



# MALAWI

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## KEY INDICATORS, 2000–2011

Total Public Agricultural Research Spending	2000		2008		2011
Malawian kwacha (million constant 2005 prices)	939.6		643.1		1,352.2
PPP dollars (million constant 2005 prices)	23.8		16.3		34.3
<b>Overall Growth</b>		<b>-32%</b>		<b>110%</b>	
Total Number of Public Agricultural Researchers					
Full-time equivalents (FTEs)	151.4		115.3		162.3
<b>Overall Growth</b>		<b>-24%</b>		<b>41%</b>	
Agricultural Research Intensity					
Spending as a share of agricultural GDP	0.89%		0.58%		1.03%
FTE researchers per 100,000 farmers	3.87		2.49		3.21

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

► Agricultural R&D spending in Malawi more than doubled between 2008 and 2011, due to growth in both government and donor funding.

► As a result of this increased spending, the share of AgGDP invested in agricultural research reached 1.03 percent, meeting the 1-percent target recommended by NEPAD and the United Nations.

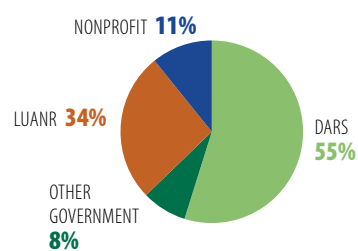
► The total number of agricultural researchers grew substantially during 2008–2011, although the new recruits were predominantly younger, BSc-qualified researchers.

## FINANCIAL RESOURCES, 2011

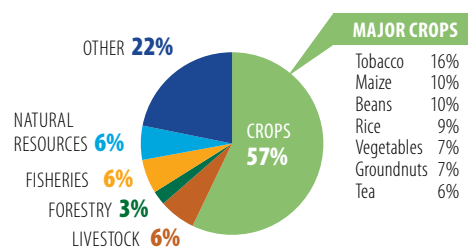
Spending Allocation	
Salaries	49%
Operating and program costs	31%
Capital investments	21%
Funding Sources	
Government	65%
Donors	35%

Note: Shares are based on data for DARS only.

## INSTITUTIONAL PROFILE, 2011



## RESEARCH FOCUS, 2011



Notes: Major crops include crops that form the focus of more than 5 percent of the total crop researchers; 35 percent of total crop researchers focused on a wide variety of other crops.

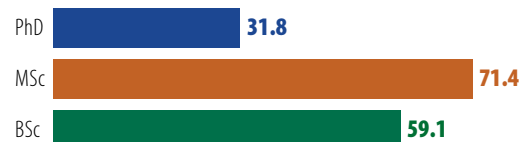
### MAJOR CROPS

Tobacco	16%
Maize	10%
Beans	10%
Rice	9%
Vegetables	7%
Groundnuts	7%
Tea	6%

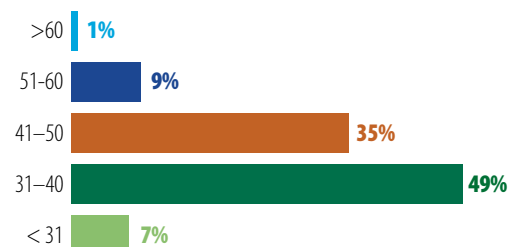
## RESEARCHER PROFILE, 2011



### Number by qualification (FTEs)



### Share by age group (years)



Note: Due to lack of availability, data by gender and age bracket exclude LUANR.

## CHALLENGE

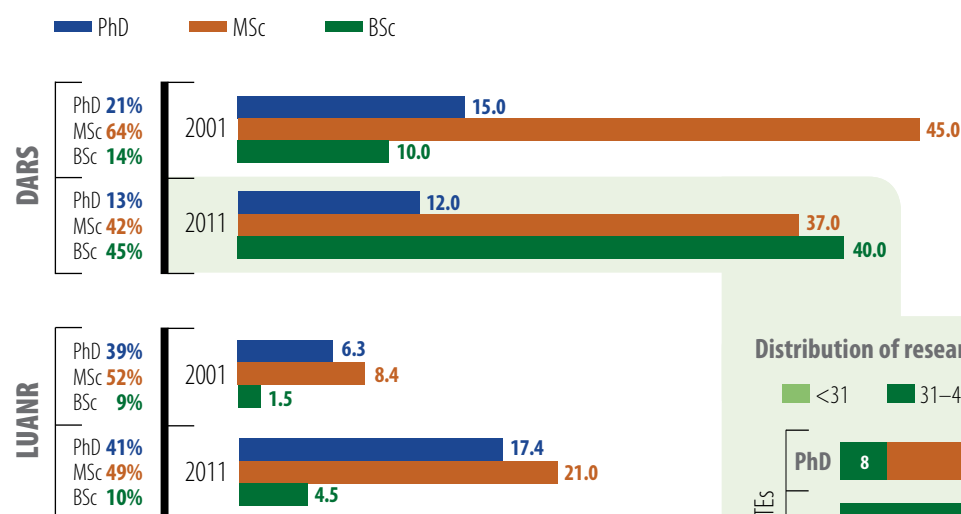
- ▶ Since the early 2000s, the number of PhD-qualified researchers at DARS has decreased, and there has been a significant shift toward junior researchers qualified to the BSc degree level. The junior researchers are in need of further training, mentoring, and experience.

