ASTI facilitated by IFPRI

ZIMBABWE

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Key Trends

- Economic stabilization after years of hyperinflation reinvigorated agricultural research investment from 2009, but economic downturn since 2015 once again threatens the country's agricultural research funding.
- The share of PhD-qualified researchers rose substantially during 2009–2016—from 12 to 23 percent—but this growth largely occurred in the higher education sector. The share of PhD-qualified researchers in the government sector remained very low (9 percent as of 2016).
- DRSS and DVLS have traditionally experienced high staff turnover. In response, the government introduced restructuring in 2016 to increase capacity in some departments and eliminate redundancy in others.

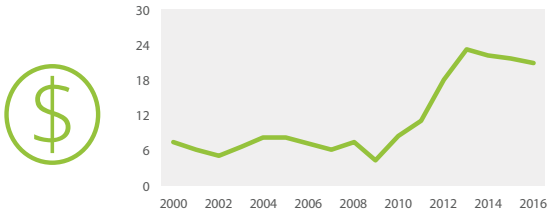
Current Challenges

- Linkages and coordination within the national agricultural research system are weak, and the research-extension interface is not clearly defined to facilitate effective information dissemination. Policies also fail to encourage private participation.
- Agricultural R&D in Zimbabwe is primarily funded by the government but is only sufficient to cover staff salaries and some operating expenses. Long-term funding constraints have caused a deterioration of research infrastructure, necessitating strategic investment for rehabilitation.
- Government agricultural research agencies in Zimbabwe employ few scientists with PhD degrees. Many experienced staff members departed during 2000–2008 when hyperinflation deflated salary values. Thereafter, low salary levels impeded capacity building, and new recruits tend to be younger and less experienced.

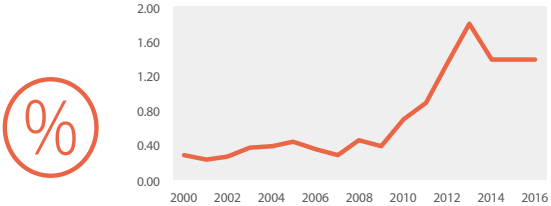
Policy Options

- Greater government allocations to operating and capital expenses are needed, as are other funding sources, particularly from the private sector. Capacity strengthening of technical staff is also required, potentially through public–private partnerships with regional and international research institutions.
- Given the country's limited resources, coordination by the Agricultural Research Council needs to be strengthened to prioritize and ensure the adequacy and relevance of the agricultural research agenda.
- Research programs need to be developed with stakeholder input, targeting areas of greatest public good that are not already addressed by the private sector.

