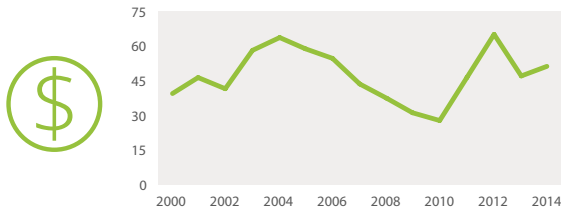




THE GAMBIA

Nienke Beintema, Demba Jallow, and Sandra Perez

AGRICULTURAL RESEARCH SPENDING



Million dalasis
(2011 constant prices)

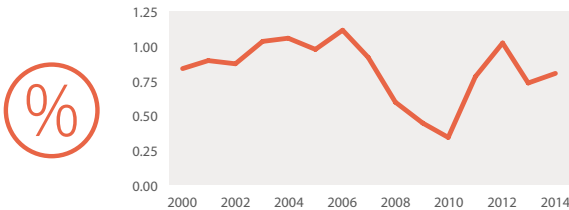
50.9

Million PPP dollars
(2011 constant prices)

5.1

	THE GAMBIA	GHANA	SENEGAL	SIERRA LEONE
Million dalasis (2011 constant prices)	50.9			
Million PPP dollars (2011 constant prices)	5.1	197.4	51.3	15.3

SPENDING INTENSITY

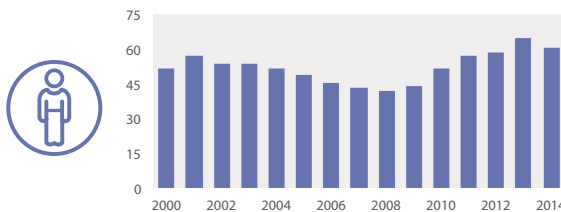


Agricultural research
spending as a share
of AgGDP

0.80%

	THE GAMBIA	GHANA	SENEGAL	SIERRA LEONE
Agricultural research spending as a share of AgGDP	0.80%	0.99%	1.15%	0.24%

AGRICULTURAL RESEARCHERS



Full-time
equivalents

60.4

Share of researchers with
MSc and PhD degrees

72%

	THE GAMBIA	GHANA	SENEGAL	SIERRA LEONE
Full-time equivalents	60.4	575.0	124.4	123.7
Share of researchers with MSc and PhD degrees	72%	95%	100%	73%

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/thegambia/directory for an overview of The Gambia's agricultural R&D agencies.



Volatile research spending

Over time, agricultural research funding in The Gambia has been volatile and highly donor-dependent. Spending increased from 2010 with the initiation of activities under WAAPP to enhance the country's research on rice and other cereals. The World Bank loan-funded project focuses on capacity building and technology generation and adoption. Limited growth in the country's total number of researchers mostly stemmed from increased capacity within the government sector. Capacity in the higher education sector is very small.



Underinvestment at NARI

NARI's funding is primarily provided by the government, mostly for salaries. The institute depends on donor funding to cover essential operating costs and capital investments, but spending in these areas has fluctuated over time. In particular, capital investments were very low during 2009–2011, causing infrastructure and equipment to deteriorate. Although WAAPP is providing some funding for the rehabilitation of facilities, funding for infrastructure is still needed, particularly for laboratory space and equipment.



Capacity strengthening

As of 2011, only 9 percent of the country's agricultural researchers were qualified to the PhD degree level. This share is one of the lowest among African countries and is of concern given that a critical mass of PhD-qualified researchers is necessary to ensure the quality and effectiveness of research. WAAPP will assist with some degree-level training, but short-term on the job training is also needed. Within NARI, WAAPP is sponsoring three PhD, four MSc, and seven BSc degrees.

