# MAURITIUS

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## KEY INDICATORS, 2000–2011

| Total Public Agricultural Research Spending | 2000 | | 2008 | | 2011 |
|---|---|---|---|---|---|
| Mauritian rupees (million constant 2005 prices) | 329.0 | | 303.4 | | 382.3 |
| PPP dollars (million constant 2005 prices) | 22.4 | ▼ | 20.7 | ▲ | 26.0 |
| **Overall Growth** | | **–8%** | | **26%** | |
| **Total Number of Public Agricultural Researchers** | | | | | |
| Full-time equivalents (FTEs) | 141.4 | ▲ | 163.9 | ▼ | 150.7 |
| **Overall Growth** | | **16%** | | **–8%** | |
| **Agricultural Research Intensity** | | | | | |
| Spending as a share of agricultural GDP | 3.39% | | 3.89% | | 4.88% |
| FTE researchers per 100,000 farmers | 224.40 | | 321.42 | | 320.64 |

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

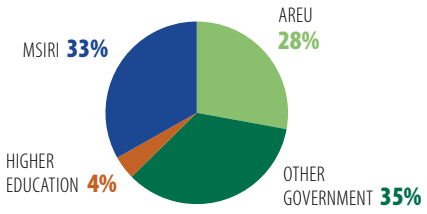
- National spending on agricultural research grew during 2008–2011 due to increased salary expenses and capital investments at AREU, the country's main government agricultural research agency. These investments were funded by the government and various donors.
- Mauritius's largest agricultural research agency, MSIRI, focuses on sugarcane and until recently generated its funding through a tax on the proceeds of sugar production. With the phasing out of the EU sugar protocol and the end of fixed sugar prices, the institute has faced serious financial constraints and been forced to supplement its funding through other sources.
- The number of agricultural researchers in Mauritius fell during 2008–2011, largely due to a 28-percent decline in the number of BSc-qualified researchers (in FTEs). The number of researchers with PhD and MSc degrees remained fairly stable during this period, although Mauritius has one of the lowest shares of PhD-qualified agricultural researchers in Africa.

## FINANCIAL RESOURCES, 2011

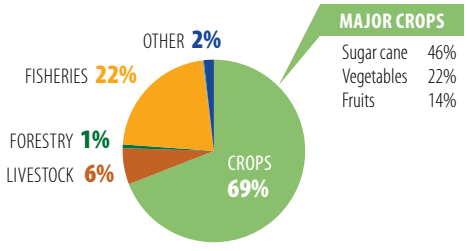
| Spending Allocation | |
|---|---|
| Salaries | 79% |
| Operating and program costs | 14% |
| Capital investments | 7% |
| **Funding Sources** | |
| Government | 85% |
| Donors | 10% |
| Sales of goods and services | 5% |

Note: Shares are based on data for AREU only.

## INSTITUTIONAL PROFILE, 2011



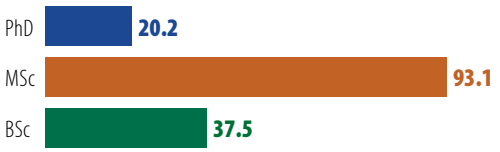

## RESEARCH FOCUS, 2011



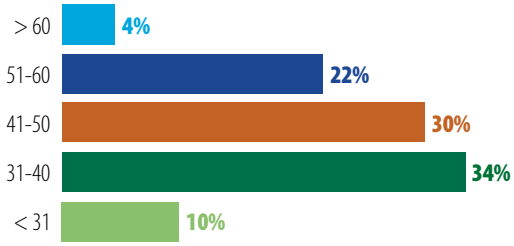

Notes: Major crops include those that are the focus of at least 5 percent of all crop researchers; 18 percent of total crop researchers focused on a wide variety of other crops.