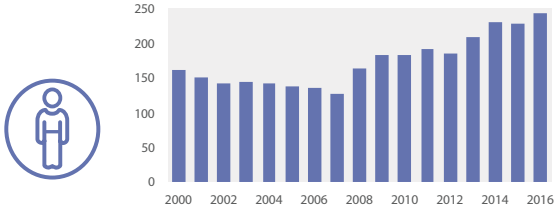
AGRICULTURAL RESEARCH SPENDING



SPENDING INTENSITY



AGRICULTURAL RESEARCHERS

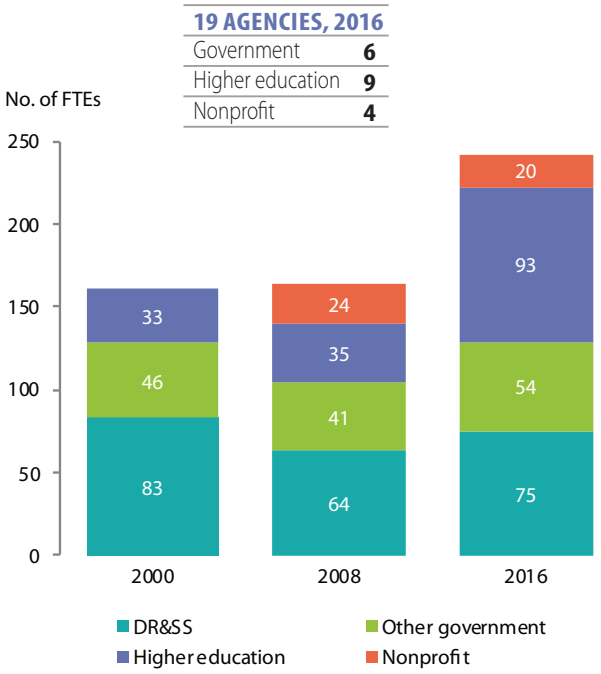


	ZIMBABWE	BOTSWANA	MOZAMBIQUE	SOUTH AFRICA (2015)
Million Zimbabwean dollars (2011 constant prices)	21.0			
Million PPP dollars (2011 constant prices)	41.6	17.5	31.8	370.8
Agricultural research spending as a share of AgGDP	1.39%	2.27%	0.43%	2.61%
Full-time equivalents	242.0	116.0	386.1	873.4
Share of researchers with MSc and PhD degrees	67%	66%	54%	na

Notes: Data in the table above are for 2016. 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 **http://www.asti.cgiar.org/zimbabwe/directory** for an overview of Zimbabwe's agricultural R&D agencies.

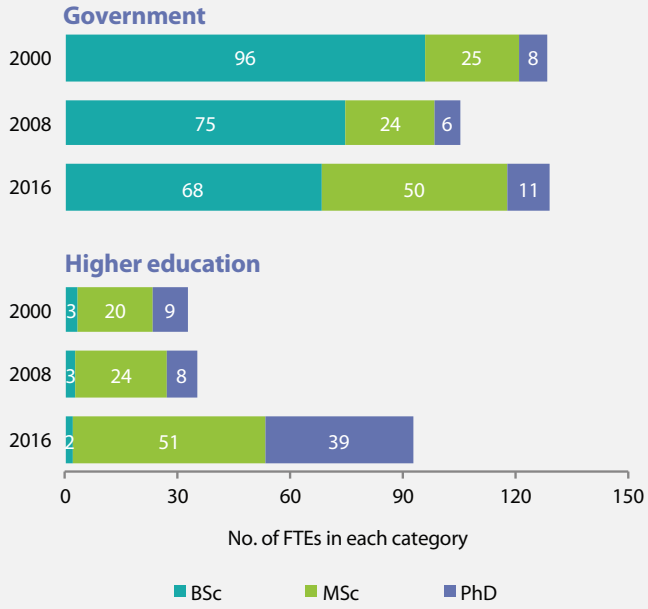
Institutional composition of agricultural research

Strong growth in the number of agricultural researchers employed in the higher education sector caused that share to rise from 21 to 38 percent during 2008–2016; as a result, the combined share of DR&SS and the other government agencies involved in agricultural research fell from 64 to 53 percent.



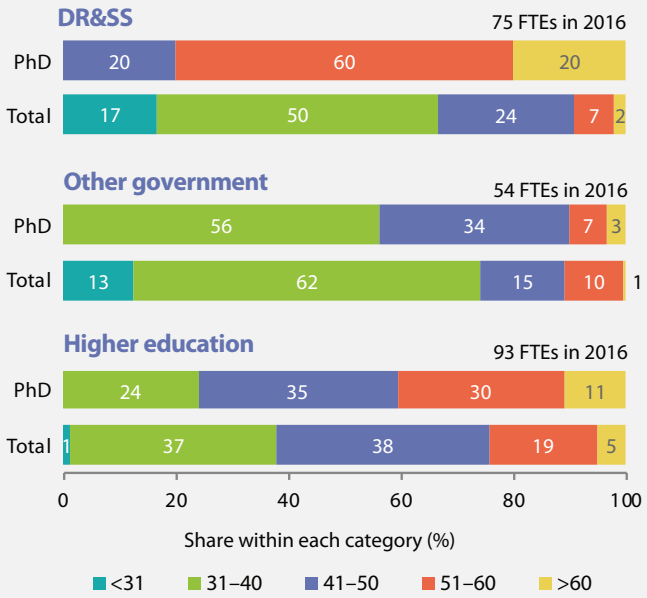
Agricultural researchers by sector and qualification level

The number of PhD-qualified researchers employed in the higher education sector surpassed the number employed at government sector during 2008–2016 (in full-time equivalents). In 2016, the share of government researchers with PhD degrees was only 3 percent compared with 42 percent in the higher education sector.



