

Africa: Brazil's Rising Interest in Science Ties to Africa



RIO de JANEIRO, BRAZIL, July 31, 2013 (SciDev.Net) - *The past decade has seen a boom in science collaboration between Brazil and Africa, finds Catarina Chagas.*

Three times a year, biologist Wilson Savino leaves his office at the Oswaldo Cruz Foundation (Fiocruz) in Rio de Janeiro, Brazil, and boards a plane to Africa. It takes three flights for him to reach Maputo, Mozambique, where he coordinates the Postgraduate Health Sciences programme - a partnership between Fiocruz and the National Health Institute in Mozambique.

"Geographical distance is our main difficulty," he says. "But that is nothing compared with the results we get from this effort."

Savino is just one of many Brazilian researchers who have begun working in Africa over the past decade as part of their professional activities. Since the era of [Luiz Inácio Lula da Silva's](#) government (2003-2010), Brazil has increasingly invested in collaborative projects with African countries, spanning science, technology, education and culture. A combination of geopolitical interests, solidarity and - increasingly - business opportunities have fuelled the boom in Brazil's technical and development cooperation with African countries, which, some believe, could challenge the traditional paradigms of development cooperation in Africa.

The continent shares historical and cultural ties with Brazil, whose political plans for cooperation with Africa began back in the 1970s and developed an increasingly economic dimension in the 2000s.

"Brazil's cooperation with and aid to Africa is linked initially to a geopolitical ambition and economic interest, but also to the strong historical links and affinities with countries in Africa, relationships other emerging nations ... do not have with Africa," Patrice Clédjo, professor at the University of Abomey-Calavi and deputy director-general of Centre Béninois de la Recherche Scientifique et Technique, a Benin research organisation, tells SciDev.Net.

And according to a report by Gerhard Seibert, from Centre of African Studies of the University Institute of Lisbon, in Portugal, Brazil "presents itself as an emerging regional power claiming a place in the new international order equivalent to its demographic, political and economic weight", with its approach to Africa being "an integral part of the country's ambitious global foreign policy". [1]

In the past decade, Africa-Brazil trade has soared by 500 per cent to reach US\$9 billion, writes Calestous Juma, professor of the practice of international development at Harvard University's Belfer Center, United States, in a recent editorial. [2]

Africa-Brazil relations are not founded simply on historical and cultural affinity, but are also a product of serious diplomatic efforts, with 19 Brazilian embassies established in Africa during Lula's period, Juma writes. With 37 embassies in 54 African countries, Brazil has the fifth largest number of embassies in Africa after the United States, China, France and Russia (and excluding African countries).

Research and educational support to African countries is provided through both federal and state agencies, building on a strong political commitment to building scientific and technological capacity in Brazil, Juma writes.

Next steps

But what does the future hold for Brazil's science diplomacy in Africa?

In terms of scientific initiatives, health is one of the key areas where Brazil could take a lead, and projects to develop these ties are already underway.

Fiocruz is the main institution behind these efforts. "We have cooperated with Africa since the 1990s," says José Luiz Telles, coordinator of Fiocruz's office in Africa, established in Maputo in 2008.

"Our cooperation is based on the principle that actions should ultimately strengthen national health institutions so that they have increasing autonomy and expertise to deal with the serious health problems of their populations."

With this in mind, Fiocruz has launched capacity-building courses, starting in 2008, in Angola, Cape Verde, Mozambique, and São Tomé and Príncipe - the five Portuguese-speaking countries in Africa.

Savino helped develop the postgraduate health programme in Mozambique and participated in its launch in 2008.

Students, over 20 have graduated so far, have two supervisors - one African and one Brazilian - and the schedule includes a working internship in Brazil. "Master's candidates are really interested and local coordination is excellent," says Savino.

Fiocruz is careful to ensure that Brazilian cooperation with African countries respects local needs. "We would like to see both sides learning from the cooperation and avoiding [any] situations of power asymmetry," says Telles.

A large share of Brazil-Africa cooperation projects are currently to be found in Mozambique, where Fiocruz assisted in the foundation of an antiretroviral drug factory in 2012. The factory belongs to Mozambique's government and will produce five HIV/AIDS drugs and other medicines to supply both local demands and the regional market.

Other recent health cooperation initiatives underway include creating a Mother-Child and Teenage Health Institute, also in Mozambique, a project to boost the Angolan health system and a Human Breast Milk Banks Network in several countries, beginning with Cape Verde.

Fiocruz also sends vaccines to tackle sporadic epidemics, such as yellow fever outbreaks in Côte-d'Ivoire and Sudan.

From health to agriculture

If health is the primary area of importance for cooperation between Brazil and Africa, agriculture is not far behind. Brazil has strong agricultural research capacity that Africa continues to lack, while Africa presents a large market for Brazil's products.

And while Lula was keen to stress a narrative of solidarity towards Africa, current President Dilma Rousseff seems particularly keen to promote business opportunities for Brazilian corporations, private entrepreneurs and farmers, emphasising the 'mutually beneficial' character of cooperation, says Lidia Cabral, a social scientist at the Institute of Development Studies, in Brighton, United Kingdom.

"Science and research occupy a central role in Brazil-Africa cooperation," says Cabral, who has just authored a paper in the institute's new series on China and Brazil in African Agriculture, published in the IDS Bulletin. [3]

In agriculture, the key actor is the Brazilian Agricultural Research Corporation (Embrapa), which responds to the needs of the Brazilian Cooperation Agency of the Ministry of External Relations.