## RESEARCHER PROFILE, 2011


**Number by qualification (FTEs)**




**Share by age group (years)**



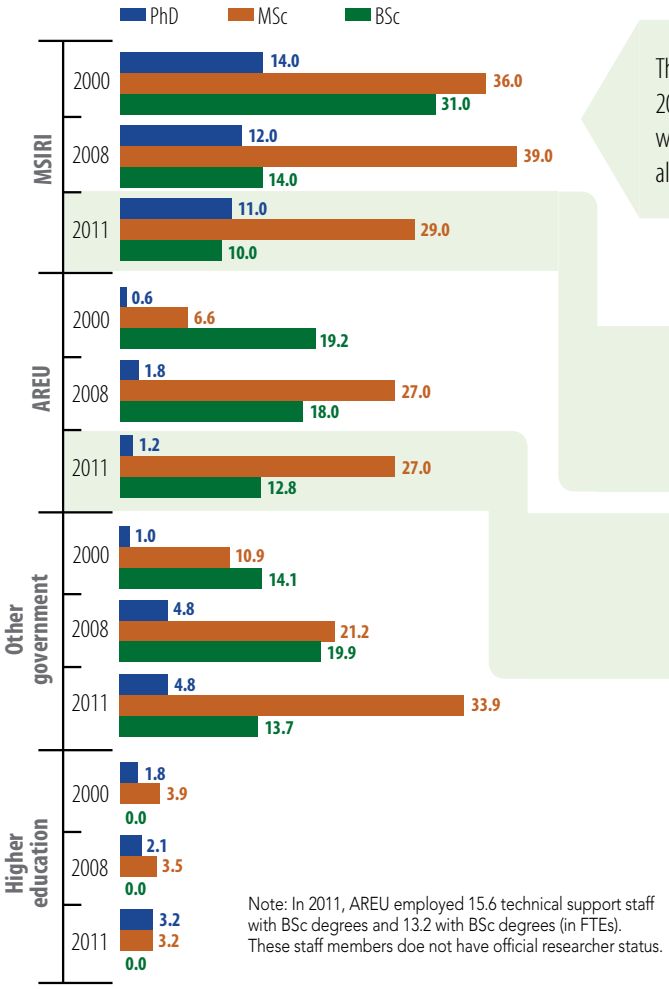
## CHALLENGE

- Funding constraints have limited training and staff development at MSIRI, AREU, and other government agencies. Researchers obtain degrees on an ad hoc basis through part-time arrangements with the University of Mauritius, but only in a few restricted fields where financial assistance is available. The university's Faculty of Agriculture is also limited in its ability to offer a wide range of courses at the PhD level.

## POLICY OPTIONS

- Research agencies need a critical mass of high-caliber professionals to effectively generate and disseminate research outputs and mentor junior scientists. The newly merged institution, FAREI, offers an opportunity to establish mechanisms for researchers to pursue higher degrees in priority areas. National PhD programs in the agricultural sciences would also alleviate the need to travel abroad to seek advanced degrees. Such options would, however, require increased investment.

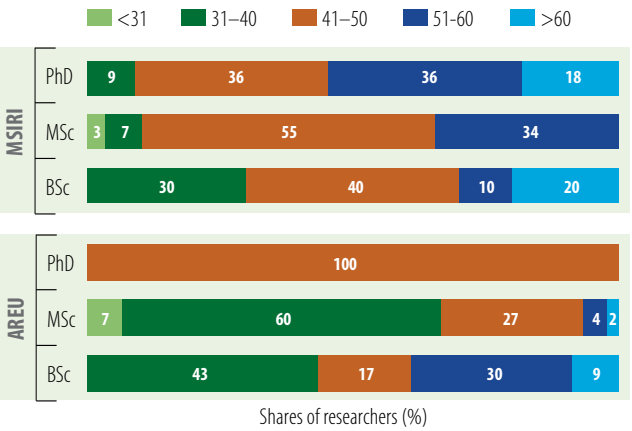
**Total number of public agricultural researchers by qualification level, 2000, 2008, and 2011 (FTEs)**




Note: In 2011, AREU employed 15.6 technical support staff with BSc degrees and 13.2 with BSc degrees (in FTEs). These staff members doe not have official researcher status.