## POLICY RESPONSE

- ▶ Several recent programs have specifically provided funding for training. The situation has improved since 2011 as several staff who were studying abroad have returned to DARS with their newly acquired MSc and PhD degrees. Strengthening the human resource capacity of the current pool of junior researchers should continue to be a policy and management priority.

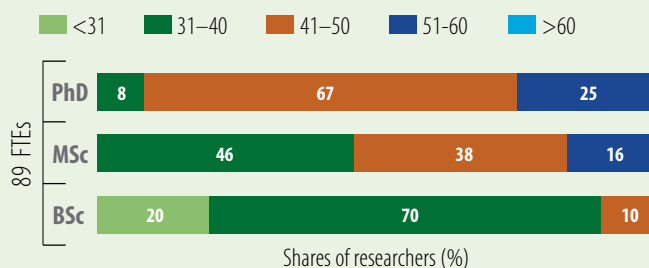
While the number of researchers holding PhD degrees at DARS decreased from 2001 to 2011, the number of researchers qualified to the BSc-degree level quadrupled. In contrast, the number of researchers with PhD degrees at LUANR almost tripled. Universities typically employ greater shares of PhD-qualified researchers than government research agencies in Africa. Nonetheless, LUANR has benefited in particular from a long-term capacity building initiative supported by the Norwegian Agency for Development Cooperation.

### Total number of public agricultural researchers by degree qualification, 2001 and 2011 (FTEs)



Consistent with the shift toward more junior staff, 61 percent of DARS researchers were less than 41 years old in 2011. Ninety percent of BSc holders were under the age of 41. No researchers were over the age of 60 as that is the retirement age.

### Distribution of researchers by age bracket at DARS, 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>Malawi</b>	<b>162.3</b>	<b>41%</b>	<b>20%</b>
Botswana	123.8	26%	20%
Mozambique	313.6	22%	8%
Namibia	89.4	10%	13%

## CHALLENGE

- ▶ DARS accounted for much of the increase in agricultural R&D spending in Malawi during 2009–2011. In addition to funding from a number of donors through ASWAp-SP and other bilateral channels, DARS also obtained project funding through collaborative research programs with AGRA, the McKnight Foundation, and CGIAR centers.

### ▶ RECENT FUNDING PROGRAMS SUPPORT HUMAN RESOURCE CAPACITY AT DARS

ASWAp-SP began in 2009 and was initially financed by a World Bank loan and funding from the Government of Norway. With a starting budget of US\$32 million, the program provided training and other opportunities for several PhD candidates in the agricultural sciences. Other multilateral and bilateral donors, such as DFID and the European Union, have supported the program with additional funds channeled through a multi-donor trust fund. The World Bank provided a further US\$30 million loan in 2012, and a second phase to be financed by the multi-donor trust fund is expected to begin in 2014.

Other training programs have been available, but are discipline-specific, including CIP support for potato research and the Australian government's support for maize research. Training at the technician and BSc degree level is adequate, but more funding is needed for advanced degree-level training, particularly of researchers employed at DARS.

