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National Agricultural Research Institute of Benin

BENIN

RECENT DEVELOPMENTS IN AGRICULTURAL RESEARCH

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LONG-TERM INVESTMENT AND CAPACITY TRENDS IN AGRICULTURAL R&D

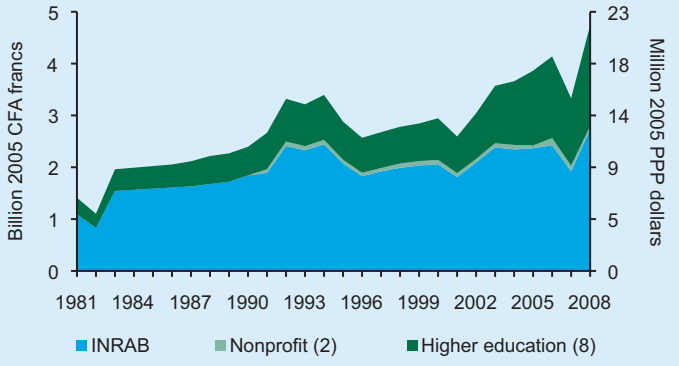
Since the turn of the millennium, total investments in agricultural research and development (R&D) in Benin have been on the increase. In 2008, the country's expenditures totaled approximately 4.7 billion CFA francs or 21.6 million PPP dollars (both in constant 2005 prices) (Figure 1; Table 1). Unless otherwise stated, all dollar values in this note are based on purchasing power parity (PPP) exchange rates. PPPs reflect the purchasing power of currencies more effectively than do standard exchange rates because they compare the prices of a broader range of local—as opposed to internationally traded—goods and services. Total agricultural R&D capacity levels in Benin reveal a negative trend. In 2008, the country employed 115 full-time equivalent (FTE) research staff, compared with 120 FTEs in 2000 (Figure 2). This attrition mainly resulted from staff retirement at National Agricultural Research Institute of Benin (INRAB) in combination with a public-sector recruitment freeze that has been in place since the 1980s.

INRAB is Benin's main agricultural research agency, accounting for close to 60 percent of the country's agricultural R&D expenditure and capacity. INRAB was founded in 1992 as a scientific and technical institution, endowed with a legal personality and financial autonomy. Its supervising agency is the Ministry of Agriculture, Livestock and Fisheries (MAEP). INRAB's mission is

Key Trends Since 2000

- Agricultural research and development (R&D) expenditures in Benin have gradually increased reflecting enhanced government funding and larger involvement in agricultural R&D by the higher education sector.
- The National Agricultural Research Institute of Benin (INRAB) is the country's main agricultural R&D agency. INRAB's research capacity shows a decrease since 2000. The institute's difficulty in maintaining qualified staff is directly related to the large gap with salaries offered by universities and international organizations. Since the introduction of a public sector recruitment ban in 1986, INRAB can only offer fixed-term contracts that provide limited training and career opportunities to scientists.
- Despite the recent increase in government funding, agricultural research in Benin remains largely dependent on donor support.
- Given the high average age of research staff, a key priority for agricultural R&D in Benin is training for its younger scientists.

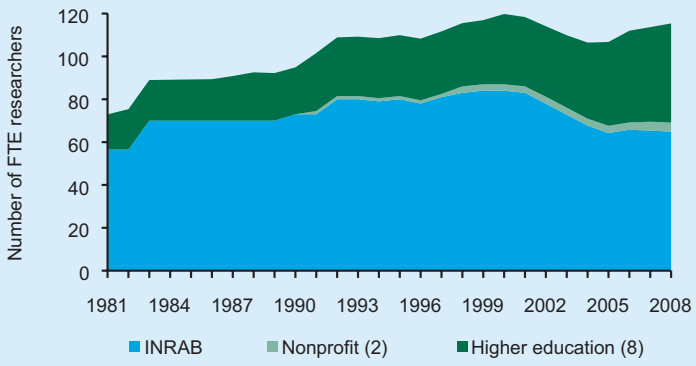
Figure 1—Agricultural R&D spending adjusted for inflation, 1981–2008



Sources: Calculated by authors from ASTI–INRAB 2002-03 and 2009.

