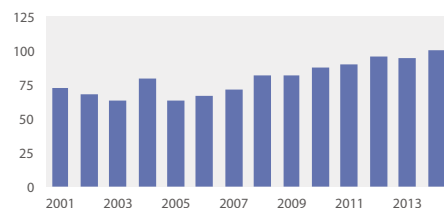


Agricultural research
spending as a share
of AgGDP

3.09%

	NAMIBIA	BOTSWANA	MALAWI	MOZAMBIQUE
Agricultural research spending as a share of AgGDP	3.09%	2.92%	0.53%	0.36%

AGRICULTURAL RESEARCHERS



Full-time
equivalents

99.7

Share of researchers with
MSc and PhD degrees

58%

	NAMIBIA	BOTSWANA	MALAWI	MOZAMBIQUE
Full-time equivalents	99.7	137.8	158.3	308.4
Share of researchers with MSc and PhD degrees	58%	54%	81%	56%

Notes: Data above are for 2014. Research conducted by the private for-profit sector is excluded from this factsheet due to lack of available data. Information on access to further resources, data procedures and methodologies, and acronyms and definitions are provided on Page 4. See www.asti.cgiar.org/Namibia/directory for an overview of Namibia's agricultural R&D agencies.



Volatile spending growth

Namibia's agricultural research spending was volatile during 2001–2014, mostly due to fluctuations in the government's contributions to DARD, the country's main agricultural research agency. In 2014, Namibia invested about 3 percent of its AgGDP in agricultural research, which is not uncommon for arid countries with small populations. After a short period of decline in the early 2000s, the country's total number of agricultural researchers rose steadily, mostly in response to growth at the Fisheries Department and at UNAM-FANR.



Restructuring stalled

In 2009, the government approved plans to restructure DARD as a semiautonomous research institute as a means of affording it greater flexibility in recruiting staff offering competitive salary packages. This new status is a strong first step toward addressing DARD's current operating constraints. As of 2016, however, this restructuring is still pending and it is uncertain if it will happen in the near future.



Funding diversity lacking

DARD is entirely funded by the government through a process that often impedes its long-term planning and can interfere with the critical timing of research activities. DARD generates some income through the sale of goods and services, but these funds must be channeled back to the national treasury. Plans to transform DARD into a semiautonomous entity would give it the flexibility to develop this revenue stream, retain any resulting income, and directly source other funding sources, such as research grants.

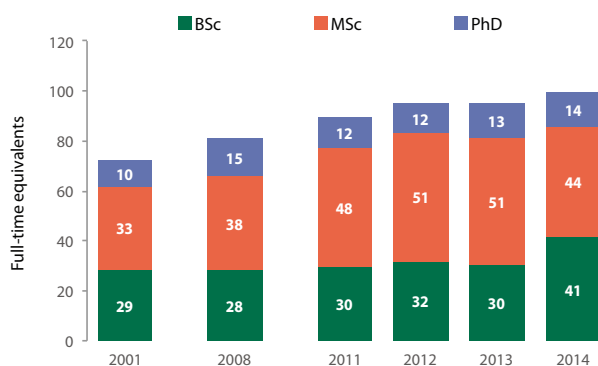


Serious capacity constraints

Of the few PhD-qualified researchers employed at Namibian agricultural research agencies, many are nearing retirement. A lack of local PhD programs at the University of Namibia, and the fact that salary levels are uncompetitive and promotional opportunities limited—particularly at DARD—exacerbate this situation. The planned restructuring of DARD will give it the necessary flexibility to set competitive salary levels, thereby going a long way to removing the impediment to attracting and retaining well-qualified staff.

Namibia's agricultural researchers by qualification level

The number of agricultural researchers employed in Namibia grew by 12 percent during 2011–2014, predominantly driven by an influx of BSc-qualified researchers at the Department of Fisheries. The number of PhD-qualified researchers remained fairly constant during this period, whereas the number of researchers with MSc degrees declined slightly.



