

AGRICULTURAL R&D IN TOGO

An Assessment of the Togolese Agricultural Research Institute

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OVERVIEW OF NATIONAL AGRICULTURAL R&D

Six public agencies conduct agricultural research in Togo. The Togolese Agricultural Research Institute (ITRA) is the largest by far, accounting for more than 70 percent of Togo’s full-time equivalent (FTE) agricultural researchers in 2011.¹ ITRA conducts research on crops, livestock, fisheries, natural resource management, and food technology. In addition to its headquarters and stations in Lomé, the institute operates research centers in each of the country’s four agroecological zones: the coast, forest, humid savannah, and dry savannah. In addition to ITRA, the Plant Protection Directorate (DPV) and Agricultural Statistics, Information, and Documentation Directorate (DSID) are the only other government entities that conduct agricultural R&D, albeit at very limited levels. The three higher education agencies that conduct agricultural R&D—the Advanced School of Agronomics (ESA), Faculty of Science, and Advanced School of Biological and Food Technology (ESTBA)—all fall under the University of Lomé (UL) and together employed 32 FTE agricultural researchers in 2011. ESA is the largest of the three (22 FTEs in 2011) and conducts research on plant virology, biotechnology, soil fertility management, farm mechanization, postharvest

conservation, and socioeconomics. No nongovernmental organizations or private-sector companies were identified as conducting in-house R&D; some, however, do outsource their research to ITRA and UL.

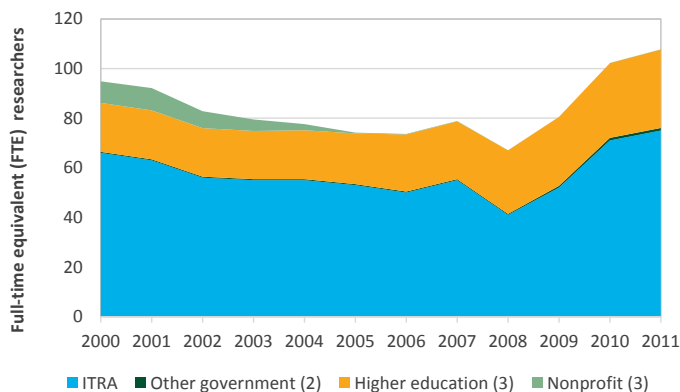
After a period of steady decline, the national number of agricultural researchers in Togo increased rapidly in response to a general public-sector recruitment competition in 2009, which prompted the influx of a large number of researchers (Figure 1). Total agricultural R&D spending in Togo fell by nearly half during 2000–2011 (Figure 2). The country’s 2011 intensity ratio (at 0.42 percent) was well below the 1-percent minimum investment target recommended by the New Partnership for Africa’s Development and the United Nations.

ITRA’S CURRENT STATUS

Institutional Issues

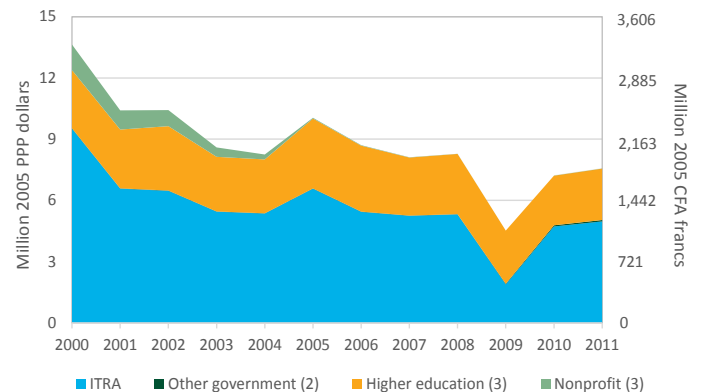
- Unlike their university-based counterparts, ITRA’s researchers are not given official status but are instead categorized as public servants. This means that their salaries are significantly lower, which makes it extremely difficult for ITRA to attract and retain well-qualified researchers.

Figure 1. Agricultural researchers by institutional category, 2000–2011



Source: Compiled by authors from ASTI–ITRA data.
Notes: Other government comprises DPV and DSID; Higher education comprises ESA, ESTBA, and the Faculty of Science, all under the University of Lomé; Nonprofit comprises APAF, GLOBE, and UCJG. For full details of the agencies included in the dataset, see www.asti.cgiar.org/togo.

Figure 2. Agricultural research spending by institutional category, 2000–2011



Source: Compiled by authors from ASTI–ITRA data.
Notes: Other government comprises DPV and DSID; Higher education comprises ESA, ESTBA, and the Faculty of Science, all under the University of Lomé; Nonprofit comprises APAF, GLOBE, and UCJG. For full details of the agencies included in the dataset, see www.asti.cgiar.org/togo.

- The Ministry of Agriculture can second experienced researchers to other ministerial departments at will. ITRA loses one or two highly qualified researchers this way each year.
- Linkages with the Institute of Consulting and Technical Support (ICAT), the country's main agricultural extension agency, are weak, and effective communication mechanisms between farmers and researchers are lacking.
- Private-sector linkages are also weak; new technologies are not adopted (or commercialized) by the private sector.

