

# NIGERIA

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## KEY INDICATORS, 2000–2011

Total Public Agricultural Research Spending	2000		2008		2011
Naira (million constant 2005 prices)	11,459.8		24,233.9		23,723.7
PPP dollars (million constant 2005 prices)	190.3		402.3		393.9
<b>Overall Growth</b>		<b>111%</b>		<b>-2%</b>	
Total Number of Public Agricultural Researchers					
Full-time equivalents (FTEs)	1,310.9		2,051.0		2,687.6
<b>Overall Growth</b>		<b>56%</b>		<b>31%</b>	
Agricultural Research Intensity					
Spending as a share of agricultural GDP	0.21%		0.42%		0.33%
FTE researchers per 100,000 farmers	10.54		16.72		21.89

Note: Acronyms, definitions, and an overview of agricultural R&D agencies are available on page 4. Data for non-ARC N institutes were estimated using 2008 survey data.

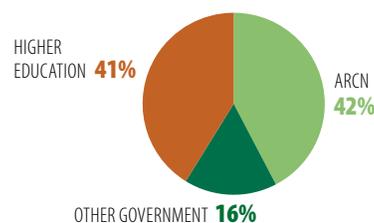
- ▶ By virtue of size, Nigeria leads SSA in terms of agricultural research capacity and spending levels. Nevertheless, its investment in agricultural research as a share of agricultural GDP has always been quite low (0.33 percent in 2011).
- ▶ Yearly growth in agricultural R&D spending slowed during 2009–2011 and fluctuated significantly from year to year. The country still needs substantial research-related infrastructure, equipment, and facilities.
- ▶ Researcher capacity at Nigeria’s ARC N institutes increased across all qualification levels during 2009–2011, but most strongly among those qualified to the MSc-degree level. The slow growth of researchers with PhD degrees is of concern because half of the institutes’ senior researchers are approaching retirement age.

## FINANCIAL RESOURCES, 2011

Spending Allocation	
Salaries	66%
Operating and program costs	17%
Capital investments	17%
Funding Sources	
Government	98%
Sales of goods and services	2%
Other	0.4%

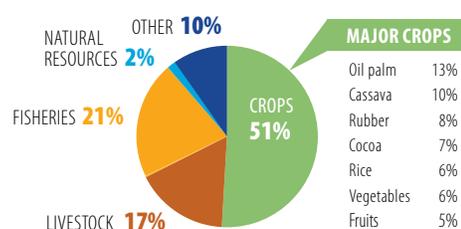
Note: Shares are based on data for 9 out of 15 ARC N institutes.

## INSTITUTIONAL PROFILE, 2011



Note: Other government and higher education were estimated using 2008 survey data.

## RESEARCH FOCUS, 2011

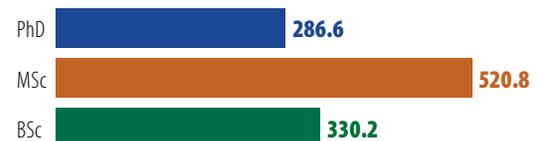


Notes: Major crops include those that are the focus of at least 5 percent of all crop researchers. Shares are based on data for ARC N institutes only. 46 percent of total crop researchers focused on a wide variety of other crops.

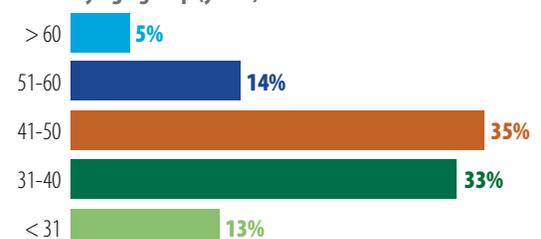
## RESEARCHER PROFILE, 2011



### Number by qualification (FTEs)



### Share by age group (years)



Note: Due to lack of availability, researcher data are for the 15 ARC N institutes only.