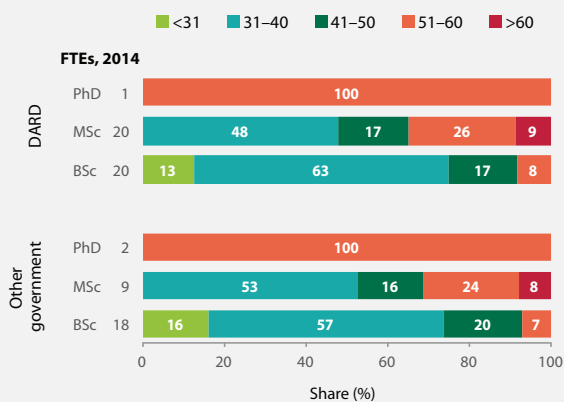
PhD-qualified and total researchers at DARD and UNAM-FANR

During 2001–2014, the number of FTE researchers employed at UNAM-FANR rose substantially, while the number employed at DARD fell. As of 2014, only one PhD-qualified researcher (in headcounts) remained at DARD, but the number employed at UNAM-FANR almost doubled during 2001–2014, to reach 9.

	DARD			UNAM-FANR		
	FTE researchers	PhD	Total	PhD share	PhD	Total
2001	2	48	4%	5	9	48%
2008	5	41	13%	5	19	24%
2011	2	40	4%	6	27	23%
2014	1	41	2%	9	24	36%

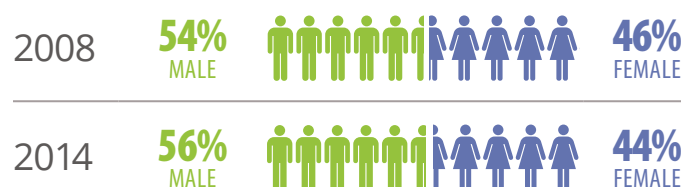
Namibia's agricultural researchers by age bracket

As of 2014, about 60 percent of Namibia's government-based researchers were in their 20s or 30s. In contrast, all the PhD-qualified researchers were in their 50s.



Namibia's share of female researchers

The share of female researchers declined slightly during 2008–2014, from 46 to 44 percent. As of 2014, the share of female researchers with PhD degrees was considerably lower than the shares of female researchers with either BSc or MSc degrees. Female participation also declined with age.



By qualification level, 2014

BSc	51%	MSc	46%	PhD	17%
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By age bracket, 2014

< 41	58%	41–50	46%	> 50	24%
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MSc- and PhD-qualified agricultural researchers at DARD and UNAM-FANR by discipline

In 2014, DARD and UNAM-FANR together employed 5 animal nutritionists and 5 soil scientists, representing 13–14 percent each of the total MSc- and PhD-qualified researchers that year. Fisheries, plant breeding/genetics, and socioeconomics were also strong disciplines, accounting for 8–9 percent of all MSc- and PhD-qualified researchers.

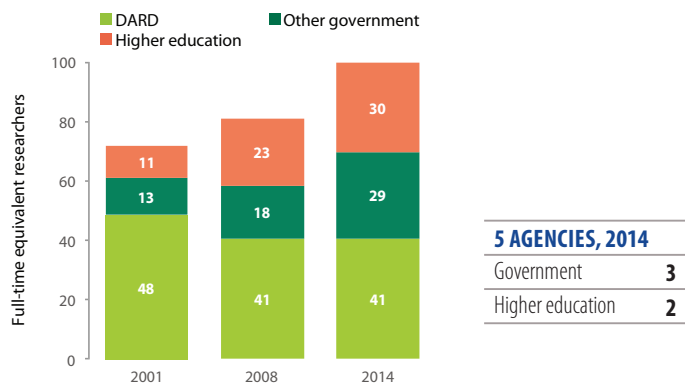
Agricultural researchers, 2014	FTEs		Share (%)	
	MSc	PhD	MSc	PhD
Plant breeding/genetics (incl. biotechnology)	3	0.4	9	5
Plant pathology	1	–	4	–
Plant physiology	0.4	–	1	–
Other crop sciences	1	–	3	–
Animal breeding/genetics	–	1	–	14
Animal husbandry	3	–	9	–
Animal nutrition	5	–	18	–
Dairy science	1	–	3	–
Poultry	0.4	–	1	–
Veterinary medicine	1	1	3	14
Zoology/entomology	1	–	3	–
Other animal and livestock	1	–	3	–
Forestry and agroforestry	2	0.4	5	5