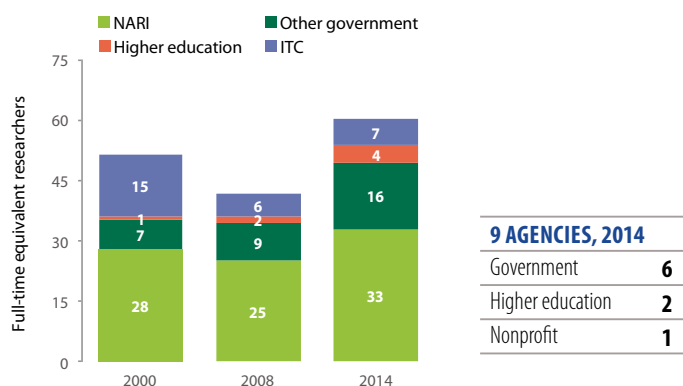


Aging researcher capacity

While The Gambia's total number of agricultural researchers has remained relatively stable over time, a large number of senior researchers are set to retire. Maintaining high-quality research and avoiding capacity erosion will be crucial challenges in the coming years.

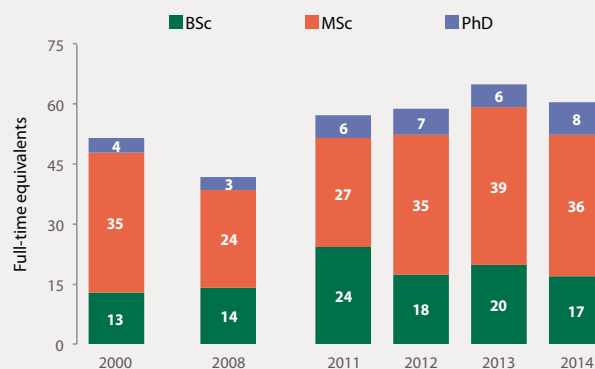
Institutional composition of The Gambia's agricultural research

The overall institutional composition of the country's research has changed little since 2000. The majority of FTE researchers are employed at the country's main agricultural research agency, NARI, and at five other government agencies, as well as at ITC, which focuses on trypanosomiasis research. The higher education sector in The Gambia is very small.



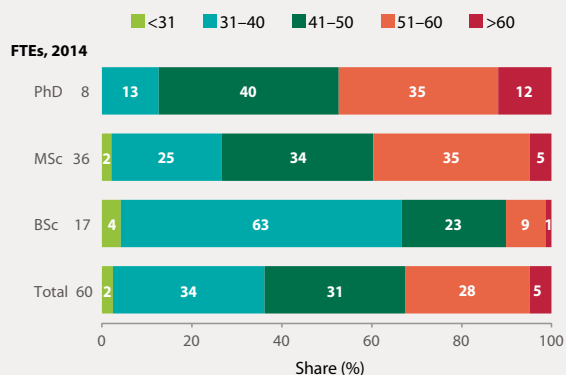
The Gambia's agricultural researchers by qualification level

The Gambia's total number of agricultural researchers remained fairly constant around 60 FTEs during 2011–2014. BSc-qualified researcher numbers declined during this period, MSc- and PhD-qualified researcher numbers rose. The country lacks a critical mass of researchers with PhD degrees.



The Gambia's agricultural researchers by age bracket

As of 2014, the distribution of agricultural researchers by age bracket was fairly even, with about one-third of the total under 41 years of age, one-third in their 40s, and one-third over 50 years old. Unsurprisingly, the more qualified researchers were generally older.



The Gambia's share of female researchers

The Gambia's share of female researchers is one of the lowest in the region and declined from 12 percent in 2008 to only 7 percent in 2014, reflecting stronger recruitment of men over women since 2008. In 2014, none of the country's 8 FTE researchers with PhD degrees was female.



By qualification level, 2014

BSc	8%	MSc	8%	PhD	—
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By age bracket, 2014

< 41	5%	41–50	8%	> 50	7%
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NARI's MSc- and PhD-qualified agricultural researchers by discipline

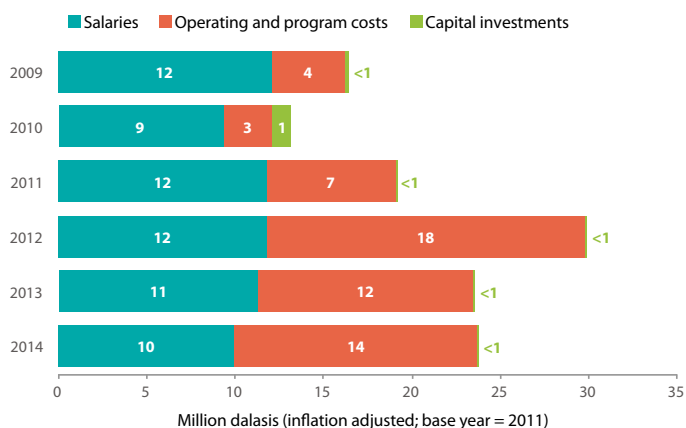
Of the two PhD-qualified researchers employed at NARI in 2014, one was an animal nutritionist and one a soil scientist. The 21 MSc-qualified researchers employed at the institute in 2014 were trained in a variety of crop, livestock, and other disciplines.

