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Putting More Stock in Agricultural R&D

As some countries boost funding for agricultural innovation, others struggle to catch up.

Climate change and rising business expenses challenge the world's farmers, but private and public investors have been making historically large increases in funding for agricultural research and development to help them adapt. A report by the International Food Policy Research Institute (IFPRI) indicates that spending on agricultural R&D grew by 22% from 2000 to 2008—from \$26.1 billion to \$31.7 billion—reversing an era of slow growth that had lasted throughout the 1980s and 1990s.

“When the governments make budget decisions, agricultural R&D has for the last two decades been a lower priority. Now, countries are more fully realizing the role of farmers and of increasing access to agricultural technologies in promoting development. That’s changing at the government level and at the donor level,” says Neinke Bentema, a report co-author and the head of the IFPRI’s Agricultural Science & Technology Indicators (ASTI) initiative.

Bentema credits the rising prices of food commodities and concerns over “food insecurity” in much of the developing world with motivating governments to boost agricultural R&D funding. Rising awareness of the disruptive effects of climate change—e.g., more droughts, expanding pest infestations, and intensified storm patterns—also plays a role.

Nearly half the increased investment took place in China and India, according to the report. Spending also rose substantially in Argentina, Brazil, Iran, Nigeria, and Russia.

Parts of sub-Saharan Africa saw robust growth in agricultural R&D, as well. Between 2001 and 2008, there was a \$110 million increase in Nigeria, and increases of \$25 million to \$56 million each in Ghana, Sudan, Tanzania, and Uganda.

Tanzania’s R&D support includes joint programs between its universities and the U.S. Agency for International Development to develop genetically tailored strains of rice seed and to improve rice-production techniques. Also, government public-information programs are publishing online information on commodi-



A. FLEURET / USAID

Farmers in Kano, Nigeria, celebrate a harvest of high-yielding (and income-boosting) cowpeas.

ties prices that farmers can consult via mobile phones.

Floyd Hammer, president of the U.S. humanitarian nonprofit Outreach, has witnessed these and other breakthroughs while frequenting Tanzania on Outreach initiatives since 2003. He praises Jakaya Kikwete, Tanzania’s president since 2005, for being more active than his predecessor in supporting agricultural innovation.

“There is a renewed interest in agricultural development in Tanzania and an increase in support for new technology since he’s become president,” Hammer says. “There is a lot of work going on in the agricultural community to improve the country.”

Outreach recently purchased an 8,000-acre farm in Tanzania’s Tonga region and is now coordinating with the Ministry of Artificial Insemination to breed better cattle that can produce higher-quality beef. The Ministry is interested in creating a similar initiative for goats.

“The farmer in Africa has just had continual breeding of the same herds. There has been no genetic improvement,” Hammer says. “There is a recognition that the herds need to be improved.”

Overall, Africa’s agricultural progress has been uneven, however. Funding levels stagnated throughout most African countries and even declined in a few, according to the IFPRI report. Even those few that increased funding levels will probably not be able to sustain them in the long run, as the funding relied partially on contributions from international donors, which will not remain consistent year-by-year.

“In a lot of the smaller countries [of sub-Saharan Af-

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Tanzanian farmer Lugonda Magaiwa works with a new variety of drought-resistant chickpea introduced in 2006.

rica], there have been a lot of low investment levels. They have a difficult time in maintaining their own systems and research technologies, and in giving farmers access to technologies,” says Bentema.

Agricultural R&D matters not only in Africa, but also around the world. Farmers who improve their methods could lower their own costs of production, boost their output, and thus relieve food shortages.

And there is much room for improvement, according to Richelle Matthews, an associate with the Praxis Strategy Group, whose initiatives include working with farmers in Ghana. Many farmers in Africa’s underdeveloped parts unknowingly undermine their own productivity by using the wrong pesticides or fertilizers, for example, or by relying on outdated methods of planting and growing. Developing better farming practices and teaching them to farmers would help, she explains.

“There are all types of information deficits and capacity deficits, so that farmers either don’t have the types of relevant information to make decisions or they don’t have skills with which to increase efficiencies,” Matthews says.

Matthews is concerned, however, that even the African countries that have increased their funding might not be able to sustain them in the long term. In most of the countries, substantial sums of the funding for R&D comes from outside investors and donors, she says. The

governments will have to make much larger increases in their commitments in years to come, or else many projects could collapse once the donor funds cease.

“Often what happens is that donor agencies come along [with] some funding, and it goes to funding streams,” says Matthews. “You end up with a lot of projects that fail once the donor agency leaves.”

Agricultural sectors across the globe remain heavily dependent on government support, according to Bentema. While private-sector entrepreneurs may invest in certain farming initiatives that are expected to yield returns in the short term, the government is still the most dependable go-to source for support for upcoming innovations that may take many years to develop and refine.

“The government is providing public research that has a much broader mandate, and which might not have a profit-making aspect in it,” Bentema says.

But the private sector has a vital role, as well, Matthews argues: Compared with governments and NGOs, businesses have

more technical and marketing know-how to teach farmers, and more knowledge about the market’s demands and what farmers need to do to meet them. Public-private partnerships are becoming an increasingly popular strategy of choice in the developing world, she adds; government agencies in the affected countries are looking for ways that governments and businesses can together help farmers.

Praxis Strategy Group, for example, is operating a hundred-acre farm on which a few farmers at a time live and work for a year or two—i.e., a few successive crop rotations—and get a hands-on education on best practices that they can take back to their communities to teach others. In addition, Praxis directs educational shows about farming on GTV, Ghana’s public television station.

“We look at the messaging domain. What’s the messaging domain of the government? You need the government to get best practices and safety information to farmers and consumers. And then you can look to the private sector for marketing and technical information on specific types of crops,” Matthews says.

—Rick Docksai

Sources: Neinke Bentema, International Food Policy Research Institute, www.ifpri.org.

Richelle Matthews, Praxis Strategy Group, www.praxisgroup.com.

Floyd Hammer, Outreach, www.outreachprogram.org.