Agricultural researchers, 2014	FTEs		Share (%)	
	MSc	PhD	MSc	PhD
Fisheries and aquatic resources	2	1	8	14
Soil sciences	4	1	12	16
Natural resources management	2	0	6	5
Water and irrigation management	–	0	–	5
Ecology	0.4	–	1	–
Biodiversity conservation	1	–	3	–
Food sciences and nutrition	–	2	–	19
Socioeconomics (incl. agricultural economics)	3	0.4	9	5
Extension and education	1	–	3	–
Other sciences	4	3	12	28
Total	35	12	100	100

Note: The Departments of Fisheries and Forestry were excluded due to lack of available data.

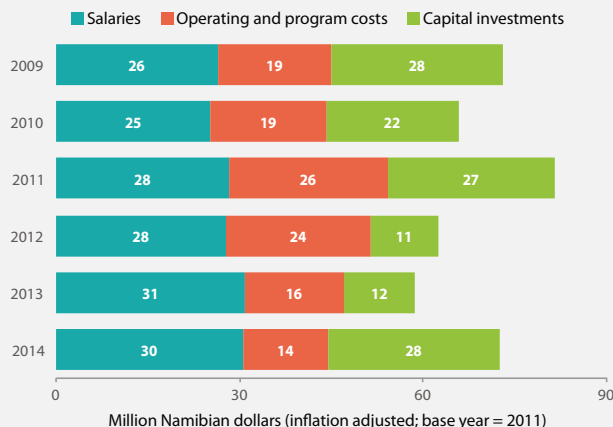
Institutional composition of Namibia's agricultural research

The country's overall institutional composition of agricultural research changed little from 2001 onward, but the weighting across categories shifted. DARD's share of agricultural researchers fell from 67 percent in 2001 to 41 percent in 2014, whereas the higher education sector—dominated by UNAM-FANR—doubled its share, from 15 to 30 percent.



DARD's spending by cost category

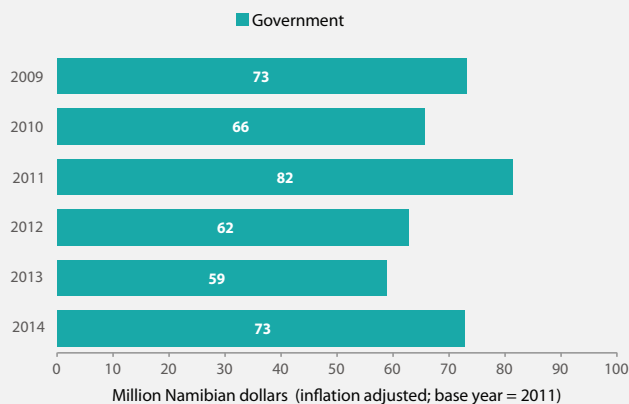
During 2009–2014, capital investments at DARD were considerable, accounting for about one-quarter of total spending on average during 2009–2014. This high share was driven by the construction of housing at regional research stations along with the development of plans for new headquarters.



Note: The financial data are adjusted to account for DARD researchers spending, on average, 85 percent of their time on research.

DARD's funding sources

DARD receives 100 percent of its funding from the government. Unlike most other African NARIs, the department receives no funding from donor organizations nor does it generate own income through the sales of goods and services.