Human Resources

- Just 6 of ITRA's 78 researchers (8 percent) hold PhD degrees, and 4 of these PhD-qualified researchers are approaching retirement age.
- Training opportunities have been limited, but the recent launch of the West Africa Agricultural Productivity Program (WAAPP) is set to change that. In 2012, 30 researchers were proposed to receive grants for MSc- and PhD-level training under WAAPP, taking into account existing skill gaps, and where researchers should be trained (some in Togo, and others in other West African countries). Some of the training has already begun.
- ITRA lacks a critical mass of well-qualified researchers in a number of key research areas. There are no maize, rice, or sorghum breeders, and the last researcher in the soil

fertility program retired in 2013. The programs on legumes, livestock and animal biotechnology, water management, and forest seeds only have two researchers each. The animal health research program employs only one researcher (Table 1).

- Women constitute the majority of farmers but represent only 9 percent of ITRA's researchers. Of the 34 researchers recruited during 2008–2012, only 2 were female.

Financial Resources

- Government funding to ITRA is insufficient, and barely enough to cover the institute's salary bill. As a result, ITRA is highly dependent on funding from donors and development banks.
- CORAF/WECARD and AfricaRice accounted for 70 percent of ITRA's external funding during 2009–2012, although considerable yearly fluctuations in contributions from both these sources have caused some financial uncertainty.
- Similarly, private funding for cotton research from the Nouvelle Société Cotonnière du Togo (NSCT) fluctuates widely from year to year.
- WAAPP will be the main source of external funding in the coming years; however, only very limited funding for actual research is earmarked under this World Bank loan-funded program. Most of the funds target the (much-needed) rehabilitation of R&D infrastructure and staff training.

Table 1. ITRA's researchers by degree and discipline, 2012

Discipline	FTE researchers by degree qualification			
	PhD	MSc	BSc	Total
Crop protection and plant biotechnology	3	6	2	11
Livestock and aquaculture	0	9	0	9
Cereals (maize, rice, sorghum, and millet) and horticulture	0	8	0	8
Socioeconomics and technology transfer	1	7	0	8
Nutrition and food technology/quality	0	7	0	7
Coffee, cocoa, cola, and fruits	1	5	0	6
Cotton	1	4	0	5
Soils and fertility	0	5	0	5
Roots and tubers (cassava, yams)	0	4	0	4
Plant genetic resources	0	3	0	3
Sheep and goats	0	3	0	3
Cattle and animal biotechnology	0	2	0	2
Water and forestry management	0	2	0	2
Legumes (cowpeas, groundnuts, soybeans, and beans)	0	2	0	2
Seeds and plants	0	1	1	2
Animal health	0	1	0	1
Share (%)	8	88	4	100
TOTAL FTEs	6	69	3	78

Source: Compiled by authors from ASTI/IFPRI–CORAF/WECARD survey data.

R&D Infrastructure

- ITRA's entomology, phytopathology, and virology laboratories, as well as its animal research unit, are not operational due to dilapidated equipment and infrastructure. The remaining laboratories (with the exception of the biosecurity laboratory in Lomé) also have extremely outdated equipment (Table 2).

Table 2. The condition of ITRA's research laboratories

Research station	Laboratory/location	Condition
Direction Scientifique (1)	• Crop protection and biosecurity, Lomé	• Recently renovated and equipped with state-of-the-art technology
Direction des laboratoires (3)	• Food quality control, Lomé	• Operational with fairly adequate equipment
	• Food technology, Lomé	• Operational with inadequate equipment
	• Soil, Lomé	• Operational, but most of the equipment is derelict
Forestry zone agricultural research center (1)	• Plant pathology and virology, Kpalimé	• Nonfunctional due to derelict facilities
Humid savanna zone agricultural research center (2)	• Entomology, Kolokope	• Nonfunctional due to derelict facilities
	• Animal health, Sotouboua	• Nonfunctional due to derelict facilities

Source: Compiled by authors from ASTI/IFPRI–CORAF/WECARD survey data.

- The biosecurity laboratory has recently been renovated and equipped with state-of-the-art technology with grant funding provided by the West African Economic and Monetary Union (UEMOA). Unfortunately, researchers and technicians received no training on how to operate the new equipment, so much of it remains idle.
- ITRA's livestock and poultry stations will be upgraded under WAAPP, although rehabilitation has yet to begin.
- ITRA also lacks office space: at the Dryland Savanna Agricultural Research Center (CRASS) and the Coastal Agricultural Research Center (CRAL), up to four researchers can be required to share a single office.
- Power cuts are frequent, and Internet access outside Lomé is unreliable.

Research Outputs

- The number of new varieties released by ITRA in recent years is extremely low compared with other countries in West Africa. ITRA released one new cotton variety (STAM129) in 2002 and adapted two new AfricaRice rice varieties (ARICA1 and ARICA2) in 2012.