Notes: INRAB was known as the Agricultural Research Directorate until 1992. Figures in parentheses indicate the number of agencies in each category. For more information on coverage and estimation procedures, see the Benin country page on ASTI's website at www.asti.cgiar.org/benin.

Figure 2—Agricultural research staff in full-time equivalents, 1981–2008



Sources: Calculated by authors from ASTI–INRAB 2002-03 and 2009.

Notes: Figures in parentheses indicate the number of agencies in each category. Data include French expatriate research staff employed at INRAB.

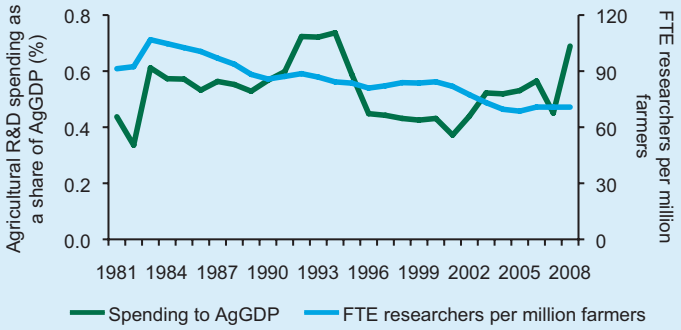
Table 1—Overview of agricultural R&D spending and research staff levels, 2008

Type of agency	Total spending			Total staffing	
	CFA francs	PPP dollars	Shares	Number	Shares
	(million 2005 prices)		(%)	(FTEs)	(%)
INRAB	2,724.7	12.4	57.5	64.9	56.2
Nonprofit (2)	68.5	0.3	1.4	4.2	3.6
Higher education (8)	1,944.1	8.9	41.0	46.3	40.1
Total (11)	**4,737.3**	**21.6**	**100**	**115.4**	**100**

Source: ASTI–INRAB 2009.

Notes: Figures in parentheses indicate the number of agencies in each category. Total research staff numbers and spending include French expatriates employed at INRAB and their salaries, respectively.

Figure 3—Intensity of agricultural research spending and capacity, 1981–2008



Sources: Calculated by authors from ASTI–INRAB 2002-03 and 2009; FAO 2009; and World Bank 2009.

to generate technologies for the farming community that are in keeping with natural resource conservation goals, as well as to foster scientific progress. The institute consists of its headquarters in Cotonou and six agricultural research centers (CRAs) that are dispersed throughout the country, as follows: three centers with a regional focus, i.e. for southern Benin (CRA Sud in Niaouli), for the central area (CRA Centre in Savè) and for the north (CRA Nord in Ina); two commodity-based centers (cotton and other fibres in Parakou, and perennial plants in Pobè), and the CRA Agonkanmey, which has a national scope (Gaillard 2008). In 2008, INRAB employed 65 FTE researchers and 252 FTE support staff, which means staffing levels were lower than those recorded during the 1990s. For international comparability purposes, total INRAB staff includes the 11 members with BSc-level degrees who are not given the official status of agricultural researcher.

Since the Government of Benin declared a halt to issuing permanent-employment contracts to state employees in 1986, INRAB can only offer fixed-term contracts. Currently, approximately two thirds of the institute's researchers and technicians are contract workers. This situation clearly places INRAB at a disadvantage, since fixed-term contracts do not include the same training benefits, or the same career opportunities as do permanent-employment contracts, and consequently contract staff are more liable to leave. A current planning activity focused on strengthening INRAB's capacity should, however, open the way to converting contract workers into permanent state employees, as well as to recruiting new staff. In contrast to staff levels, INRAB's level of expenditure has been on the increase since the turn of the millennium, currently standing at 2.7 billion CFA francs, or 12.4 million dollars (2005 prices). This increase is largely due to the national government's greater willingness to provide funding for agricultural research, particularly as of 2007.