The total number of researchers with PhD and MSc degrees remained fairly stable between 2008 and 2011; however, levels varied across agencies. For instance, the number of researchers with MSc degrees dropped at MSIRI. The number of researchers with BSc degrees declined at almost all of the country's agricultural research agencies during this period.

**Distribution of researchers by age bracket, 2011**




In 2011, almost half the researchers with BSc and PhD degrees were over the age of 50. Researchers qualified to the MSc level tended to be younger, on average, with half under the age of 41. Differences also occurred across agencies: MSIRI's researchers are older, on average, than those employed at AREU because departing and retiring researchers have not been replaced due to funding constraints.

## 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) |
|---|---|---|---|
| **Mauritius** | **150.7** | **–8%** | **13%** |
| Madagascar | 193.1 | 1% | 40% |
| Malawi | 162.3 | 41% | 20% |
| Mozambique | 313.6 | 22% | 8% |

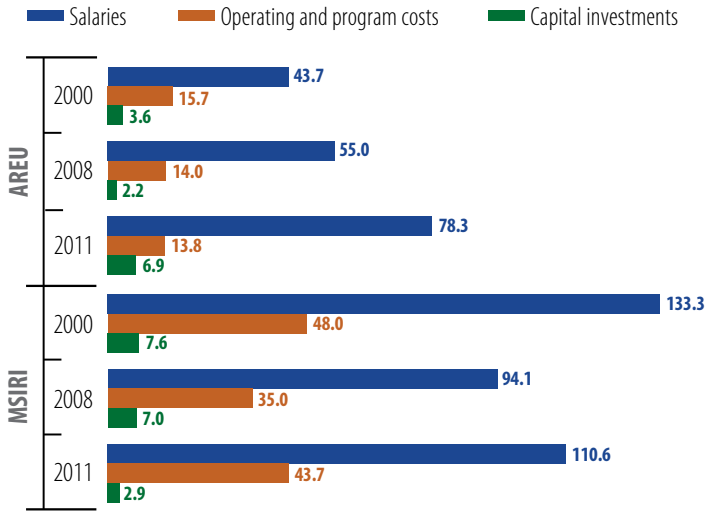
## CHALLENGE

- AREU's funding grew during 2000–2011 through additional support from both government and international donors. Much of the increase was in response to improved civil service salary levels, but investments were also made in laboratory facilities and new research units in the area of food technology and plant protection. While these developments were highly positive, salary-related expenses absorbed the majority of AREU's funding; little remained for allocation to operating and program expenses or capital investments, which are vital for the effective conduct of research.

## POLICY OPTIONS

- Agricultural R&D in Mauritius has traditionally been well-staffed and well-funded. The creation of the merged institution FAREI offers an opportunity to reassess research priorities and address financial and human resource constraints, especially in light of the new Food Security Fund Strategic Plan under MAIFS, which seeks to increase food self-sufficiency in a number of priority crops.

**Spending by cost categories at AREU and MSIRI, 2000, 2008, and 2011**




Million rupees (inflation-adjusted; base year = 2005)

With adjustments to civil service salary levels, and growth in the number of MSc-qualified researchers, AREU's salary bill increased substantially during 2000–2011. Spending on operating and program costs, however, remained largely unchanged. MSIRI's salary and operating and program expenses were significantly higher than AREU's.

### RECENT INSTITUTIONAL DEVELOPMENTS

In 2014, FARC and AREU were merged to create the Food and Agricultural Research and Extension Institute (FAREI). The new agency, which is still in transition, will revisit past strategic plans and develop a new action plan for the future, incorporating an assessment of major issues and challenges relating to funding, staffing, training, and mission. Funding may remain a constraint to research, however, as government budget allocations are unlikely to change.

