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CNRA CENTRE NATIONAL DE RECHERCHE AGRONOMIQUE
National Center for Agricultural Research

CÔTE D'IVOIRE

RECENT DEVELOPMENTS IN AGRICULTURAL RESEARCH

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

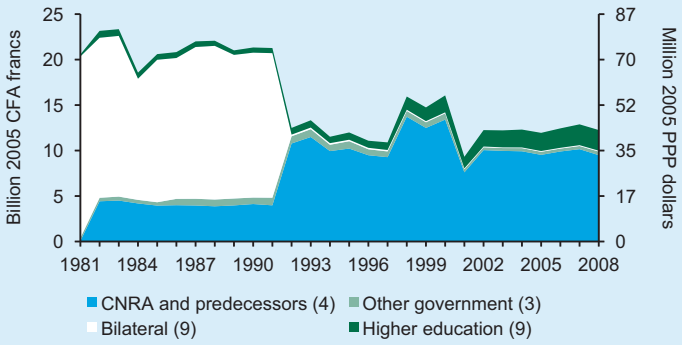
Following a short period of high investments, Côte d'Ivoire's expenditures in agricultural research and development (R&D) dropped sharply at the turn of the millennium, after which they remained relatively stable during 2002–08. In 2008, the country invested 12.3 billion CFA francs or 42.6 million PPP dollars (both in 2005 prices) on agricultural R&D, down from 16.1 billion CFA francs or 55.9 million dollars in 2000 (Figure 1; Table 1). Note that, unless otherwise stated, all dollar values in this note are based on purchasing power parity (PPP) exchange rates.[1] 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.

With regard to the country's total agricultural R&D capacity, the downward trend noted during the 1990s subsequently evened out and stabilized as of 2004. In 2008, the 12 Ivorian agencies involved in agricultural R&D employed a total of 123 full-time equivalent (FTE) researchers—a significant decline compared with the 200 FTE staff total recorded in the 1990s (Figure 2). This overall decline is largely attributable to the drop in research staff numbers at the National Center for Agricultural

Key Trends Since 2000

- Agricultural research and development (R&D) expenditures fell around the turn of the millennium, but remained relatively stable during 2002–08. The sociopolitical turmoil that rocked Côte d'Ivoire between 1999 and 2002, and the ensuing civil war had a particularly negative impact on agricultural R&D investments in the country's central, northern and western zones.
- The National Center for Agricultural Research (CNRA) is the country's main agricultural R&D agency, accounting for two-thirds of the total research capacity and over three-quarters of its agricultural R&D investments.
- Unlike the situation elsewhere in the region, the national government and donors play a minimal role in financing agricultural R&D. CNRA research is mainly funded by the private sector through the Inter-Professional Fund for Agricultural Research and Extension (FIRCA); CNRA also uses internally generated resources to fund its research.
- During 2000–08, average qualification levels of agricultural researchers have improved.

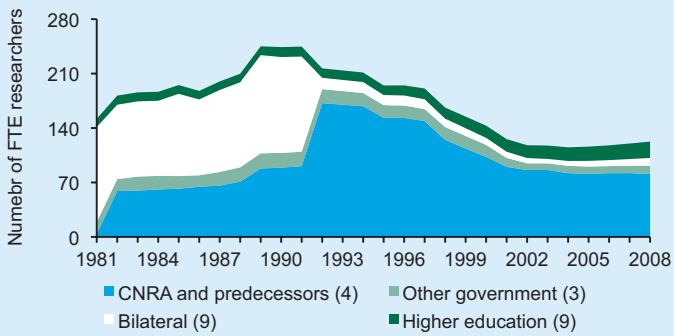
Figure 1—Public agricultural R&D spending adjusted for inflation, 1981–2008



Sources: ASTI–CNRA 2009; Stads and Beintema 2003.

Notes: Figures in parentheses indicate the number of agencies in each category. Total agency sample includes various agencies that discontinued research activities, including 8 French (bilateral) agencies that merged into IDESSA and IDEFOR in 1982 and 1992. For more information on coverage and estimation procedures, see the Côte d'Ivoire country page on ASTI's website at http//www.asti.cgiar.org/cote-divoire.