In Benin, two nonprofit agencies perform agricultural research: the Benin Centre for the Environment and for Economic and Social Development (CEBEDES) and the Network for Sustainable Agricultural Development (REDAD). In 2008, CEBEDES employed three FTE researchers and REDAD one FTE researcher. Research carried out in these two institutions is rather of a socioeconomic nature but it concerns topics that are connected with agriculture.

Since the 1990s, the share of the higher education sector in Benin's agricultural R&D has grown—from 23 percent in 1990 to 40 percent in 2008. The main increase in agricultural R&D capacity has been reported by the University d'Abomey-Calavi (UAC), the country's principal higher education agency in the field of agriculture. In 2008, UAC employed 44 FTE researchers, compared with 20 FTEs in 1990. Seven UAC units have been found to be actively involved in agricultural R&D, of which the most important is the Faculty of Agricultural Sciences (FSA-UAC) with five departments and a staff count of 25 FTEs (2008). The Faculty of Agronomy of the University of Parakou (FA-UP) is the only higher education agency involved in agricultural R&D that is not placed under the supervision of UAC. In 2008, FA-UP employed just 2 FTE agricultural researchers. It should be noted that, on average, university salaries exceed those paid by INRAB by 25 to 30 percent, which partly explains why universities have succeeded in strengthening their capacity at the expense of INRAB.

In 2008, 17 percent of all Beninese agricultural researchers were female. This share of female scientists represents an improvement over the 12 percent share recorded in 2001 (ASTI–INRAB 2002-03 and 2009). INRAB's overall support-staff-to-researcher ratio averaged 2.6 in 2008 and consisted of 1.1 technicians, 0.3 administrative staff, and 1.1 other support staff for every researcher.

In 2008, Benin's total public agricultural R&D spending as a percentage of agricultural GDP (AgGDP)—a common,

ASTI Website Interaction

- Underlying datasets can be downloaded using ASTI's data tool at www.asti.cgiar.org/data.
- This brief presents aggregated data; additional graphs with more detailed data are available at asti.cgiar.org/benin/datatrends.
- A list of the 1 government, 2 nonprofit and 8 higher education agencies included in this brief is available at asti.cgiar.org/benin/agencies.

www.asti.cgiar.org/benin

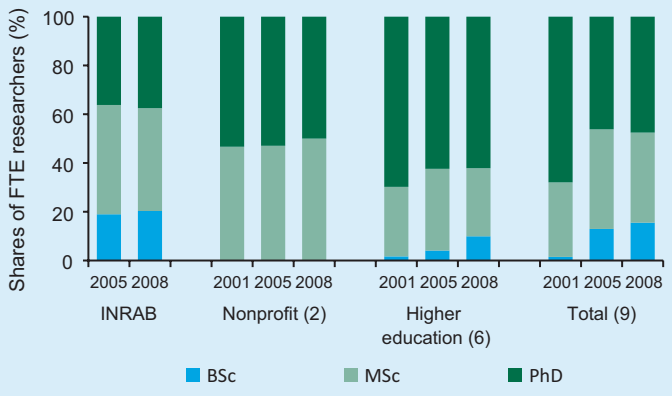
internationally comparable indicator of a country's agricultural R&D investments—was $0.69 for every $100 of agricultural output, which is far higher than the ratios recorded at the turn of the millennium (Figure 3). While pointing to a higher intensity of agricultural research spending than has been recorded in many of the region's countries, such as Togo (0.47) and Niger (0.17), the Benin ratio is nevertheless lower than the equivalent registered in Ghana (0.94). As of 2000, the number of FTE researchers per farmer remained relatively stable; in 2008, Benin employed 71 agricultural FTEs per million farmers.

