

# GUINEA-BISSAU

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## KEY INDICATORS, 2009–2011

Total Public Agricultural Research Spending	2009		2011
CFA francs (million constant 2005 prices)	68.7		34.7
PPP dollars (million constant 2005 prices)	0.32		0.16
<b>Overall growth</b>		<b>-50%</b>	
Total Number of Public Agricultural Researchers			
Full-time equivalents (FTEs)	11.0		9.0
<b>Overall Growth</b>		<b>-18%</b>	
Research Intensity			
Spending as a share of agricultural GDP	0.04%		0.02%
FTE researchers per 100,000 farmers	25.00		19.78

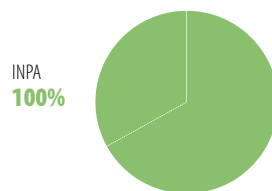
Note: Acronyms, definitions, and an overview of agricultural R&D agencies are available on page 4.

- ▶ In 2011, Guinea-Bissau spent just 0.02 percent of its agricultural GDP on agricultural research—by far the lowest level in Africa (and the rest of the developing world).
- ▶ INPA is the nation's only agricultural R&D agency. Funding for its R&D programs is entirely dependent upon donors and is extremely limited, volatile, and in some years nonexistent. As a result, many of INPA's research programs are unfunded.
- ▶ The country falls well short of having a critical mass of qualified agricultural researchers. In 2011, INPA employed just nine researchers with degree qualifications and, of those, none held PhD or MSc degrees, and none were female.

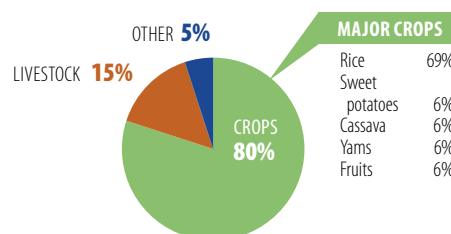
## FINANCIAL RESOURCES, 2011

Spending Allocation	
Salaries	88%
Operating and program costs	12%
Capital investments	0%
Funding Sources	
Government	88%
Donors and development banks	0%
Sales of goods/services	12%

## INSTITUTIONAL PROFILE, 2011



## RESEARCH FOCUS, 2011



Notes: Major crops include those that are the focus of at least 5 percent of all crop researchers; 6 percent of total crop researchers focused on a variety of other crops.

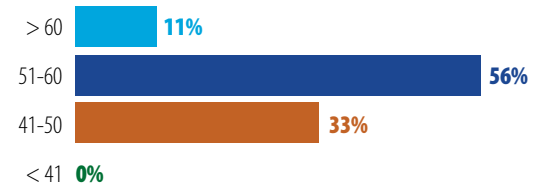
## RESEARCHER PROFILE, 2011



### Number by qualification (FTEs)



### Share by age group (years)



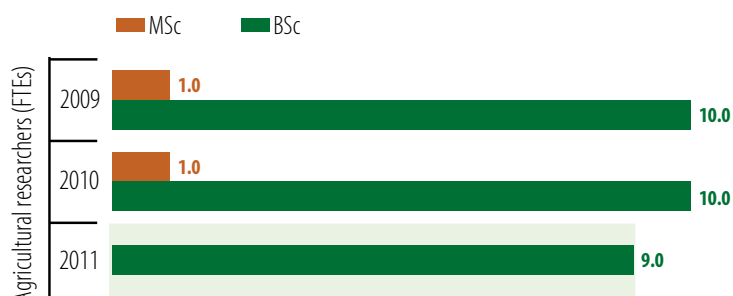
## CHALLENGE

- ▶ The 1998–1999 civil war had a devastating impact on INPA's facilities and human resource capacity, and was the starting point of a period of long-term neglect of agricultural R&D. Large-scale staff departures over the past decade have left INPA with a critical shortage of qualified scientists, severely constraining its ability to conduct effective research programs or release new varieties and technologies.