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



Sources: ASTI–CNRA 2009; Stads and Beintema 2003.

Notes: Figures in parentheses indicate the number of agencies in each category. The agency sample includes various agencies that discontinued research activities before 2008. Data include expatriate research staff employed at CNRA and CRO during the 1980s and 1990s.

Table 1—Overview of public 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)	(%)
CNRA	9,495.1	33.0	77.5	81.0	66.1
Other government (2)	393.2	1.4	3.2	10.6	8.6
CSRS	97.7	0.3	0.8	10.0	8.2
Higher education (8)	2,269.5	7.9	18.5	21.0	17.1
Total (12)	**12,255.4**	**42.6**	**100**	**122.6**	**100**

Sources: ASTI–CNRA 2009; Stads and Beintema 2003.

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

Research (CNRA), the country's main agricultural research agency. In 2008, Côte d'Ivoire's total agricultural R&D capacity was significantly lower compared with the levels recorded in many of the surrounding countries, such as Ghana (537 FTEs) and Burkina Faso (222 FTEs). However, it should be noted that Côte d'Ivoire employs a large number of FTE technicians with university degree qualifications, but who do not have an official researcher status (see section on degree qualifications on page 4).

In 2008, CNRA accounted for two-thirds of total researchers and more than three-quarters of total spending on R&D in Côte d'Ivoire. CNRA's research mandate includes crops, livestock, forestry, post-harvest processing, as well as technology transfer and human resource development. In 1998 three existing agencies—the Savannah Research Institute (IDESSA), the Forest Research Institute (IDEFOR), and the Ivoirian Center of Technology Research (CIRT)—were merged to form CNRA, a semi-autonomous private institution. The second National Agricultural Services Support Project (PNASA II), which was launched in 1998 and administered by the World Bank, stipulated that CNRA was to be a part public, part private structure along the following divide: for 40 percent, an autonomous public institute funded by the public sector and, for 60 percent, a private institution deriving its funding from the private sector (Stads and Beintema 2003).

The civil war that erupted in Côte d'Ivoire in September 2002 had severe consequences for CNRA. The center lost one of its researchers and two of its research stations (for livestock and cotton) were completely destroyed. It had to close down all of its activities in the northern, central, and western regions—known as the CNO zones—and transfer all of the researchers stationed there to Abidjan and Gagnoa. Since 2007, activities have been slowly started up again in the CNO zones, be it that no researchers have taken up permanent positions there: they carry out periodic missions traveling out from Abidjan and Gagnoa.

Following its establishment, CNRA initially remained dependant on the World Bank and the Ivorian government, which supported the center with PNASA II funding. Falling prices of some of Côte d'Ivoire's principal agricultural commodities on the world market combined with the World Bank's decision to suspend its support to Côte d'Ivoire in 2000 following a coup d'état led to a decline in CNRA's expenditures in 2001. This was then followed by the outburst of civil war, as a result of which PNASA II was closed down prematurely and government funding fell abruptly. At present, CNRA derives most of its funding from the *filières*, i.e. the producer organizations representing the various agricultural sectors, which act through the Inter-Professional Fund for Agricultural Research and Extension (FIRCA). CNRA's inflow of funds is supplemented by resources generated through the commercialization of CNRA's products (see section on funding sources on pages 4 and 5). In 2008, CNRA's expenditures totaled 9.5 billion CFA francs or 33.0 million PPP dollars, while in 1998 the corresponding totals had been 13.7 billion CFA francs or 47.7 million PPP dollars (all in constant 2005 prices). Moreover, during the same period (which matches the first ten years of CNRA's existence), CNRA's research staff totals fell from 125 to 81 FTEs. This can be largely attributed to the fact that when CNRA was established as a semi-private agency, its program and organizational structure was rationalized and many senior researchers were transferred to senior administrative positions.