INSTITUTIONAL STRUCTURE AND POLICY ENVIRONMENT

As previously mentioned, the organizational structure of Benin's agricultural research has gradually changed over the past two decades due to the strengthening role of the higher education sector. At the public-sector level, the World Bank initiated a reform of Benin's national agricultural R&D by creating INRAB in 1992. The first phase of the reform process focused on drawing up a National Plan for Agricultural Research (1994–96), through a participatory approach and with the support of the Danish International Development Agency (DANIDA). The implementation phase was launched in 1999, with AGRAN (from the French title), an initiative to support the management of national agricultural research. The AGRAN project is led by the German development aid agency GTZ, and partly sponsored by the Governments of Denmark and the Netherlands. AGRAN's focus was on facilitating the changes needed to ensure INRAB's transition, from a technical unit under the Ministry of Agriculture to a performing public enterprise, capable of developing efficient technologies based on end-user needs. With AGRAN support, INRAB developed a conceptual framework for institutionalizing demand-driven agricultural research in Benin.

In 2004, AGRAN was integrated into another GTZ program, the Conservation and Management of Natural Resources Program (ProCGRN). Although a significant number of reforms have been launched over the past ten years, their success has been limited because of the public recruitment freeze and a lack of seed funding which have impeded full implementation of the necessary changes.

Figure 4—Researcher qualifications by institutional category, 2001, 2005, and 2008



Sources: ASTI–INRAB 2002-03 and 2009.

Notes: Figures in parentheses indicate the number of agencies in each category. 2001 data for INRAB were unavailable. Higher education excludes UAC's Faculty of Science and Technology (FAST) and the Polytechnical School of Abomey-Caavi (EPAC).

ASTI Website Interaction

- Detailed definitions of PPPs, FTEs, and other methodologies employed by ASTI are available at asti.cgiar.org/methodology.
- The data in this brief are predominantly derived from surveys. Some data are from secondary sources or were estimated. More information on data coverage is available at asti.cgiar.org/benin/datacoverage.
- More relevant resources on agricultural R&D in Benin are available at asti.cgiar.org/benin.

www.asti.cgiar.org/benin

Benin's national research priorities having been established, strategic and participatory agricultural research planning follows by applying a mechanism described as the "annual agricultural research management cycle." This cycle consists of four components, i.e. the following bodies or events: (a) regional– or sector-based research and development committees; (b) a review committee to select research proposals; (c) a monitoring and evaluation procedure to follow up implementation of approved projects; and (d) an annual workshop at which scientists present their research results (INRAB 2004 ; Allagbé et al. 2006). This management cycle has been acclaimed with enthusiasm, although sometimes the review committee's decisions cause controversy.

With a view to strengthening the country's agriculture and boosting national agricultural research, the option of regrouping FSA-UAC and FA-UP is being considered, as well as those departments of the Faculty of Science and Technology (FAST) and of the Polytechnic School of Abomey-Calavi (ÉPAC) that offer training in areas connected with agronomy. Yet it remains to be seen whether these plans will be carried out.

RESEARCH STAFF QUALIFICATIONS AND TRAINING

In 2008, 84 percent of Benin's FTE agricultural researchers were trained to the graduate level, and 48 percent held PhD degrees. The share of scientists with PhD degrees was significantly higher at the higher education agencies (62 percent) than at INRAB (38 percent) or at the nonprofit institutions (50 percent), which is consistent with trends observed in other African countries. Since 2002, FSA-UAC's training offer includes PhD-level courses so that Beninese no longer need to travel abroad to enroll in a PhD program in agricultural sciences. As of 2009, on average, three or four students are expected to obtain a PhD degree from FSA-UAC. All the FSA faculty staff have completed PhD-level training, inter alia in the Netherlands, Belgium, and France. It should be noted that, in order to be able to join the ranks of INRAB's research staff, staff are required to have obtained at least

an MSc-level degree. Nevertheless, BSc-qualified INRAB staff members do carry out research protocols. Women are largely underrepresented in the pool of PhD-qualified staff: in 2008, only three of INRAB's 24 PhD-qualified researchers were female.