Agricultural researchers, 2014	FTEs		Share (%)	
	MSc	PhD	MSc	PhD
Plant breeding/genetics (incl. biotechnology)	2	—	10	—
Plant physiology	1	—	5	—
Seed science and technology	1	—	5	—
Other crop sciences	3	—	14	—
Animal nutrition	1	1	5	50
Zoology/entomology	2	—	10	—
Other animal and livestock	—	—	—	—
Forestry and agroforestry	1	—	5	—
Fisheries and aquatic resources	1	—	5	—
Soil sciences	1	1	5	50

Agricultural researchers, 2014	FTEs		Share (%)	
	MSc	PhD	MSc	PhD
Natural resources management	—	—	—	—
Water and irrigation management	—	—	—	—
Ecology	—	—	—	—
Biodiversity conservation	—	—	—	—
Food sciences and nutrition	2	—	10	—
Socioeconomics (incl. agricultural economics)	2	—	10	—
Extension and education	—	—	—	—
Other sciences	4	—	19	—
Total	21	2	100	100

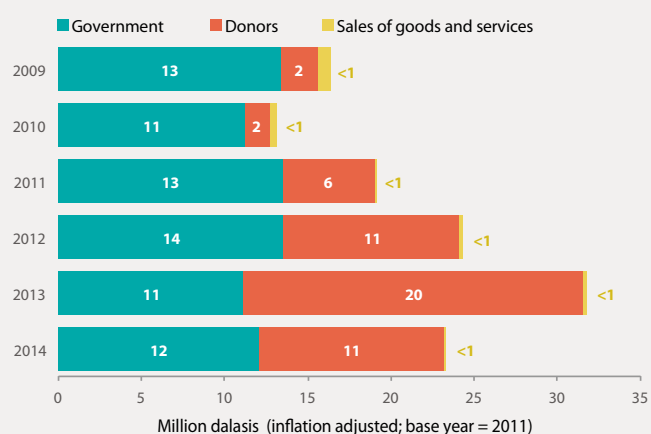
NARI's spending by cost category

NARI's operating and program costs rose substantially during 2009–2014, largely due to a World Bank grant for research activities under WAAPP. Capital investments were negligible, but have increased substantially since 2014 due to the rehabilitation of NARI offices, laboratories, and staff quarters through WAAPP.



NARI's funding sources

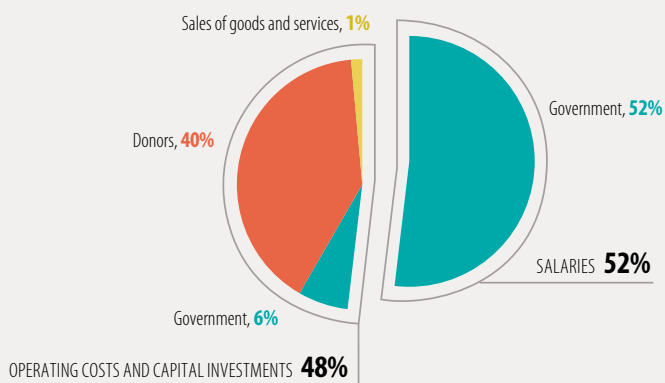
Government funding to NARI has remained relatively stable over time, while donor funding exhibits considerable fluctuation from one year to the next. The 2011 initiation of WAAPP—a US\$12 million World Bank grant in support of the country's agricultural sector—prompted a large influx of funds to NARI.



NARI's spending and funding compared

Government funding to NARI covers the institute's salary costs and only a small portion of operating costs. The bulk of NARI's operating and program costs as well as capital investments are financed through grants from donors. NARI also generates some revenue through the provision of laboratory services.