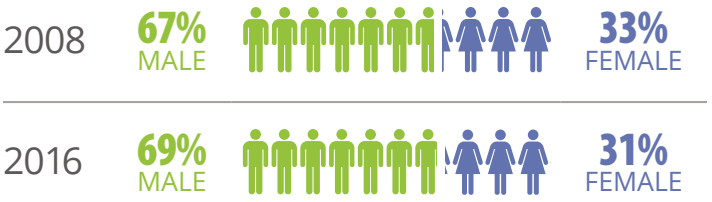
Distribution of agricultural researchers by age bracket

As of 2016, 80 percent of PhD-qualified researchers at DR&SS were in their 50s or 60s. The situation was not as severe in the higher education sector, where about 40 percent of researchers with PhD degrees were over 50 years old. In 2016, most of the researchers employed in the other government agencies were in their 30s and 40s.



Agricultural researchers by gender

Overall, the share of female researchers declined marginally over time, from 33 percent in 2008 to 31 percent in 2016. Shares by institutional category, qualification level, and age bracket also shifted only marginally during this period.



Share of women within each qualification level, 2016

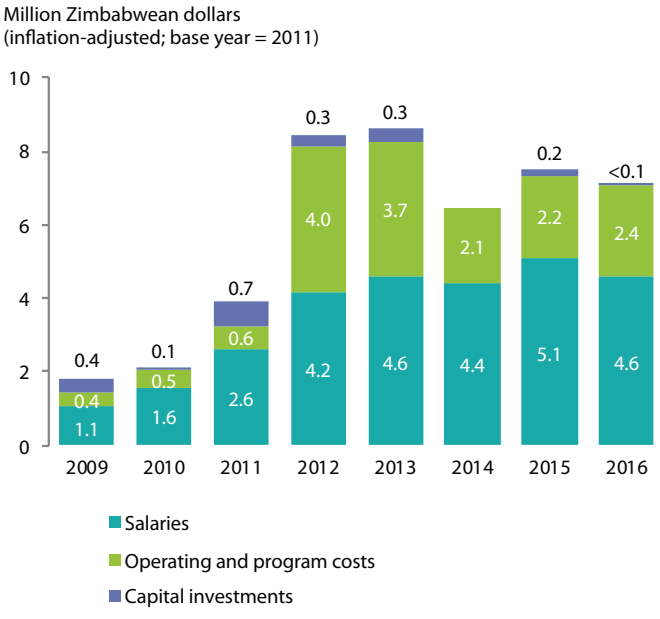
BSc **31%**	MSc **34%**	PhD **28%**

Share of women by age bracket, 2016

< 41 **33%**	41–50 **26%**	> 50 **35%**

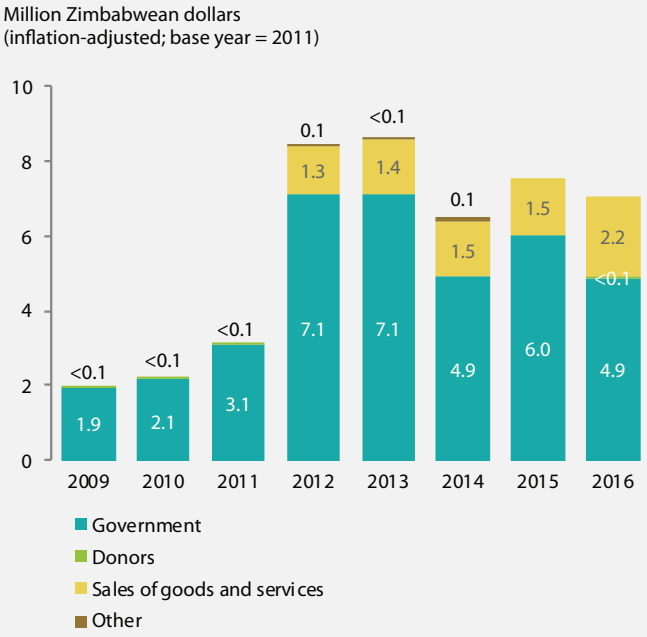
DR&SS's spending by cost category

Due to the economic crisis, salary-related expenses accounted for most of DR&SS' total spending during 2009–2011. This situation improved significantly from 2012, having a positive impact not only on salary-related expenses, but also on the department's operating and program costs. Capital investments remained limited, however.