Over the past ten years, the French and Danish governments have supported INRAB by offering scholarships to researchers under the age of 35, which has enabled some twenty Beninese to further their education. Eleven INRAB researchers have thus benefited from Danish grants provided under PADSA, a program to support the development of the agricultural sector of Benin. Five of these researchers were trained in Danish universities (two PhD and three MSc degrees) and six completed their "Diplôme d'études approfondies" (DEA) studies at UAC in Cotonou. In addition, INRAB spent some of its core funding on training for several of its researchers and finally, a few staff members succeeded in obtaining grants through their own initiative. This accounts for the successful completion of seven PhD-level trainings (in Benin, France, Germany, and the Netherlands) and two MScs (obtained from Beninese and Belgian universities).

With its researchers averaging around 55 years of age, INRAB has one of the oldest pools of scientists in West Africa. This reality will pose a major challenge to capacity and funding in the coming years as INRAB management will have to attract well-qualified replacement staff and offer degree-level training to existing staff. This situation is exacerbated by the recruitment freeze, which remains applicable to date. INRAB's chronic shortage of staff affects all levels—scientific, administrative, and support. INRAB has recently carried out an assessment of its human resource needs, in response to the government's pledge to support the institute through a capacity building program. The outcome shows that in order to ensure adequate research capacity levels for the next ten years, INRAB will have to recruit 68 PhD-level researchers, 80 "ingénieurs agronomes", and 73 agricultural engineers trained as "ingénieurs des travaux". To meet its demand for technical support, INRAB will have to recruit 220 research technicians with a DEAT (diploma) and 184 with a BEAT (certificate), both in tropical agricultural studies.

Even though universities generally have less difficulty in replacing their contingents of faculty staff, the higher education sector, too, is faced with the challenge posed by an aging pool of scientists: the obstacle cannot be ignored, though it is less daunting in this sector than the reality INRAB faces.

INVESTMENT TRENDS

Cost Categories

During 2001–08, salaries accounted for 28 percent of INRAB's total expenditures, operating costs accounted for 63 percent, and capital costs for 10 percent (Figure 5). In 2008, INRAB's capital investments equaled 4 million dollars (2005 prices) due to the construction costs of the institute's new headquarters, located in Agonkanmey on the outskirts of Cotonou.

Funding Sources

During 2001–08, only one third of INRAB's funding was contributed by the national government. Foreign donors and regional and subregional networks provided 50 percent, while 17 percent of the institute's income was generated internally (mainly through sales of oil palm, maize, and cowpea seeds) (Figure 6). Government funding covers all INRAB staff salaries as well as an annual contribution to the institute's research program, the amount of which has been on the increase in recent years.

Denmark has been involved in funding Benin's agricultural sector since 1997, through PADSA. The first phase of PADSA concluded in 2003; the second phase covered the period 2004–09. With a total budget of 14.4 million CFA francs (in current prices), PADSA aimed to improve livelihood in the rural areas and to increase the agricultural sector's contribution to economic growth, based on sustainable use of natural resources. One of the program's four components consisted in strengthening capacity building within INRAB and in supporting agricultural research in general. PADSA funds have been used to train 11 INRAB scientists and Danish-funded applied-research results have benefited some 500 village communities, farmer organizations and small– or medium-size farming businesses (Ministry of Foreign Affairs of Denmark 2008).