## POLICY OPTIONS

- ▶ In order to maintain a critical mass of agricultural researchers at the national level, the government needs not only to recruit and train researchers without further delay, but also to ensure that more competitive salary levels and attractive working conditions are offered to prevent future capacity erosion.

Number of agricultural researchers by degree and age bracket, 2009–2011



Age bracket, 2011 (years)	Degree-qualified researchers
> 60	1
51–60	5
41–50	3
< 41	0
<b>Total</b>	<b>9</b>

The total number of degree-qualified agricultural researchers at INPA fell from 11 in 2009 to 9 in 2011. The last researcher with an MSc degree departed the institute in 2010. In 2011, INPA employed just 9 BSc-qualified researchers, six of whom were over 50 years old and who will retire over the next ten years. None of the institute's degree-qualified researchers are in their twenties or thirties.

### ▶ INPA LACKS A CRITICAL MASS OF WELL-QUALIFIED RESEARCHERS

Extremely low salary levels, poor service conditions, and political instability are the main reasons why many of INPA's MSc-qualified researchers departed over the past 15 years in preference for more attractive opportunities abroad. INPA's current pool of BSc-qualified researchers is simply too small to ensure day-to-day and longer term programmatic continuity. In addition, widespread capacity constraints in other government departments mean that experienced researchers from INPA are often temporarily seconded by other departments, diverting them from their core agricultural research work. This has obvious negative impacts on research outputs.

A minimum number of PhD-qualified scientists is generally considered necessary for the conception, execution, and management of a viable research program; for effectively communicating with policymakers, donors, and other stakeholders, both locally and through regional and international forums; and for increasing an institute's chances in securing (regional) competitive funding. Despite the severe lack of highly qualified research personnel in Guinea-Bissau, INPA does employ a large number of technicians, many of whom have more than 20 years of experience. In fact, INPA's research centers in Contuboeil, Caboxanque, and Quebo are headed by technicians without formal university degrees.

## 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>Guinea-Bissau</b>	<b>9.0</b>	<b>-18%<sup>a</sup></b>	<b>0%</b>
Guinea	265.0	15%	16%
Senegal	112.2	-16%	70%
The Gambia	65.9	31%	9%

<sup>a</sup> For Guinea-Bissau, this growth is based on the 2009–2011 period.

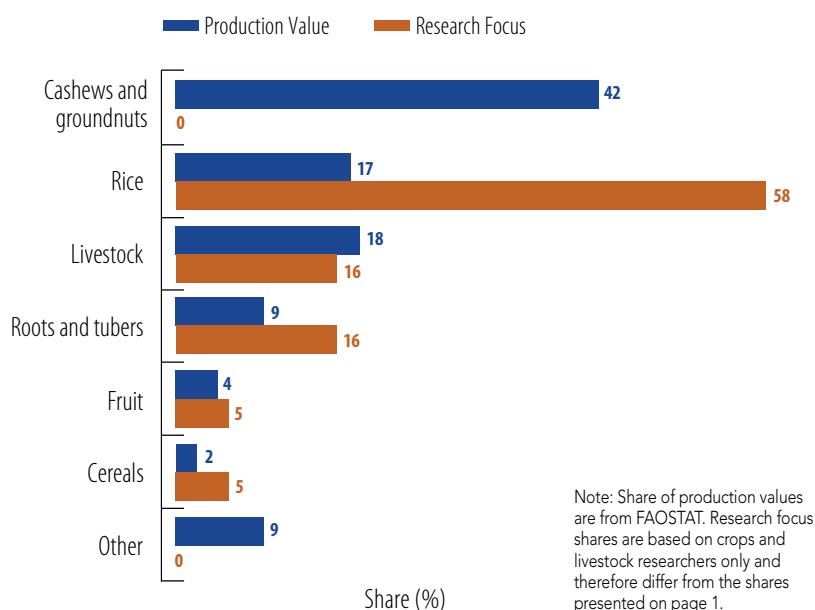
## CHALLENGE

- ▶ Underinvestment in agricultural R&D in Guinea-Bissau is alarming. No investments have been made in research laboratories or equipment for more than a decade, and funding for research on a large number of priority commodities is nonexistent. INPA's (extremely limited) research activities are entirely funded by donors.

