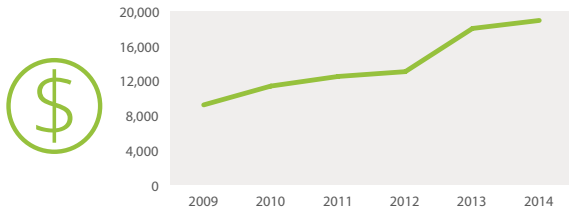


DEMOCRATIC REPUBLIC OF CONGO

Léa Vicky Magne Domgho, Lunze Lubanga, and Gert-Jan Stads

AGRICULTURAL RESEARCH SPENDING



Million Congolese francs (2011 constant prices)

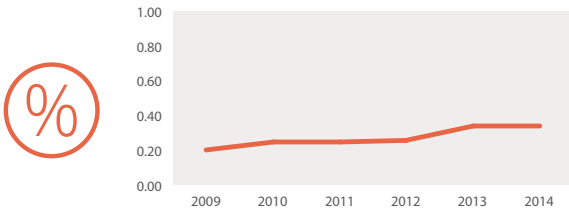
19,026.6

Million PPP dollars (2011 constant prices)

36.5

	BURUNDI	RWANDA	UGANDA
Million Congolese francs (2011 constant prices)			
Million PPP dollars (2011 constant prices)	13.1	39.6	152.5

SPENDING INTENSITY

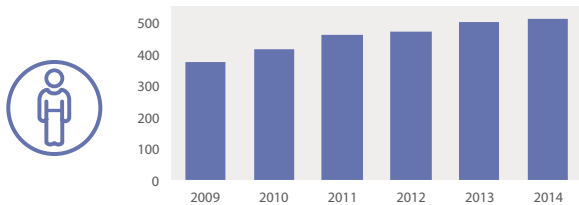


Agricultural research spending as a share of AgGDP

0.34%

	BURUNDI	RWANDA	UGANDA
Agricultural research spending as a share of AgGDP	0.46%	0.67%	0.97%

AGRICULTURAL RESEARCHERS



Full-time equivalents

512.8

Share of researchers with MSc and PhD degrees

40%

	BURUNDI	RWANDA	UGANDA
Full-time equivalents	141.4	169.3	477.9
Share of researchers with MSc and PhD degrees	76%	77%	80%

Notes: Data above are for 2014. 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 www.asti.cgiar.org/DRCongo/directory for an overview of DR Congo's agricultural R&D agencies.



Rapid rise in spending

Between 2009 and 2014, DR Congo's agricultural research spending doubled (in inflation-adjusted terms) following government efforts to revitalize the agricultural sector and the launch of a number of donor-funded projects, including PDPC, PARRSA, and PAPA KIN. Spending as a share of AgGDP rose from 0.20 to 0.34 percent during this period. Despite this rapid growth, agricultural research investment still falls short of the minimum 1 percent target recommended by the African Union and the United Nations, and remains too low to sustain DR Congo's needs.



Capacity constraints

Agricultural researcher numbers grew by nearly 40 percent during 2009–2014, although most of these newly recruited researchers held only BSc or MSc degrees. INERA and the other government agencies continue to lack a critical mass of scientists qualified to the PhD level (and many of those with PhD degrees are approaching retirement age). Low public-sector salaries act as a disincentive for younger PhD-qualified scientists to pursue careers in research; many choose careers in the private sector instead.



Outdated infrastructure

Numerous factors present acute challenges to the effective conduct of agricultural research in DR Congo, including derelict buildings, equipment that has fallen in disrepair, insufficient access to vehicles to conduct field research, frequent power outages that disrupt trials, unreliable Internet access, lack of up-to-date computer technology and software, and poor communication channels between headquarters and remote stations across this vast country. Large-scale capital investments are urgently needed to address these myriad issues.