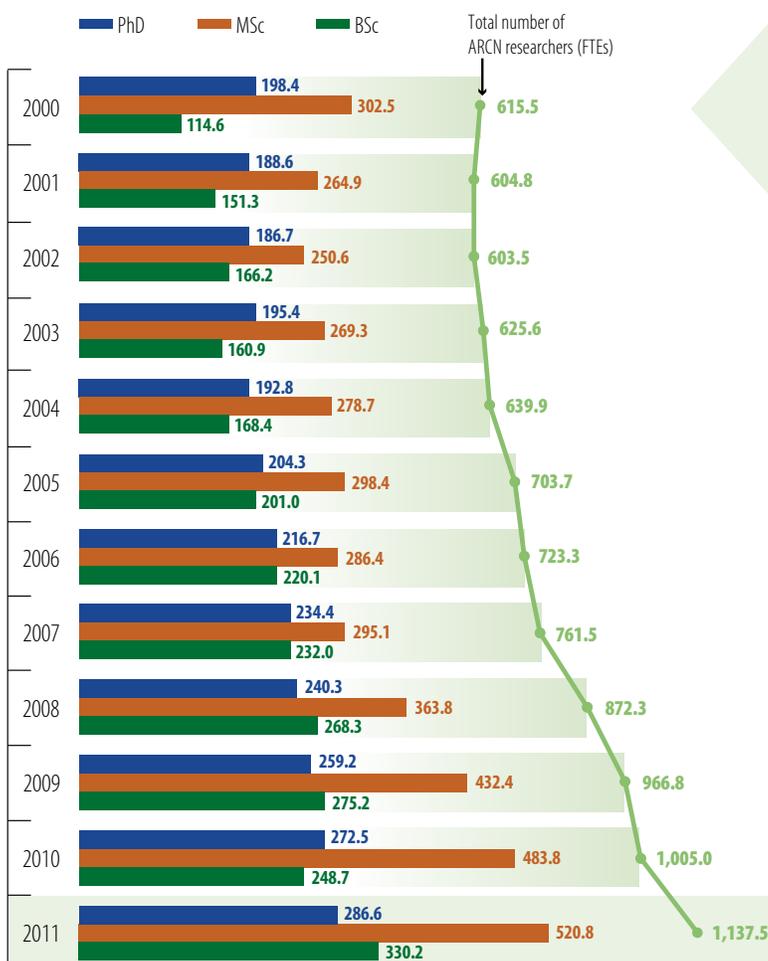
## CHALLENGE

- ▶ The number of researchers with PhD degrees has grown slowly compared with the number of researchers with MSc and BSc degrees. Moreover, many of these senior researchers are approaching retirement age, and a new policy mandating that directors retire upon the completion of eight years of service will likely exacerbate this situation.

## POLICY OPTIONS

- ▶ Training and mentoring the large number of recently recruited junior researchers should continue to be a priority at the ARCN institutes. In addition, the proposed modifications to pay scales and employee conditions of service—including the introduction of a chief research fellow classification (which would be equivalent to a university professor)—should be approved to address difficulties in retaining staff.

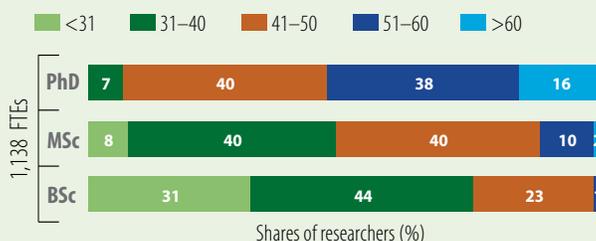
Number of ARCN researchers by qualification level, 2000–2011 (FTEs)



On the whole, the number of researchers employed at ARCN agencies increased across all qualification levels between 2008 and 2011. Shares of PhD-qualified researchers were as high as 84 percent at NAPRI and 55 percent at IAR&T in 2011, but they were as low as 11 percent at two of the other agencies.

In 2011, more than half the researchers with PhD degrees were more than 50 years of age. Newer recruits were generally younger and qualified to the BSc level only.

Distribution of ARCN researchers by age bracket, 2011



## 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)
<b>Nigeria</b>	<b>2,687.6</b>	<b>31%</b>	<b>25%<sup>a</sup></b>
Kenya	1150.9	13%	32%
South Africa	746.3	–5%	36% <sup>a</sup>
Uganda	353.9	13%	31%

<sup>a</sup> For Nigeria and South Africa, data on the share of PhD researchers only applies to the ARCN and Agricultural Research Council agencies, respectively.

## CHALLENGE

- ▶ In addition to the need to build human resource capacity, the country's agricultural research agencies remain underequipped and lacking in research-related infrastructure and facilities. Furthermore, the slow approval and disbursement of funding for programs such as WAAPP and CARGS have hindered the implementation of research projects.

### ▶ STRATEGIES TO RESTRUCTURE AND STRENGTHEN CAPACITY AT ARCEN

Nigeria was selected to participate in the second phase of the World Bank–financed WAAPP, developed to accelerate agricultural productivity growth in select countries across West Africa. Phase one, although intended to begin in 2011, was delayed until 2013 and will run until 2016 with a value of US\$51 million. Nigeria's entire agricultural research system is expected to benefit from the improved technologies, including ARCEN and its institutes, the universities, the federal departments of extension and fisheries, the National Agency for Genetic Resources and Biotechnology, the National Agricultural Seed Council, farmers, and private seed companies and hatcheries.