## POLICY OPTIONS

- ▶ The government needs to clearly identify its research priorities and allocate funding for the effective implementation of R&D programs. In addition, donor funding needs to be more closely aligned with the national priorities identified. Efforts to innovatively build and enhance subregional linkages also need to be further explored so that synergies and efficiencies can be maximized.

### Congruence between agricultural R&D focus and production value, 2011



In 2011, cashews and groundnuts represented more than 40 percent of Guinea-Bissau's total value of crop and livestock production, yet these crops were totally overlooked in INPA's research agenda. In contrast, rice was the focus of close to 60 percent of INPA's research that year, even though it represented less than 20 percent of the country's total production value. Given INPA's extreme dependence on short-term and ad hoc donor funding, its commodity focus can vary widely from year to year.

### ▶ INPA'S RESEARCH AGENDA IS ENTIRELY DONOR-DRIVEN

In the 1990s, INPA benefited from substantial long-term funding from Sweden. However, the civil war and the period of sustained political instability that followed led to the large-scale neglect of agricultural research. Government funding to INPA only covers the institute's salary bill (representing 88 percent of total expenditures in 2011), so research programs are entirely dependent on limited, volatile, and ad hoc support from donors and development banks. In recent years, only small projects (valued at under US\$10,000 each) were funded by FAO, African Development Bank, World Bank, CORAF/WECARD, and AfricaRice.

Before the civil war, INPA managed eight research programs that were adequately staffed and funded. As of 2013, research was conducted at highly irregular intervals depending on the availability of funding. Many priority areas remain unfunded. Research on cashews, for example—the country's most important crop both in terms of production and export value—is entirely overlooked due to lack of funding. Farmers' needs require prioritization through a range of participatory approaches that ensure their input is incorporated into the research agenda and hence have grassroots impact. The Guinea-Bissau government needs to be a more active participant in this process, setting clear research priorities and actively seeking innovative sources of funding.

## 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>Guinea-Bissau</b>	<b>0.2</b>	<b>-50%<sup>b</sup></b>	<b>0.02%</b>
Guinea	4.4	34%	0.22%
Senegal	24.8	4%	0.83%
The Gambia	5.5	25%	1.03%

<sup>b</sup> For Guinea-Bissau, this growth is based on the 2009–2011 period.

## OVERVIEW OF AGRICULTURAL RESEARCH IN GUINEA-BISSAU

INPA is the only agricultural research agency in Guinea-Bissau. In addition to conducting (extremely limited) crop and livestock research, the institute is also involved in the production of plant and animal material, the diffusion of new technologies, the provision of agricultural training, and the dissemination of scientific and technical information. INPA has four research centers across the country, but much of its infrastructure is dilapidated. The remote centers of Contuboeil, Caboxanque, and Bissorã were severely affected by the 1998–1999 civil war and subsequent (and ongoing) economic crisis. No higher education, nonprofit, or private sector agencies conducting agricultural R&D were identified in Guinea-Bissau.



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

## 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 Guinea-Bissau, visit [www.asti.cgiar.org/guinea-bissau](http://www.asti.cgiar.org/guinea-bissau).

## ACRONYMS USED IN THIS FACTSHEET

<b>AgGDP</b>	Agricultural gross domestic product
<b>CORAF/ WECARD</b>	West and Central African Council for Agricultural Research and Development
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FTE</b>	Full-time equivalent (researchers)
<b>INPA</b>	National Agricultural Research Institute
<b>PPP</b>	Purchasing power parity (exchange rates)
<b>R&amp;D</b>	Research and development

## ABOUT ASTI, IFPRI, AND INPA

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 (INPA)** is Guinea-Bissau's principal agricultural R&D agency. It is placed under the Ministry of Agriculture and Fisheries and conducts research on crops and livestock.

ASTI 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 INPA.

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