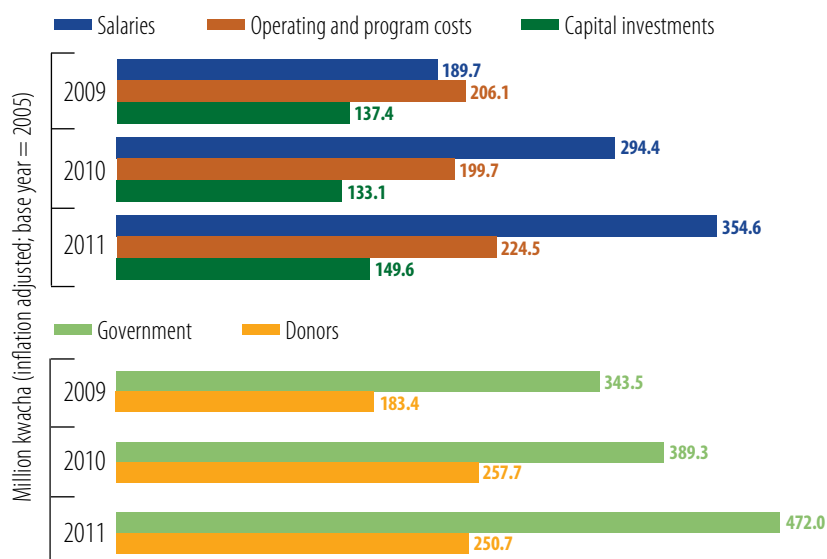
In 2013, the World Bank initiated APPSA, which will provide Malawi with US\$30 million over five years, targeting capacity building for DARS staff, as well as infrastructure development. The project will focus on developing DARS's Chitedze Research Station as a regional center of excellence for maize.

## POLICY OPTION

- ▶ High dependence on donor funding can leave research agencies vulnerable to funding shocks. It is advisable for research agencies to diversify their funding sources to ameliorate volatile funding levels, to formulate contingency plans, and to seek political support for agricultural R&D such that the government can step in when needed to counteract the volatility associated with donor funding.

Spending by DARS on operating and program costs and capital investments increased considerably during 2009–2011. The cost of salaries also increased during 2010–2011, reflecting growth in the number of agricultural researchers.

Spending by cost categories and funding by source at DARS, 2009–2011






Donor funding for DARS accounted for 35 percent of total funding in 2011, a relatively high share among Southern African countries.

## 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>Malawi</b>	<b>34.3</b>	<b>110%</b>	<b>1.03</b>
Botswana	17.5	-27%	2.44
Mozambique	20.7	14%	0.36
Namibia	43.1	69%	4.27

## OVERVIEW OF MALAWI'S AGRICULTURAL RESEARCH AGENCIES

Seven agencies conduct agricultural R&D in Malawi. The main agency, DARS (employing 89 FTEs in 2011), accounts for about half of the country's total number of agricultural researchers (in FTEs) and is responsible for crop and live-stock research. DARS is headquartered at Chitedze Research Station in Lilongwe and operates 10 research stations across the country. Three other government agencies that conduct agricultural R&D are the Fisheries Research Station (9 FTEs in 2011), the Forestry Research Institute of Malawi (3 FTEs), and the Central Veterinary Laboratory (0.6 FTEs). One higher education agency, LUANR, conducts agricultural research (43 FTEs). The nonprofit sector includes two agricultural research agencies, the Agricultural Research and Extension Trust (14 FTEs) and the Tea Research Foundation of Central Africa (4 FTEs). Research conducted by the private-for-profit sectors in Malawi is minimal.

7 AGENCIES	
 Government	4
 Higher education	1
 Nonprofit	2

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

## 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 Malawi, visit [www.asti.cgiar.org/malawi](http://www.asti.cgiar.org/malawi).

## ACRONYMS USED IN THIS FACTSHEET

<b>AgGDP</b>	Agricultural gross domestic product
<b>AGRA</b>	Alliance for a Green Revolution in Africa
<b>APPSA</b>	Agricultural Productivity Program for Southern Africa
<b>ASWAp-SP</b>	Agriculture Sector Wide Approach Support Program
<b>CIP</b>	International Potato Center
<b>DARS</b>	Department of Agricultural Research Services
<b>DFID</b>	Department for International Development (United Kingdom)
<b>FTE(s)</b>	Full-time equivalent (researchers)
<b>LUANR</b>	Lilongwe University of Agriculture and Natural Resources (Bunda Campus)
<b>PPP(s)</b>	Purchasing power parity (exchange rates)
<b>R&amp;D</b>	Research and development

## ABOUT ASTI, IFPRI, AND DARS

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 Services (DARS)**, which falls under the Ministry of Agriculture and Food Security, is Malawi's principal agricultural research agency; DARS focuses on crop and livestock research.

ASTI/IFPRI and DARS 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 DARS.

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