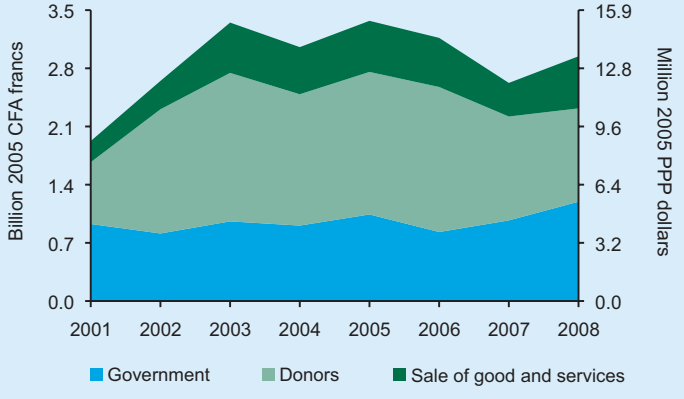
ProCGRN is funded by the German and Beninese governments; its budget totals EUR 12.6 million (in current prices). ProCGRN consists of three phases covering the period 2004–14

Figure 5— Cost category shares of INRAB, 2001–08

Sources: ASTI–INRAB 2002-03 and 2009.

Note : Salary expenditures of expatriate research staff are excluded.

Figure 6—Funding sources of INRAB, 2001–08



Source: ASTI–INRAB 2009.

Note: Donor funding includes the salaries of French expatriate staff employed at INRAB.

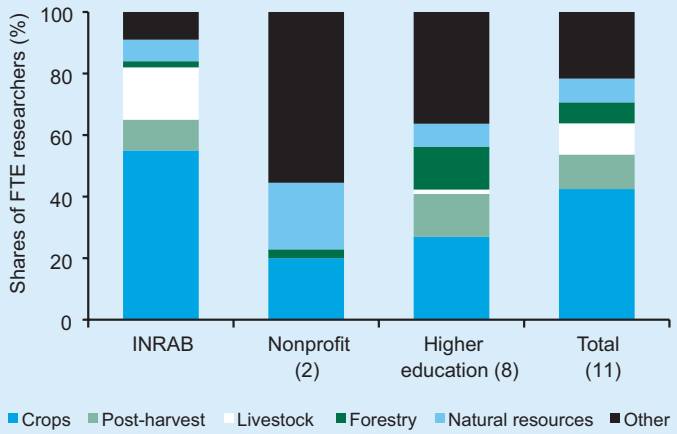
and includes an agricultural R&D component. INRAB's responsibility under this project is to develop technologies to ensure sustainable management of natural resources (soil fertility and farming systems analysis; sustainable watershed, lowland, and forestry management practices). Acting in close cooperation with DANIDA, ProCGRN also contributes to the establishment of a competitive fund to finance implementation of research protocols.

In addition to Denmark and Germany, other external funding sources include the West and Central African Council for Agricultural Research and Development (CORAF/WECARD), AfricaRice, the International Institute of Tropical Agriculture (IITA), the West and Central Africa Collaborative Maize Research Network (WECAMAN), the African Development Bank (AfDB), and the Government of the Netherlands. Furthermore, the national launching in Benin of the CORAF/WECARD–coordinated West African Agricultural Productivity Program (WAAPP), funded through a World Bank loan, is expected to take place in 2011. The aim of WAAPP is to generate and disseminate improved agricultural technologies in the participating countries' top priority areas that are aligned with regional priorities, as identified by CORAF/WECARD. The first phase of WAAPP was launched in 2007; it involved three countries and focused on three priority R&D areas: roots and tubers in Ghana, rice in Mali, and cereals in Senegal. In 2009, as part of planning the second phase, WAAPP-II, seven additional countries were included, one of which is Benin. Benin is to take charge of the priority area maize, for which it is to receive a US$15 million loan (current prices) for a five-year period.

CEBEDES' research program is wholly donor funded; the European Union (EU) is the main donor, while important additional contributions are also made by the governments of individual EU countries such as the Netherlands, Germany, Belgium, Denmark, and France. The International Cocoa Organization (ICCO) and the Netherlands are the contributors supporting REDAD's research activities.