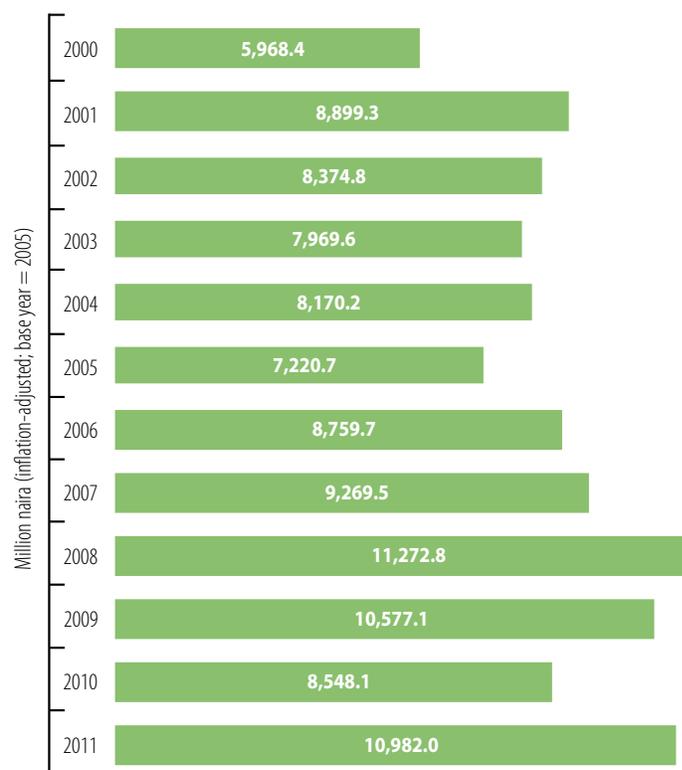
The program is supporting training and capacity building: currently over 40 researchers are undertaking postgraduate diploma and MSc and PhD degree training, and another 41 staff members are undertaking short-term courses.

WAAPP is also providing funding for the development of a plan to restructure ARCEN according to the country's Agricultural Transformation Agenda. This process offers an opportunity to reassess national research priorities and address capacity and financial constraints. Highly performing national agricultural research systems such as those of India, China, Kenya, Uganda, and Brazil are currently being studied to provide key lessons and a possible model for ARCEN to follow.

## POLICY OPTIONS

- ▶ The need for increased government funding for research cannot be overemphasized if development objectives outlined under the country's Agricultural Transformation Agenda are to be achieved. The government should take steps to accelerate the transformation of the agricultural research system—for example, by activating the agricultural research endowment fund within ARCEN's enabling legislation—to ensure that the system is founded on well-coordinated research priorities and is supported by the necessary levels of sustainable funding, well-trained and experienced staff, and facilities and equipment.

ARCEN's spending, 2000–2011



## 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
<b>Nigeria</b>	<b>393.9</b>	<b>-2%</b> 	<b>0.33</b>
Kenya	188.1	11% 	1.21
South Africa	237.2	-7% 	2.18
Uganda	106.8	15% 	1.22

## OVERVIEW OF NIGERIA'S AGRICULTURAL RESEARCH AGENCIES

ARCN coordinates the agricultural research activities of 15 national agricultural research institutes, which together account for almost half of the country's agricultural researchers. The largest of these agencies are NIOMR (employing 190 FTE researchers in 2011), NVRI (149 FTEs), NIFOR (107 FTEs) and NIHORT (105 FTEs). Seven other (non-ACRN) government agencies conduct agricultural research (employing an estimated total of 443 FTEs in 2011). A significant number of agricultural higher education agencies conduct agricultural research in Nigeria at both federal and state levels, including 122 specialized universities, colleges, faculties, and departments (estimated total of 1,107 FTEs). Regrettably, data collection could not be completed for these agencies due to a protracted strike. Research conducted by nonprofit and private-for-profit companies in Nigeria is minimal and is therefore excluded from this analysis

### 144 AGENCIES



Government

22



Higher education

122

## 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](http://www.asti.cgiar.org/methodology); for more information on agricultural R&D in Nigeria, visit [www.asti.cgiar.org/nigeria](http://www.asti.cgiar.org/nigeria).

## ACRONYMS USED IN THIS FACTSHEET

<b>AgGDP</b>	Agricultural gross domestic product
<b>ARCN</b>	Agricultural Research Council of Nigeria
<b>CARGS</b>	Competitive Agricultural Research Grant Scheme
<b>FTE(s)</b>	Full-time equivalent (researchers)
<b>IAR&amp;T</b>	Institute of Agricultural Research and Training
<b>NAPRI</b>	National Animal Production Research Institute
<b>NIFOR</b>	Nigerian Institute for Oil Palm Research
<b>NIHORT</b>	National Institute of Horticultural Research
<b>NIOMR</b>	Nigerian Institute for Oceanography and Marine Research
<b>NVRI</b>	National Veterinary Research Institute
<b>PPP</b>	Purchasing power parity (exchange rates)
<b>R&amp;D</b>	Research and development
<b>SSA</b>	Africa South of the Sahara
<b>WAAPP</b>	West Africa Agricultural Productivity Program



For a complete list of the agencies included in ASTI's dataset for Nigeria, visit [www.asti.cgiar.org/nigeria](http://www.asti.cgiar.org/nigeria).

## ABOUT ASTI, IFPRI, AND ARCN

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 **Agricultural Research Council of Nigeria (ARCN)** is a parastatal under the Federal Ministry of Agricultural and Rural Development responsible for the guidance and coordination of agricultural research activities in Nigeria.

ASTI/IFPRI and ARCN 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 ARCN.

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