DR&SS's sources of funding

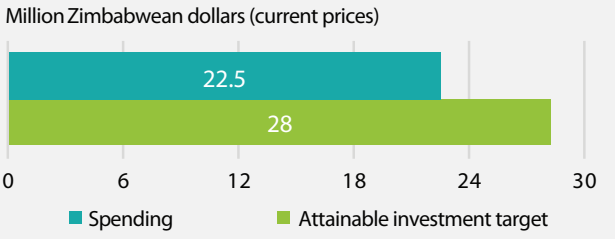
Government contributions to DR&SS more than doubled in inflation-adjusted terms during 2012–2016, and the department also began generating revenues through the sale of goods of services. Funding from foreign donor organizations, however, was negligible throughout the 2009–2016 period.

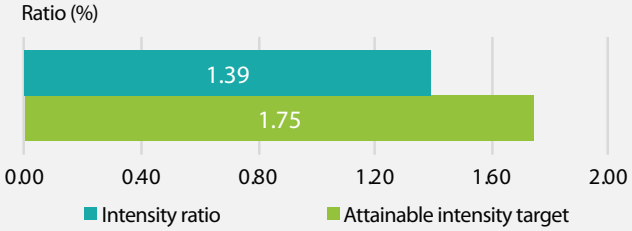


Investment levels needed to close the intensity gap

Zimbabwe invests a relatively high share of its AgGDP in agricultural research; however, comparisons among countries with similar economic structure indicate that Zimbabwe appears to be underinvesting somewhat. An additional 5 million Zimbabwean dollars (in current prices) would have been needed to bridge the gap in 2016.

Actual and attainable spending, 2016



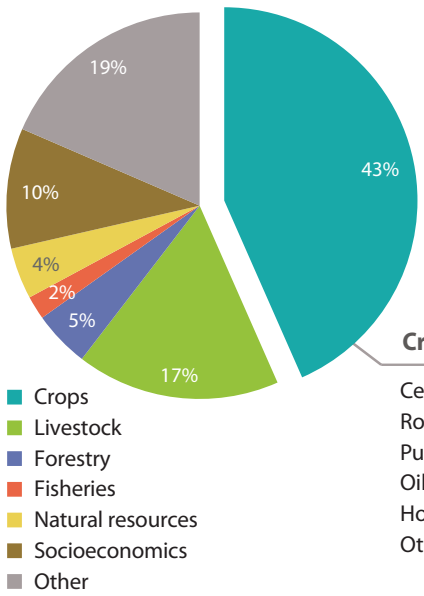


Notes: Traditionally, agricultural research intensity ratios compare investment and AgGDP levels to determine whether countries may be underinvesting. ASTI's Intensity Index incorporates additional factors that account for the size and nature of a nation's economy and hence facilitate more accurate cross-country comparisons. For more information, see https://astinews.ifpri.info/2017/07/01/a-new-look-at-research-investment-goals-for-ssa/.

Agricultural researchers by area of focus

In 2016, 43 percent of the country's FTE researchers conducted crop research, and 17 percent undertook livestock research. Tobacco was the main crop under investigation, accounting for 30 percent of all crop researchers. Other major crops were maize, vegetables, fruit, potatoes, and groundnuts. Major livestock areas under research were cattle and sheep/goats.

Share of researchers, 2016



Crop categories

Cereals	8 %
Roots and tubers	4 %
Pulses	2 %
Oil-bearing crops	4 %
Horticultural crops	7 %
Other crops	18 %

Resources for Zimbabwe

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

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

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 and international organizations is excluded.
- 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)
DR&SS	Department of Research and Specialist Services
DVLS	Department of Veterinary and Livestock Services
PPP(s)	purchasing power parity (exchange rates)
R&D	research and experimental development

ABOUT ASTI AND IFPRI

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.

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