UAC's core research budget is very restricted and most of the university's research is therefore donor funded. In 2006, the UAC vice-rectorate for research sought to revitalize the university's R&D activities by introducing "a UAC policy and science policy strategy" but it had but very limited means at its disposal. The amount that UAC sets aside each year for its entire research program is estimated at 100 million CFA francs (current prices). This allocation includes support for the labs that organize science events. Moreover, funds are drawn from this budget to cover the administration costs of an invitation to bid, the purpose of which is to secure funding for the implementation of some 40 research projects per year. Since 2007, these requests for bids, which at first were conducted on an individual, disciplinary and noncompetitive basis, are being organized on a competitive and multidisciplinary basis. A group of donors jointly finances most of FSA-UAC's research program. One of these donors, the Dutch government, provides its support through the "Netherlands Programme for Institutional Strengthening of Post-secondary Education and Training Capacity (NPT)." In addition, several francophone Canadian and Belgian universities are involved in a long-standing relationship with FSA-UAC and provide regular support to the faculty's research program. In recent years, the German and Danish governments have funded some minor projects, on natural resources and on nutrition. In 2008, FSA-UAC spent a quarter of its total budget (320 million CFA francs) on agricultural R&D activities. The University's Laboratory of Genetics and Biotechnology (LGB-UAC) has an annual budget of approximately 20 million CFA francs (excluding staff salaries), of which 15 million is provided by the Benin Center for Scientific and Technical Research (CBRST) (amounts quoted in current prices). Finally, the list of funding sources includes the International Fund for Agricultural Development (IFAD) which provided support through the Roots and Tubers Development Programme (2001–08) and France's two development aid agencies, the Research Institute for Development (IRD) and the Agricultural Research Center for International Development (CIRAD).

Figure 7—Research focus by major commodity area, 2008



Source: ASTI–INRAB 2009.

Note: Figures in parentheses indicate the number of agencies in each category.

ALLOCATION OF RESEARCH ACROSS COMMODITIES

Given that the allocation of resources across various lines of research is a significant policy decision, detailed information was collected on the number of researchers working in specific commodity and thematic areas (in FTEs). In 2008, 42 percent

Table 2—Crop and livestock research focus by major item, 2008

	INRAB	REDAD	UAC-LGB
Crop items	Shares of FTE researchers (%)		
Cassava	9.7	—	38.0
Yam	2.8	—	38.0
Cotton	13.9	—	—
Rice	9.7	28.6	—
Oil palm	11.1	—	—
Bananas & plantains	2.8	—	9.5
Vegetables	6.9	—	—
Maize	2.8	14.3	—
Other crop	16.7	57.1	9.5
Livestock items			
Sheep and goats	8.3	—	—
Poultry	5.6	—	—
Beef	1.4	—	—
Other livestock	8.3	—	5.1
Total crop and livestock	**100**	**100**	**100**

Source: ASTI–INRAB 2009.

Note: Sample only includes agencies involved in crop and livestock research. Data for FAST and EPAC were unavailable.

of Benin's agricultural researchers conducted crop research. An additional 11 percent were involved in post-harvest research, while livestock accounted for 10 percent, natural resources for 8 percent, and forestry for 7 percent. The category "other" includes the number of researchers concentrating on food security and conducting socioeconomic research.

Commodity Focus

Cassava is the most researched crop in Benin. In 2008, cassava absorbed 10 percent of INRAB's and 38 percent of UAC's Genetics and Biotechnology Laboratory (LGB) researchers involved in crops and livestock, respectively. Other important crops included yam, cotton, rice, oil palm, and bananas and plantains (Table 2). Main livestock commodities were sheep and goats and poultry, accounting for 8 and 6 percent of INRAB's crop and livestock research, respectively.