The two other Ivorian public-sector agencies involved in agricultural research are the Center for Oceanological Research (CRO) and the National Laboratory for Agricultural Development (LANADA). In 2008, CRO and LANADA employed 8 FTE and 3 FTE researchers, respectively. Bilateral cooperation has always played an important role in the country's agricultural R&D. While most original, locally established, French agencies have meanwhile gradually been replaced by Ivorian institutes, the Swiss Centre for Scientific Research (CSRS) carries out its research activities in Côte d'Ivoire to this very day. CSRS plays a key role when it comes to research on food security and biodiversity. Most of its researchers are Ivorian nationals. Expatriate staff come from other African countries or are European nationals, mainly Swiss or German. CSRS has seen a significant rise in capacity since the end of the political crisis. In 2008, the center counted some 50 professional staff, both permanent employees and temporary associates: in terms of FTEs, the total agricultural research capacity was estimated at 10.

Since the 1990s, the higher education sector's share of agricultural research has increased steadily. Main institutions in this sector are the University of Cocody-Abidjan (UCA), the University Abobo-Adjamé (UAA) and the Advanced School of

ASTI Website Interaction

- More details on institutional developments in agricultural research in Côte d'Ivoire are available in the 2003 country brief at asti.cgiar.org/pdf/CotedIvoireCB4.pdf.
- 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/cote-divoire/datatrends.

www.asti.cgiar.org/cote-divoire

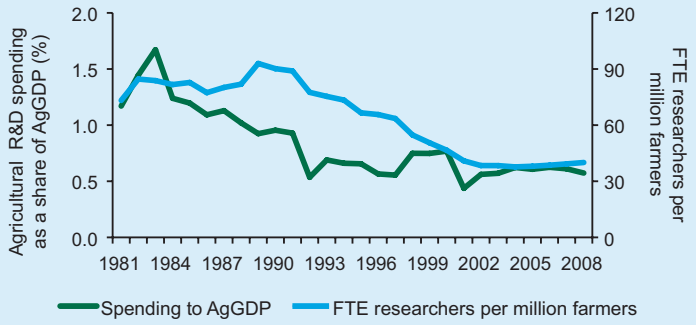
Agronomics (ESA) in Yamoussoukro. The combined total research staff of these three agencies grew from 16 FTE in 2000 to 21 FTE in 2008. Their research is mainly focused on new plant varieties and food technology; they also conduct technology transfer to farmers.

The private sector's role resembles that of a silent partner: while providing important financial support to agricultural R&D, it does not participate – or barely participates – in the research itself. It is estimated that in 2008, private-sector agricultural researchers only made up 3 percent of the country's overall public and private research capacity.

In 2008, female scientists constituted 13 percent of Côte d'Ivoire's total research staff (ASTI–CNRA 2009). While very low, this ratio is considerably higher than the 8 percent ratio recorded in 2001 (Stads and Beintema 2003). In 2008, the support-staff-to-researcher ratio averaged 14.3, the break-down being as follows: 2.6 for technical support, 2.1 for administrative support, and 9.6 for the category "other," which comprises laborers, guards, drivers, etc. (ASTI–CNRA 2009). The "other" category is relatively high compared with its equivalent in other African countries; this may be ascribed to the fact that many CNRA employees spend part of their time on cocoa or coffee production schemes, which the center runs on its farming sites.

In 2008, Côte d'Ivoire's total public spending as a percentage of agricultural output (AgGDP)—a comparative indicator of agricultural R&D spending across countries—was $0.57 for every $100 of AgGDP (Figure 3). This intensity ratio has shown a gradual decline since the 1980s but it nevertheless compares favorably to many other countries in West Africa. The country's number of FTE researchers per farmer reveals a similar trend. In 2008, for every 1 million farmers there were 40 FTE researchers, a lower ratio than was recorded in the 1980s and 1990s.

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



Sources: Calculated by authors from ASTI–CNRA 2009; Stads and Beintema 2003; FAO 2009; and World Bank 2009.