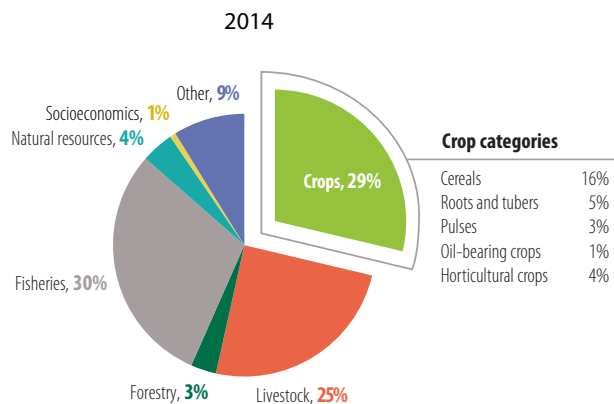
Government budget allocations versus actual disbursements to DARD

On average, DARD received about 80 percent of the government's approved budget allocation during 2009–2014.

	Million Namibian dollars (in current prices)		
	Budget	Disbursed	Shortfall
2009	105	80	–24%
2010	92	75	–19%
2011	125	96	–23%
2012	96	83	–14%
2013	112	87	–23%
2014	163	120	–27%
Average	115	90	–22%

Namibia's agricultural researchers by area of focus

As of 2014, only 29 percent of the country's FTE researchers conducted crop research. Fisheries (30 percent) and livestock (25 percent) are other prominent areas of research. Major crops under investigation included the cereals millet, rice, sorghum, maize, and barley, along with sweet potatoes, cassava, vegetables, and fruits.



DARD and UNAM-FANR's recent peer-reviewed publications

In addition to publishing two books and three book chapters during 2012–2014, DARD and UNAM-FANR published an average of nine articles per year, primarily in regional and international journals. Publications per FTE researcher averaged 0.2 per year.

Type	Number of publications, 2012–2014 annual average		
	DARD	UNAM-FANR	Per FTE researcher
Journal articles			
International	0.3	4.3	0.072
Regional	0.3	3.7	0.062
National	2.0	0.7	0.041
Books	0.7	–	0.010
Book chapters	0.7	0.3	0.015
Total	4.0	9.0	0.200

Resources for Namibia

This factsheet presents recent data on the performance of agricultural research in Namibia, primarily focusing on key financial, human resource, institutional, and output indicators, while also highlighting relevant trends, challenges, and institutional changes. Additional resources are available at www.asti.cgiar.org and include:



ASTI's **interactive country page** for Namibia features national agricultural research investment and capacity data, a data exploration and download tool, as well as access to a variety of country publications.



ASTI's **benchmarking tool** allows key agricultural research indicators to be ranked and compared across African countries.



ASTI's **data download tool** provides access to more in-depth ASTI datasets and graphs for Namibia and many other countries.



ASTI's **agency directory** provides a view of agencies that conduct agricultural research in Namibia, along with their locations and key agency-level indicators.

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ASTI led by IFPRI

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NAMIBIA

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Key Indicators Financial Resources Human Resources Research Focus Regional comparison

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.
- ▶ **Agricultural research** includes research conducted by the government, higher education, and nonprofit sectors; research conducted by the private for-profit sector is excluded due to lack of available data.
- ▶ 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 2011 local currencies and **2011 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 **decimal rounding** can cause totals to be one point higher or lower than the sum of their parts.



For more information on ASTI's data procedures and methodology, visit www.asti.cgiar.org/methodology.

Acronyms

FTE(s)	full-time equivalent(s)
DARD	Directorate of Agricultural Research and Development
NARI(s)	national agricultural research institute(s)
PPP(s)	purchasing power parity (exchange rates)
R&D	research and development
UNAM-FANR	University of Namibia, Faculty of Agriculture and Natural Resources

ABOUT ASTI, IFPRI, AND DARD

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 and Development (DARD)**, under the Ministry of Agriculture, Water and Forestry, is Namibia's principal agricultural research agency. Its mandate encompasses crop, livestock and natural resource research within the communal and commercial sector.

ASTI/IFPRI and DARD gratefully acknowledge participating agricultural R&D agencies for their contributions to the data collection and preparation of this factsheet. ASTI also acknowledges the Bill & Melinda Gates Foundation and CGIAR Research Program on Policies, Institutions, and Markets for their 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 DARD.

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