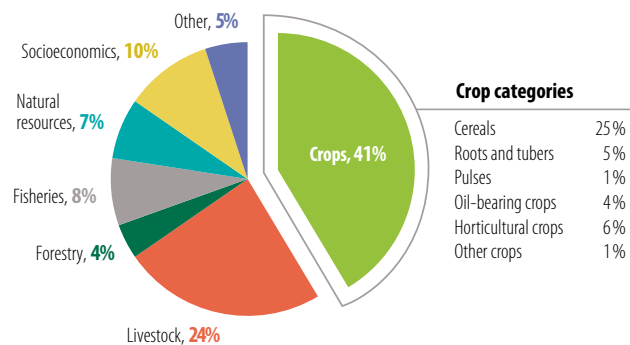
2009–2014 average



National agricultural researchers by area of focus

In 2014, 41 percent of the country's FTE researchers conducted crop research, whereas 24 percent undertook livestock research. Major crops under investigation were rice, maize, and cassava, followed by vegetables and groundnuts.

2014



Crop categories

Cereals	25%
Roots and tubers	5%
Pulses	1%
Oil-bearing crops	4%
Horticultural crops	6%
Other crops	1%

NARI's recently released crop varieties

NARI released or adapted 17 new crop varieties during 2012–2014, the majority of which were rice, maize, and sorghum. The institute also released 2 varieties of fonio.

Crop	Number of varieties, 2012–2014
Rice	6
Maize	5
Sorghum	4
Fonio	2
Total	17

NARI's recent peer-reviewed publications

During 2012–2014, NARI published an average of 4 articles per year in international and regional journals. The institute published no books or book chapters. Publications per researcher averaged 0.1 per year.

Type	Number of publications, 2012–2014 annual average	Per FTE researcher
Journal articles		
International	2.7	0.076
Regional	1.3	0.038
National	0.0	0.000
Books	0.0	0.000
Book chapters	0.0	0.000
Total	4.0	0.114

Resources for The Gambia

This factsheet presents recent data on the performance of agricultural research in The Gambia, 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 The Gambia 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 The Gambia and many other countries.



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

The screenshot shows the ASTI website interface for Gambia. At the top, it says 'ASTI led by IFPRI' and 'AGRICULTURAL SCIENCE AND TECHNOLOGY INDICATORS'. Below that, there are navigation tabs for Home, Data, Regions, Publications, Projects, News, Partners, and About. A 'Country Selection' dropdown is set to 'Gambia'. The main content area features a map of Gambia and three columns of text:

- Visible research spending:** Over time, agriculture research funding in The Gambia has been volatile and highly donor-dependent. Spending increased from 2010 with the initiation of activities under WAAPP to enhance the country's research on rice and other cereals. The World Bank re-structured project focuses on capacity building and technology generation and adoption. Limited growth in the country's total number of researchers mostly stemmed from increased capacity across the government sector. Capacity in the higher education sector is very small.
- Underinvestment at NARI:** NARI's funding is primarily provided by the government, mostly for salaries. The Institute depends on donor funding to cover essential operating costs and capital investments, but spending in these areas has fluctuated over time. In particular, capital investments were very low during 2010-2011. Ongoing infrastructure and equipment to deteriorate. Although WAAPP is providing some funding for the rehabilitation of facilities, funding for infrastructure is still needed, particularly for laboratory space and equipment.
- Capacity strengthening:** As of 2011, only 9 percent of the country's agricultural researchers were qualified to the PhD degree level. This share is one of the lowest among African countries and is of concern given that a critical mass of PhD-qualified researchers is necessary to ensure the quality and effectiveness of research. WAAPP and assist with some degree level training, but shortfalls on the side training is also needed. WAAPP is sponsoring three PhD, four MSc, and seven BSc degrees.

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

AgGDP	agricultural gross domestic product
FTE(s)	full-time equivalent(s)
ITC	International Trypanotolerance Center
NARI	National Agricultural Research Institute
PPP(s)	purchasing power parity (exchange rates)
R&D	research and development
WAAPP	West Africa Agricultural Productivity Program

ABOUT ASTI, IFPRI, AND NARI

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 **National Agricultural Research Institute (NARI)** is The Gambia's main agricultural R&D agency; the institute falls under the Ministry of Agriculture and conducts crop, livestock, forestry, fisheries, and natural resources research.

ASTI/IFPRI and NARI 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 NARI.

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