INSTITUTIONAL STRUCTURE AND POLICY ENVIRONMENT

The Government of Côte d'Ivoire has been striving to bring about a reform of the agricultural services system since the early 1990s, mainly through PNASA, a comprehensive project implemented with the support of the country's development partners, in particular the World Bank, its principal donor. The PNASA initiative was launched as part of a structural adjustment policy and designed to redress a number of weaknesses that a preliminary analysis had brought to light. PNASA's medium and long-term objectives were to implement sustainable demand-driven research and extension systems: beneficiaries were to contribute a considerable share of the required funding, while the government's emphasis would be on strengthening skills and the provision of public services (Doumbia 2009). PNASA was to be implemented in two stages, through two distinct projects: PNASA and PNASA II.

The restructuring of the agricultural research and extension services was finalized by 1998 with the creation of the National Agency for Rural Development (ANADER) and of CNRA. The National Association of Agricultural Producer Organizations of Côte d'Ivoire (ANOPACI) was also founded in 1998; the establishment of FIRCA followed in 2002. Originally PNASA II had been designed as a long-term, eleven-year project. However, following the coup d'état of December 1999, the project's main donor, the World Bank, suspended further aid, causing serious cash flow problems for both ANADER and CNRA. The conjunction of such a drastic drop in funding and of the social and political disturbances that have been shaking the country since 2002 has seriously reduced the impact these two organizations have on Côte d'Ivoire's agriculture.

By becoming a shareholder of both CNRA and ANADER, the private sector has stepped in and become a factor of influence determining how these two organizations function. Its involvement is made tangible through the presence of private-sector representatives on the institutions' boards of trustees and by the weight its funding has in influencing program planning and implementation. The high degree of influence that the Ivorian private sector exerts on the priority-setting and financing processes relating to agricultural R&D is quite unique in Africa.

ASTI Website Interaction

- A list of the three government, one bilateral, and eight higher education agencies included in this brief is available at asti.cgiar.org/cote-divoire/agencies.
- 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/cote-divoire/datacoverage.
- More relevant resources on agricultural R&D in Côte d'Ivoire are available at asti.cgiar.org/cote-divoire.

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RESEARCH STAFF QUALIFICATIONS AND TRAINING

Since the turn of the millennium, the level of researcher qualifications has shown distinct improvement: in 2008, 99 percent of Côte d'Ivoire's agricultural researchers were trained to the post-graduate level, and 57 percent had a PhD (Figure 4). Female scientists are seriously underrepresented at this level: in 2008, only 3 of CNRA's 43 PhD-qualified researchers were women (ASTI–CNRA 2009). The share of female PhD-qualified researchers is higher in the higher education sector (67 percent) than at CNRA. This trend is consistent with those observed in most African countries. As Côte d'Ivoire is one of the francophone countries of the subregion that offers in-country PhD-programs in agricultural sciences, its share of researchers having completed PhD-level studies is higher than that of surrounding countries that do not offer PhD-level university training. In the same way, the share of Ivorian researchers having completed university training abroad is lower than the share in other countries of the subregion. Most of the Ivorian researchers have graduated from one of the country's three higher education institutions (UCA, UAA, or ESA). Over the past decade, the European Union, the United Nations Development Programme (UNDP), the Swiss government, and the Food and Agriculture Organization of the United Nations (FAO) have all provided substantial grants to support the training of CNRA researchers. CNRA also allocates resources of its own to training, including the funds it sets aside to enable researchers to attend seminars and conferences.

In 2009, the average age of CNRA research staff was around 50 years. The aging of agricultural researchers is a challenge to most West African countries and has been a cause of concern among the Ivorian authorities. In order to address this, the center sponsors the training of a number of students by assigning CNRA researchers as their mentors. It therefore helps build a pool of expertise that it will turn to later on to fill its recruitment needs. Thus, the core part of training future CNRA researchers is secured within Côte d'Ivoire: the center needs only to turn to foreign entities to provide its researchers with additional training opportunities, such as short-term specializations in laboratories abroad. These recruitment efforts are expected to steadily reduce the average age of CNRA scientists in the coming years.

The average qualification level of CRO researchers have rapidly improved during 2001–08. In 2008, CRO employed 8 FTE researchers with a PhD, compared to 3 in 2001. Many of the center's researchers have taken advantage of doctoral programs financed by foreign donors.