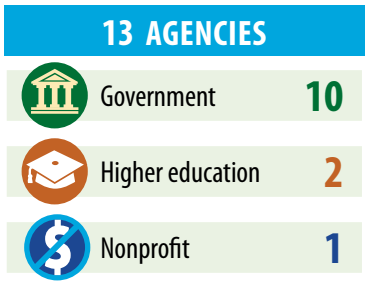
MSIRI ceased to be a stand-alone institution as of March 2012, and instead became a department within the Mauritius Cane Industry Authority, which now also encompasses five other parastatal organizations relating to the sugar sector. The "S" in MSIRI now indicates "sugarcane" rather than "sugar." Staffing at these six entities has been reduced by almost 40 percent since March 2012, and the budget has been similarly cut—posing a serious constraint for MSIRI. MSIRI already faced funding challenges stemming from a decline in its traditional funding mechanism (a tax on sugar production), based on pressure from the planting community to lower the tax, combined with falling sugar prices due to the restructuring of the EU's Sugar Regime and subsequent elimination of fixed sugar prices and quotas. The EU established the ACP-Sugar Research Program to help sugar industries in affected countries adjust to a more competitive market. As of August 2010, the program funded eight of MSIRI's research projects for an estimated value of 5.8 million Euros until its completion in December 2014. This funding helped MSIRI to mitigate some of the negative effects of the reduced sugar prices in 2010 and 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 |
|---|---|---|---|
| **Mauritius** | **26.0** | **26%** | **4.88%** |
| Madagascar | 7.7 | -27% | 0.16% |
| Malawi | 34.3 | 110% | 1.03% |
| Mozambique | 20.7 | 14% | 0.36% |

## OVERVIEW OF MAURITIUS'S AGRICULTURAL RESEARCH AGENCIES

Thirteen agencies conduct agricultural R&D in Mauritius. The largest, MSIRI (employing 50 FTEs in 2011), accounted for one-third of the country's agricultural researchers that year and, until 2012, was a nonprofit agency mandated to promote the technical progress of the sugar industry through research (see Page 3 for details). Ten government agencies are involved in agricultural research. FAREI was established in 2014 through a merger of the main government research agency, AREU, and its coordinating parastatal organization, FARC. AREU (42 FTEs) was responsible for crop and livestock research and extension as a unit under FARC (4 FTEs). Two other important government agencies are the Mauritius Oceanography Institute (22 FTEs) and the Albion Fisheries Research Centre (8 FTEs). Two higher education agencies under the University of Mauritius also conduct a small amount of agricultural research: the Faculty of Agriculture (5 FTEs) and the Department of Biological Sciences (0.9 FTEs). Research conducted by the private-for-profit sector in Mauritius is minimal.




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

## 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**; *for more information on agricultural R&D in Mauritius, visit* **www.asti.cgiar.org/mauritius**.

## ACRONYMS USED IN THIS FACTSHEET

| | |
|---|---|
| **ACP** | African, Caribbean, and Pacific |
| **AREU** | Agricultural Research and Extension Unit |
| **EU** | European Union |
| **FARC** | Food and Agricultural Research Council |
| **FAREI** | Food and Agricultural Research and Extension Institute |
| **FTE(s)** | Full-time equivalent (researchers) |
| **MAIFS** | Ministry of Agro Industry and Food Security |
| **MRC** | Mauritius Research Council |
| **MSIRI** | Mauritius Sugarcane Industry Research Institute |
| **PPP(s)** | Purchasing power parity (exchange rates) |
| **R&D** | Research and development |

## ABOUT ASTI, IFPRI, AND FAREI

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 **Food and Agricultural Research and Extension Institute (FAREI; formerly FARC/AREU)** is responsible for coordinating, conducting, and monitoring research and extension related to agriculture, forestry, fisheries, and food production; the institute falls under the Ministry of Agro Industry and Food Security.

ASTI/IFPRI and FAREI 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 FAREI.