CONCLUSION

Over the past decade agricultural investments in R&D in Benin have increased as a result of the higher education sector's enhanced role and the national government's increased willingness to provide support. Nevertheless, Benin remains largely dependent on donors for the funding of its agricultural research, and in particular on Denmark and Germany. The country's level of agricultural R&D expenditures is expected to further increase with the 2011 national launching of WAAPP, which will be funded through a World Bank loan.

Notwithstanding these positive expenditure trends, the crisis affecting R&D capacity levels appears to have deepened during 2000–08. INRAB's overall staff levels have dwindled and the average age of its scientists is approximately 55. This situation is due to a public-sector recruitment freeze and the resulting loss of capacity will, in an imminent future, cause severe detriment to the institute. Currently, approximately two thirds of INRAB's researchers and technicians are contract workers, placing the institute at a disadvantage, since fixed-term contracts do not include the same training benefits, or the same career opportunities as do permanent-employment contracts. INRAB and the universities find themselves in close competition for the available funds and this is only likely to increase in the years to come. Since universities offer better working conditions and higher salaries, a growing number of INRAB researchers are striving to find work with university employers.

Stringent measures are required, and without any delay, to enable Benin's agricultural R&D agencies to face the current human resource crisis and increase their competitive advantage. Indeed, in the short term, decisions and urgent steps must be taken to boost scientific cooperation among research actors, to cancel the public-sector hiring freeze, and to provide newly recruited young researchers with training opportunities.

REFERENCES

Allagbé M., S. Belle, T. F. Ogouvidé, and P. B. Agbo. 2006. *Évaluation des programmes régionaux de recherche agricole*. Ministry of Agriculture, Livestock, and Fisheries : Cotonou.

ASTI–INRAB (Agricultural Science and Technology Indicators initiative and National Agricultural Research Institute of Benin). 2002-03 and 2009. ASTI survey. Unpublished surveys.

FAO (Food and Agriculture Organization of the United Nations). 2009. FAOSTAT. <http://faostat.fao.org/site/452/default.aspx>. Accessed November 20, 2009.

Gaillard, J. 2008. *Le système national de recherche scientifique et technique (S&T) du Bénin*. Report prepared for UNESCO. Institut de Recherches pour le Développement: Paris.

INRAB (National Agricultural Research Institute of Benin). 2004. Le cycle de gestion de la recherche. CD-ROM. Cotonou.

Ministry of Foreign Affairs of Denmark. 2008. Agriculture. <http://www.ambcotonou.um.dk/fr/menu/Coop%C3%A9rationAuD%C3%A9veloppement/Agriculture/>. Accessed March 18, 2010.

UAC (Université d'Abomey-Calavi). 2008. Création d'une université d'agriculture au Bénin. <http://www.fsa.bj.refer.org/article.php3?id_article=279>. Accessed April 20, 2010.

World Bank. 2009. *World development indicators 2009*. Washington, D.C.

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IFPRI is one of 15 agricultural research centers that receive their principal funding from governments, private foundations, and international and regional organizations, most of which are members of the Consultative Group on International Agricultural Research (www.cgiar.org).

INRAB is Benin's principal agricultural R&D institute. The institute was established in 1992 and falls under the administrative coordination of the country's Ministry of Agriculture, Livestock, and Fisheries. The institute holds a broad mandate covering crop, livestock, forestry, postharvest, and socioeconomic research. To learn more about INRAB visit http://www.bj.refer.org/benin_ct/rec/inrab/inrab.htm.

The Agricultural Science and Technology Indicators (ASTI) initiative compiles, analyzes, and publishes data on institutional developments, investments, and human resources in agricultural R&D in low- and middle-income countries. The ASTI initiative is managed by the International Food Policy Research Institute (IFPRI) and involves collaborative alliances with many national and regional R&D agencies, as well as international institutions. The initiative, which is funded by the Bill & Melinda Gates Foundation with additional support from IFPRI, is widely recognized as the most authoritative source of information on the support for and structure of agricultural R&D worldwide. To learn more about the ASTI initiative visit www.asti.cgiar.org.

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