As previously mentioned, agricultural R&D agencies in Côte d'Ivoire employ a large number of FTE technicians with university degree qualifications, but who do not have an official researcher status. In 2008, CNRA, CRO, and LANADA combined employed 4 FTE technicians with MSc degrees and 12 FTE technicians with BSc degrees (Figure 5). From 2004 to 2008, the numbers of FTE technicians in the government agencies has grown, especially at CRO and LANADA.

INVESTMENT TRENDS

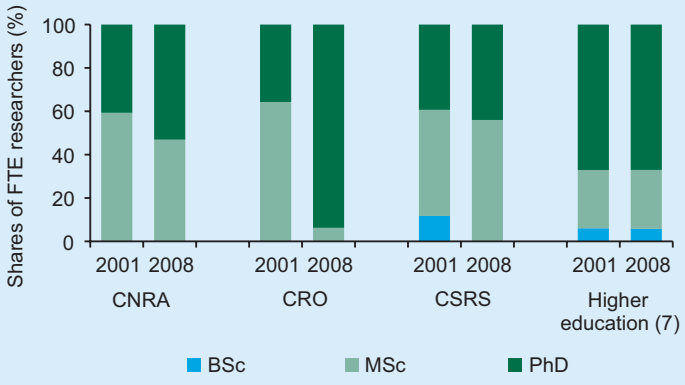
Cost Categories

The allocation of research budgets across salaries, operating costs, and capital investments affects the efficiency of agricultural R&D, so detailed cost category data were collected from the government agencies as part of this study. During 2000–08, salaries represented over half of CNRA's total expenditures, while operating costs accounted for 40 percent, and capital costs for 7 percent (Figure 6). The relative shares of the various cost categories did not fluctuate significantly from one year to the next. CNRA is different from most national research institutes in other West African countries in that its total salary costs are not covered by the national government, but by allocating internally generated funds to this effect. Unfortunately no data were available on the cost category distribution of the other Ivorian agricultural research agencies.

Funding Sources

During 2000–08 agricultural R&D funding in Côte d'Ivoire was derived from several sources: in addition to funding from the national government and the private sector, some agencies also

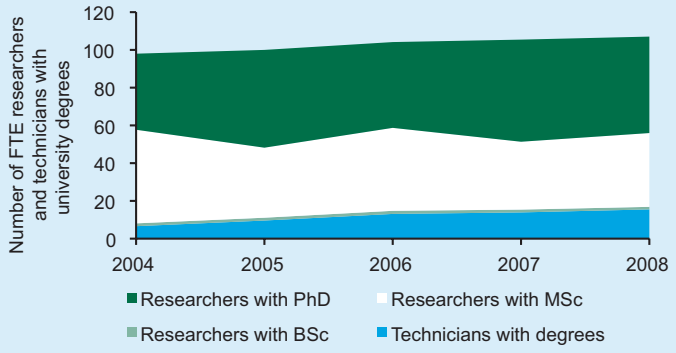
Figure 4—Researcher qualifications by institutional category, 2001 and 2008



Sources: ASTI–CNRA 2009; Stads and Beintema 2003.

Notes: Figures in parentheses indicate the number of agencies in each category. Data are for researchers only and therefore exclude 4 FTE technicians holding MSc degrees and 12 FTE technicians holding BSc degrees employed at the government and higher education agencies.

Figure 5—Trends in FTE researchers and technicians with a university degree at the government agencies, 2004–08



Source: Calculated by authors from ASTI–CNRA 2009.

generated resources of their own through the sale of products and services. Bilateral or multilateral development partners have, since 2003, ceased to provide funds to support CNRA's research programs; they have only given grants to support the training of a number of researchers.