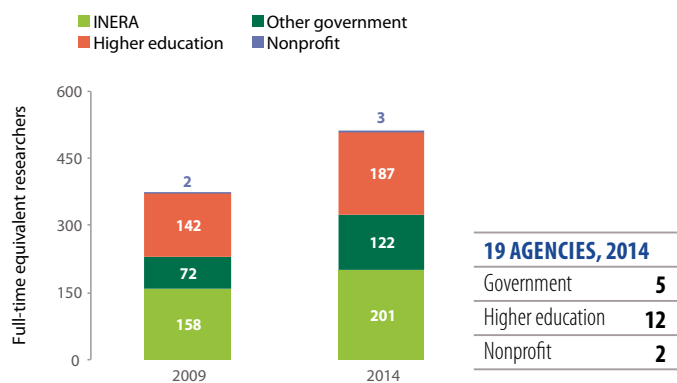


Pooling scarce resources

Given the many constraints that agricultural research agencies in DR Congo are facing, the scarce resources of universities and government agencies need to be pooled more effectively. By collectively identifying research priorities and sharing staff and infrastructure, these agencies could create synergies in conducting research and ultimately in generating outputs that would enhance the quantity and quality of agricultural production. The government has an important role to play in this regard in terms of providing the necessary policy environment to stimulate cooperation.

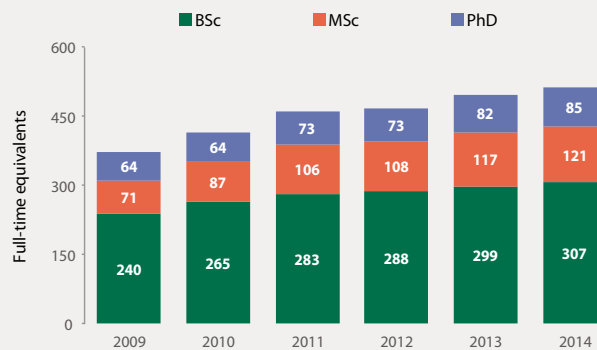
Institutional composition of DR Congo's agricultural research

Between 2009 and 2014, the total number of agricultural researchers rose steadily (in FTEs), not just at INERA, but at the other research agencies too. In 2014, 39 percent of DR Congo's agricultural researchers were employed at INERA, 24 percent at other government agencies, 36 percent at one of the universities, and 1 percent at nonprofit agencies.



DR Congo's agricultural researchers by qualification level

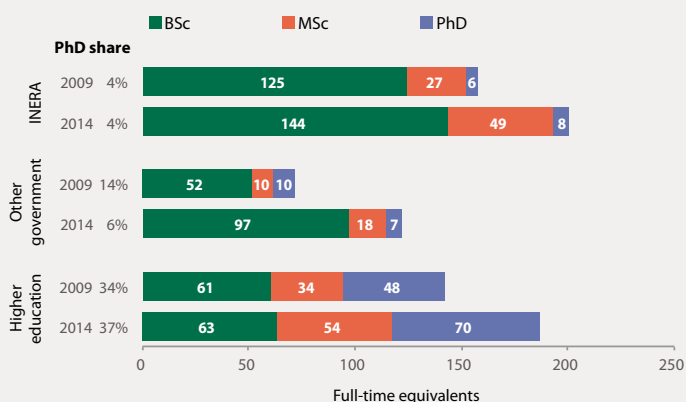
Growth in the country's total number of agricultural researchers during 2009–2014 occurred primarily among researchers qualified to the BSc- and MSc- levels. As of 2014, just 17 percent of DR Congo's agricultural researchers held PhD degrees; 24 percent held MSc degrees; and 60 percent held BSc degrees.



Note: Data exclude BSc-qualified support staff who do not hold official researcher status.

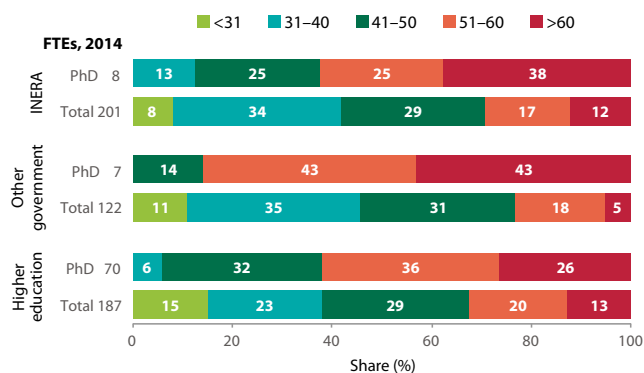
DR Congo's agricultural researchers by sector and qualification level

INERA and the other government agencies are challenged by a severe lack of researchers qualified to the PhD level. Universities employ the bulk of DR Congo's agricultural scientists with PhD degrees, but their teaching commitments, combined with a lack of support staff, make it difficult for them to conduct research effectively.