Table 3. ITRA's scientific publications, 2008–2012

Publications	2008	2009	2010	2011	2012	Yearly average
National publications						
Journal articles	4	4	2	1	1	2.4
Books	0	0	1	0	0	0.2
Book chapters	0	0	0	0	0	0.0
Scientific articles/publications	0	0	0	1	3	0.8
Papers and posters presented at conferences	2	0	1	0	0	0.6
Nonscientific publications (such as newspaper/magazine articles)	1	0	0	0	1	0.4
Other (theses)	0	0	0	5	0	1.0
Total	7	4	4	7	5	5.4
<i>Average per researcher per year</i>						<i>0.07</i>
International publications						
Journal articles	0	0	0	0	0	0.0
Books	0	0	0	0	0	0.0
Book chapters	0	0	0	0	0	0.0
Scientific articles/publications	1	2	2	6	1	2.4
Papers and posters presented at conferences	0	0	0	0	1	0.2
Nonscientific publications (such as newspaper/magazine articles)	0	0	0	0	0	0.0
Total	1	2	2	6	2	2.6
<i>Average per researcher per year</i>						<i>0.03</i>

Source: Compiled by authors from ASTI/IFPRI-CORAF/WECARD survey data.

- ITRA did release a number of new technologies in recent years, none of which were patented.
- ITRA's number of scientific publications is extremely low compared with other countries. ITRA's researchers are insufficiently encouraged to publish in national or international journals (Table 3).

CONCLUSIONS AND POLICY RECOMMENDATIONS

In order to more effectively accomplish its mission, ITRA was restructured in 2008 to become a semiautonomous public institution, giving it greater institutional freedom and autonomy in setting its research agenda, but not in terms of financial or human resource management. As previously mentioned, ITRA has a number of challenges in terms of its financial resources, human resources, and infrastructure. Government funding only covers staff salaries, so additional funding to operate research programs and maintain facilities needs to be raised through external sources. The fact that ITRA's researchers lack official status and hence are paid significantly less than their university-based counterparts means that ITRA will continue to struggle to recruit, retain, and motivate well-qualified and experienced researchers. Similarly, the overall rundown state of the institute's research infrastructure makes it extremely challenging for researchers to work effectively. In addition to the general lack of PhD-qualified researchers, the degree of secondment of highly qualified personnel to other departments further exacerbates the lack of expertise within the institute.

WAAPP is being implemented with a view to addressing these problems to some degree, with a focus on relevant infrastructure and training, but not so much on actual research programs themselves. As a means of ensuring the institute fully benefits from the training initiatives under WAAPP, upon completing their training, researchers who are awarded scholarships will be required to return to employment at the institute for a minimum of 10 years.

The government is advised to guide ITRA in instituting strategies to attract, retain, and motivate researchers focusing on

- increasing government funding levels to enable ITRA to operate more competitively, both in terms of researcher salaries and benefits, and facilities and equipment (other than those slated to be upgraded under WAAPP);
- developing new strategies and mechanisms for raising funding from a variety of sources, including the private sector;
- overcoming the current public servant status of ITRA's researchers to enable salary levels to be raised to competitive rates;
- exploring other incentive measures to attract and retain researchers, including better employment benefits, improved working conditions, greater promotional opportunities, and so on.

- maintaining and continuing to build research capacity, capitalizing on advances that will be made under WAAPP
- training junior researchers to the MSc- and PhD-degree levels;
- strengthening the capacity of senior researchers to conceive, structure, and run research programs; lead and mentor staff; generate additional sources of funding; and so on; and
- increasing the amount of funding available for research grants.

FOR FURTHER READING

www.asti.cgiar.org/pdf/factsheets/togo-factsheet.pdf

NOTES

1. FTEs only take into account the time researchers actually spend on research, as opposed to other activities like teaching or time spent on secondment to other agencies.

ABOUT THE ASSESSMENT

Given the importance of agriculture in West Africa, the Economic Community of West African States (ECOWAS) asked the West and Central African Council for Agricultural Research and Development (CORAF/WECARD) to undertake an in-depth assessment of agricultural research capacity in the region focusing on key institutional, human resource, and financial resource issues. The assessment is a critical input into the development of national and regional agricultural policy recommendations, which will in turn feed into a regional agricultural research strategy for West Africa.

To accomplish the assessment, CORAF/WECARD requested the support of the Agricultural Science and Technology Indicators (ASTI) initiative of the International Food Policy Research Institute (IFPRI). ASTI facilitated the assessment in six countries—Benin, Burkina Faso, Ghana, Senegal, Sierra Leone, and Togo—which included a quantitative survey on human and financial resources, R&D infrastructure, and R&D outputs; a series of interviews with selected research and managerial staff; and a staff motivation survey distributed to a selected group of researchers and managerial staff.



ABOUT THE AUTHORS

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ABOUT ASTI, IFPRI, AND CORAF/WECARD

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 **West and Central African Council for Agricultural Research and Development (CORAF/WECARD)** is a nonpolitical organization of the national agricultural research systems of 23 countries of West and Central Africa. It aims to increase the efficiency of agricultural research in the region in order to facilitate economic growth, food security, and export competitiveness through productive and sustainable agriculture.

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