As previously mentioned, the Government of Côte d'Ivoire embarked on a process to reform the country's agricultural services system with the launching of PNASA in 1992, the funding of which was derived through a World Bank loan as well as from government and private sector contributions. The World Bank component was linked to the national government's grants as counterpart funding. When the government failed to meet its obligations in full, the World Bank share dwindled accordingly. In addition, between October 2000 and February 2002, World Bank aid was suspended in response to the failure of the then military regime to pay off arrears (Stads and Beintema 2003). The subsequent eruption of civil war in September 2002 led to the final closure of PNASA (which had been scheduled to continue through 2010).

At present, despite the original stipulation that the government is to provide 40 percent of CNRA's annual budget, government contributions represent a very limited part of the center's total funding (15 percent in 2008), and only covers certain operational costs. This low level of government support makes it difficult for CNRA to perform its daily operations and to engage in long-term planning. Some years show wide gaps separating funding and expenditure levels, which are an indication of the government's failure to meet the budget targets set at the beginning of the year, or of its having deferred disbursement. To lighten CNRA's financial burden and enable it to make ends meet, the national government has introduced several artificial tax incentives. For example, it allows the center to defer payment of value added tax (VAT) on equipment (computers, car, etc.) as well as of certain taxes on salaries. Whether such measures will remain valid, and for how long, still remains to be seen.

It should nevertheless be noted that, in spite of the nonpayment or deferred payment of the government grants and despite the premature ending of PNASA II due to political and social turmoil, CNRA's funding levels have shown relative stability in the past few years. This reality is partly attributable to the fact that CNRA derives most of its funding from membership dues paid by the producer organizations, collected and managed through FIRCA (Figure 7). The way this system operates as a mechanism for financing agricultural research provides a unique case in Africa and one that could be highly effective if the national government were to live up to its commitment and disburse its share of funding at regular intervals.

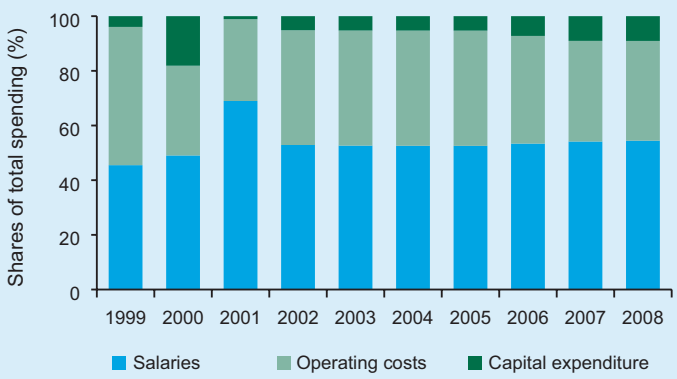
During most of the 1961-90 period, CRO's main donor was ORSTOM, the former scientific and technical research agency for France's overseas territories and departments. In subsequent years and particularly between 1996 and 2001, the financial backing provided by ORSTOM's successor, the French Research Institute for Development (IRD), dwindled, coinciding with a massive departure of French expatriate staff leaving CRO. As of 2001, the trend reveals highly variable levels of financial assistance as well as an overall decline in funding, all sources considered. With regard to the period 2007–09, the level of total CRO expenditures hovers around the 950 million CFA franc mark. The share of funding agreements (mainly signed with the European Union) is less that 10 percent.

Inter-Professional Fund for Agricultural Research and Extension

The establishment of FIRCA in 2002 was the final step on the path of reform that Côte d'Ivoire had launched with a view to restructuring its agricultural research and extension services. As a funding agency, FIRCA finances programs designed to provide agricultural services to producers in all agricultural production sectors (plants, forestry, and animals). "Agricultural services" is understood to include agricultural research, extension, and capacity building focused on producers and their various sector-based organizations. FIRCA relies on the financial inputs it receives not only from the government, but also from all of the producers: the latter component consists of the membership subscription dues raised by the various commodity-specific producer organizations called *filières* (such as the coffee-cocoa *filière*, the rubber *filière*, and the poultry *filière*). Together, all of these resources serve to finance the agricultural services programs mentioned earlier.