DR Congo's agricultural researchers by age bracket

As of 2014, nearly two-thirds of DR Congo's PhD-qualified agricultural researchers were in their 50s or 60s and approaching retirement. Fourteen of INERA's young researchers are currently undertaking PhD training at Congolese universities, which will positively shift the future age balance. However, much more PhD training is needed to maintain long-term capacity.



DR Congo's MSc- and PhD-qualified agricultural researchers by discipline

Among PhD-qualified researchers, plant breeding and geneticists, soil science, and zoology/entomology constitute the largest disciplines. Among MSc-qualified researchers, the largest disciplines included plant breeding, (agro)forestry, and soil sciences. DR Congo lacks a critical mass of animal breeders, veterinarian researchers, and seed scientists.

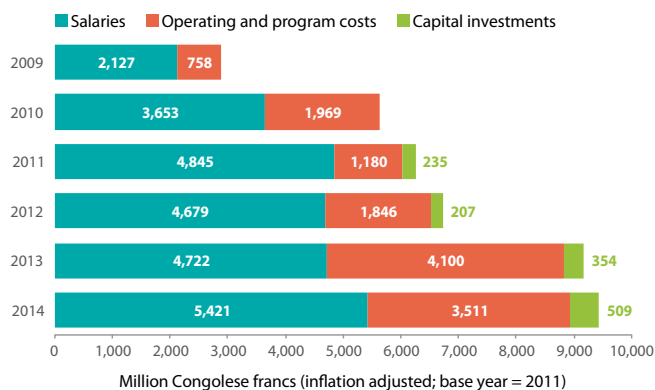
Agricultural researchers, 2014	FTEs		Share (%)	
	MSc	PhD	MSc	PhD
Plant breeding/genetics (incl. biotechnology)	20	13	16	15
Plant pathology	8	4	6	5
Botany	4	3	3	3
Seed science and technology	1	–	1	–
Other crop sciences	9	2	7	2
Animal breeding/genetics	2	3	2	3
Animal husbandry	1	1	1	2
Animal nutrition	2	4	2	4
Poultry	–	1	–	1
Veterinary medicine	2	2	2	2
Zoology/entomology	5	7	4	9
Other animal and livestock	3	5	2	5
Forestry and agroforestry	15	4	12	4

Agricultural researchers, 2014	FTEs		Share (%)	
	MSc	PhD	MSc	PhD
Fisheries and aquatic resources	7	3	5	3
Soil sciences	11	11	9	13
Natural resources management	5	1	4	1
Water and irrigation management	1	1	1	2
Ecology	5	2	4	2
Biodiversity conservation	3	1	3	2
Food sciences and nutrition	6	6	5	7
Socioeconomics (incl. agricultural economics)	8	4	7	4
Extension and education	1	1	1	1
Other sciences	3	8	2	10
Total	121	85	100	100

Notes: Data are estimates based on an agency sample representing 64 percent of the total number of FTE researchers in the government and higher education sectors. Nonprofit agencies are excluded.

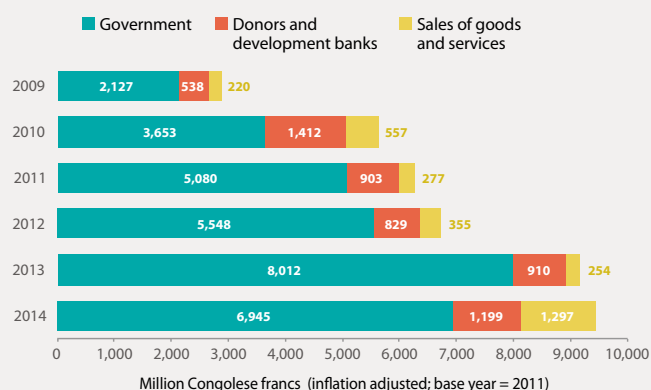
INERA's spending by cost category

INERA's spending more than tripled between 2009 and 2014, primarily in response to higher salary-related expenses. Increased government funding and the launch of PDPC, PAPA KIN, and PARRSA also drove increased levels of operating and program costs, as well as capital investments, over time.