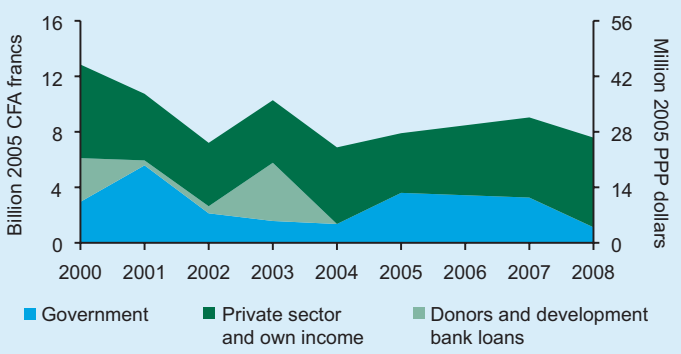
FIRCA operates on the principle that management of the resources is entrusted to the producers that form the majority

Figure 6—CNRA's spending by cost category, 1999–2008



Sources: ASTI–CNRA 2009; Stads and Beintema 2003.

Figure 7—Funding sources of CNRA, 2000–08



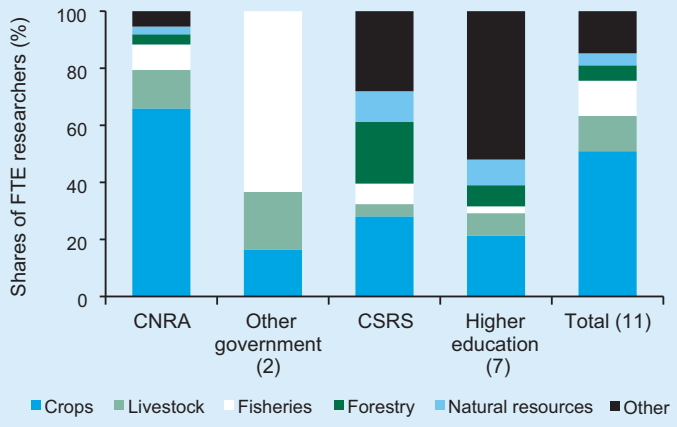
Sources: ASTI–CNRA 2009; Stads and Beintema 2003.

Note: Donor funding includes the salaries of expatriate staff seconded to CNRA in the early 2000s.

within each of the *filières*. At least 75 percent of the subscription fees raised by any given agricultural production sector are allocated to programs serving the needs of the sector concerned. The remainder is used to set up a solidarity fund and only a marginal share goes towards covering FIRCA's operational costs. The purpose of the solidarity fund is to finance programs designed to serve the production sectors that raise but a feeble amount through the collection of their own subscription fees, or that cannot raise anything at all, due to the way they are structured. FIRCA regulations stipulate for the establishment of a financial reserve by transferring a certain amount drawn on FIRCA's annual resources (FIRCA 2010).

Between June 2004 and December 2008, the government and the producer organizations jointly mobilized a total of 19.4 billion CFA francs (in current prices): of this amount, 14.8 billion was allocated to the programs, and 4.6 billion assigned to cover administration fees. During this period, a total of 124 projects were implemented (20 projects in 2006, 49 in 2007, and 55 in 2008). 12.3 billion CFA francs were spent on carrying out projects for *filières*. With regard to program funding, 2 percent are derived from the State and 98 percent from the agricultural producer organizations. In 2008, the amounts raised and contributed by the coffee-cocoa, rubber, and oil palm producer organizations represented 91 percent of total subscription dues raised by all the producer organizations combined (FIRCA 2009). While significant progress has been recorded—not only with respect to the funds raised by producer organizations but also in the field of project implementation—a number of problems occurred at various levels: some affect the functioning of FIRCA's executive management departments, others are related to the level of commitment of actors involved or to the *filières* (FIRCA 2009). Notably, the fact that most development aid partners have relocated abroad, a consequence of Côte d'Ivoire's sociopolitical crisis, continues to be a major handicap impeding FIRCA's operations.

Figure 8—Research focus by major commodity area, 2008



Source: ASTI–CNRA 2009.

Notes: Figures in parentheses indicate the number of agencies in each category. UFR Biosciences under UAC is excluded due to data unavailability.

ALLOCATION OF RESEARCH

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, more than half of all Ivorian agricultural researchers conducted crop research; fisheries and livestock research accounted for 12 percent each; forestry research represented 5 percent and postharvest research 4 percent (Figure 8). The remaining researchers focused on food security, natural resources, socioeconomics, and other areas of research.

Cocoa, cotton, and rice are the most researched crops in Côte d'Ivoire, representing 7 percent each of the FTE researchers involved in crop and livestock research in 2008. Other important crops include oil palm (6 percent), bananas and plantains (5 percent), and coffee (5 percent) (Table 2). Swine was the principal livestock commodity, accounting for 5 percent of FTE researchers involved in crop and livestock research in 2008.

CONCLUSION

During the 1990s, agricultural research in Côte d'Ivoire underwent major changes, following the launch of PNASA II, a project that was largely funded through a World Bank loan and which led to the establishment of CNRA. The December 1999 coup d'état and the outbreak of civil war in 2002, which caused

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

	CNRA	LANADA	CSRS	Higher education (2)	Total (5)
Crop items	Shares of FTE researchers (%)				
Cocoa	5.7	30.3	—	5.1	7.0
Cotton	7.9	—	—	3.6	6.9
Rice	6.9	—	—	15.0	6.6
Oil palm	6.8	—	—	2.8	5.9
Bananas & plantains	5.7	—	—	2.4	4.9
Coffee	4.5	14.7	—	—	4.7
Vegetables	3.4	—	11.1	21.4	4.4
Yam	3.4	—	22.3	1.6	3.9
Other crop	38.7	—	53.3	21.2	36.0
Livestock items					
Swine	3.4	25.0	—	—	4.5
Sheep and goats	3.4	18.7	—	—	4.1
Poultry	3.4	6.3	—	10.6	3.8
Beef	3.4	5.1	6.7	—	3.5
Dairy	3.4	—	6.7	—	3.2
Other livestock	—	—	—	16.4	0.8
Total crop and livestock	**100**	**100**	**100**	**100**	**100**

Source: ASTI–CNRA 2009.

Notes: Figures in parentheses indicate the number of agencies in each category. CRO and five higher education agencies did not conduct crops or livestock research.

CNRA to halt all operations in the northern, central, and western regions of the country, led to a withdrawal of World Bank support and to the early closure of PNASA II. These events had negative consequences for CNRA, a semi-private agency that is supposed to receive 40 percent of its annual funding from the national government and 60 percent from the private sector. However, the government has been unable to keep its commitment in full: in 2008, government funding covered only 15 percent of CNRA's total expenditures. The private sector, through FIRCA, and internally generated resources accounted for the remainder of CNRA's funding. Uncertainty as to whether government funding will come through or not makes it very difficult for CNRA to carry out its daily research and to engage in planning for the long term. Despite these problems, CNRA's funding levels for the last few years reveal a relatively stable trend.

FIRCA is a funding system, which is unique and exemplary in Africa. Through FIRCA, research has become more demand driven and the system's solidarity mechanism ensures the availability of research funds to assist those agricultural production sectors in which the volume of raised subscription fees is low. In addition, Côte d'Ivoire is one of the few countries in the subregion that does not depend heavily on large-scale donor funding to pursue its agricultural research. This means that in setting its research priorities, it is less subjected to external pressures than are numerous other countries in West Africa.

With its 122 FTE agricultural researchers (and 16 FTE technicians holding MSc or BSc degrees), Côte d'Ivoire's agricultural R&D capacity levels are generally speaking lower than those of many other countries in the subregion. This does not necessarily constitute a cause for concern because CNRA's status as a semi-private institute has enabled it to rationalize both its program and its organizational structure: indeed, CNRA successfully maximizes its results by investing fewer resources and avoids the pitfall of an overabundance of staff. So in spite of civil war and funding problems, Côte d'Ivoire's agricultural research, and in particular that of CNRA, ranks among the best performing and most innovative in Africa.

NOTE

[1] Financial data in current local currencies or constant 2005 US dollars are also accessible via ASTI's data tool, available at <http://www.asti.cgiar.org/data>.

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