INERA's funding sources

The government's commitment to revitalizing DR Congo's agricultural sector led to significantly higher government funding allocations to INERA over time. On average, the government contributed 78 percent of INERA's funding during 2009–2014, donor and development funding accounted for 14 percent, and internally generated revenues represented 7 percent.



DR Congo's share of female researchers

In 2014, just 10 percent of DR Congo's agricultural researchers were women, a marginal increase from the 9 percent share recorded in 2011. Female participation is particularly low among PhD-qualified researchers. INERA and the other government agencies currently employ no women with PhD degrees.



By qualification level, 2014

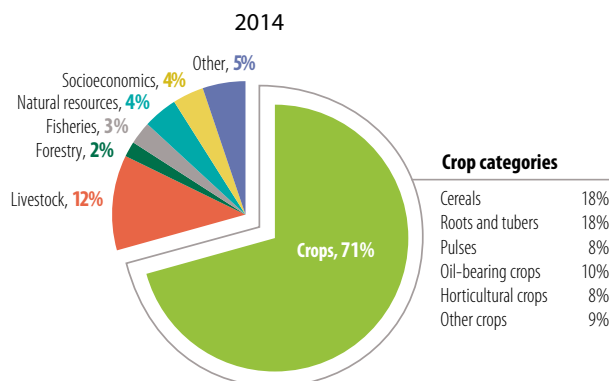
BSc	11%	MSc	11%	PhD	4%
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By age bracket, 2014

< 41	15%	41–50	10%	> 50	3%
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DR Congo's agricultural researchers by area of focus

In 2014, 71 percent of DR Congo's agricultural researchers focused on crops, while livestock research represented 12 percent. The most researched crops were cassava, maize, and beans, followed by rice, soybeans, groundnuts, fruits, and sweet potatoes.



INERA's recently released crop varieties

During 2012–2014, INERA released seven new varieties, including two disease-tolerant varieties and one biofortified variety of cassava, two yield-enhancing varieties of maize, one iron-fortified bean variety, and a disease-resistant sweet potato variety.

Crop	Number of varieties, 2012–2014
Cassava	3
Maize	2
Beans	1
Sweet potato	1
Total	7

INERA's recent peer-reviewed publications

During 2012–2014, INERA's researchers published an average of 10 journal articles, books, and book chapters per year. At just 0.05, the average number of peer-reviewed publications per researcher per year is extremely low.

Type	Number of publications, 2012–2014 annual average	Per FTE researcher
Journal articles		
International	2.0	0.010
Regional	2.7	0.013
National	4.0	0.020
Books	0.7	0.003
Book chapters	1.0	0.005
Total	10.3	0.052

Resources for DR Congo

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



ASTI's **agency directory** provides a view of agencies that conduct agricultural research in DR Congo, 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 is excluded due to lack of available data.
- ▶ 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
DR Congo	Democratic Republic of Congo
FTE(s)	full-time equivalent(s)
INERA	National Agricultural Study and Research Institute
PAPAKIN	Program Supporting Value Chains for Food Crops and Market Gardens in Kinshasa
PARRSA	Project Supporting Agricultural Rehabilitation and Recovery
PDPC	Growth Poles for Development Project
PPP(s)	purchasing power parity (exchange rates)
R&D	research and development

ABOUT ASTI, IFPRI, AND INERA

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 Study and Research Institute (INERA)** is DR Congo's principal agricultural research agency. It concentrates primarily on crop, livestock, forestry, and fisheries research.

ASTI/IFPRI and INERA gratefully acknowledge participating agricultural R&D agencies for their contributions to the data collection and preparation of this factsheet. ASTI also acknowledges the Bill & Melinda Gates Foundation and CGIAR Research Program on Policies, Institutions, and Markets for their 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 INERA.

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