"Although there are a growing number of Brazilian science and research institutions involved in cooperation, Embrapa is still the dominant player with a variety of research, training and capacity-building projects across many African countries.

In a single new cooperation project in one country - ProSavana in Mozambique - there are as many as 16 Embrapa specialised research units involved," Cabral tells SciDev.Net. "Embrapa's scientists are the front-line development actors traveling to African countries to share their knowledge, skills and experiences."

In March, Embrapa began a genomic conservation project in Nigeria, as part of the [Africa-Brazil Platform for Agricultural Innovation Marketplace](#), an international initiative launched in 2010. It also cooperates with Angola, Benin, Burkina Faso, Cape Verde, Chad, Congo, Ghana, Mali, Mozambique, Senegal, Tanzania and Togo - where Embrapa's regional office was established in 2005. The collaboration works through capacity-building efforts and large-scale projects.

Antônio Carlos Prado, coordinator of technical cooperation in Embrapa's International Relations Secretariat, tells SciDev.Net that there are big projects underway, "broad initiatives that involve establishing entities to test Embrapa's techniques in other countries".

There are five such large-scale projects underway. The first [works to apply cotton production techniques](#) developed in Brazil, such as pest control and soil management, and carries out tests on different varieties of cotton, produced by Embrapa, in Benin, Burkina Faso, Chad and Mali.

The second project investigates rice production techniques in Senegal. The other three - all in Mozambique and involving partnerships with Japan and the United States - tackle agricultural research, food safety and savannah preservation.

But Embrapa's initiatives are not just limited to scientific cooperation to develop specific research projects for improving agricultural knowledge, says Prado. They also involve technical collaboration - the transfer of technology and capacity building between local professionals.

In terms of technology transfer, Cabral says, the focus of Brazil's science and research cooperation in the agriculture sector goes beyond just transferring and adapting Brazilian technology to also include "strengthening agricultural research capacity in Africa, an area that has for long been neglected by governments and traditional donors.

"Brazil's so-called 'structuring cooperation' is aimed at moving beyond one-off training events and exchanges towards a longer-term cooperation relationship centred on building the capacity of local research systems."

And Juma writes: "Large African countries such as the Democratic Republic of the Congo, Nigeria, and Tanzania as well as regional bodies such as the East African Community have a lot to learn from the lessons of Embrapa and other Brazilian institutional innovations".

They could learn from Embrapa's focus on combined technical and credit support to farmers and on training new scientists, he writes, and could adopt similar agencies that focus on applying science and technology to drive agricultural transformation.

Some are already doing it.

"For example, Ethiopia has established its Agricultural Transformation Agency modelled on Embrapa," writes Juma.

Clédjo also agrees that science collaboration with Brazil should "be maintained and strengthened because Brazil is an example of success in almost all areas for African countries.

"Africa must take advantage of achievements made in science and technology by Brazil. In the agriculture and energy, Brazil has a lead and has developed technology that Africa must take ownership of since it has almost the same soil and climate," he says.

Clédjo adds that Brazilian expertise in sustainable energy attracts several African countries, including Benin, which are starting to experiment with the production of biofuel from sugar cane or ferns, following Brazil's lead on this.

Solidarity or business interest?

Brazil has technical or scientific cooperation agreements with a range of African countries, including Algeria, Benin, Botswana, Cameroon, Egypt, Gabon, Guinea-Bissau, Kenya, Morocco and South Africa - some of them established as long ago as the 1970s, while the Brazilian Cooperation Agency also promotes Brazil-Africa cooperation projects in construction, culture and education.

And economic efforts have intensified in recent years.

"From the 2000s onwards, Brazil became an international investor," says Ana Elisa Saggiore Garcia Muller, an international relations expert from Pontifical Catholic University of Rio de Janeiro and the Rio-based BRICS Policy Center.

"Brazil has gone through a process of internationalising its institutions and opening up areas of international cooperation through its ministries - all of which seek a leading role in the international sphere," she adds.

The country is scoping out and discovering African markets, and establishing itself as an important player in competition with other countries, such as the United States and, most recently, China.

But in Muller's opinion, Brazil's cooperation with developing countries, especially in Africa, is not entirely unselfish. "It involves economic interests," she says. "Africa is a region of expansion for Brazilian companies, particularly in oil exploration, mining and now in agribusiness. It's a very strategic territory."

Prado agrees: "Embrapa is a tool for Brazilian external politics. We do not invest our own financial resources in these projects: money comes from the Brazilian Cooperation Agency, and we enter into partnership with our experts and expertise."

Through Embrapa - with its international offices in countries such as Ghana, Mali, Mozambique and Senegal, and a Strategic Studies and Training Institute that focuses on tropical agricultural cooperation - and the Brazilian Cooperation Agency, the country is advancing agricultural diplomacy in Africa.

Muller suggests that relations are not completely altruistic but are focused on establishing new power relations in a South-South context. Clear advantages for Brazil include export increases and a strengthened footing in international markets.

African countries such as Nigeria, for example, are growing fast, and this reinforces the allure Africa holds for Brazil and other countries, Juma tells SciDev.Net.

Juma points out that in February, President Rousseff visited Nigeria to consolidate a cooperation agreement involving agriculture, energy and other areas.

"For nearly every African problem, there is a Brazilian solution from which Africa can learn," Juma says. "The best help that Brazil can give to Africa is to serve as a role model. Both have a lot in common, from geography to culture. In the past, Brazil has faced the same challenges that Africa does today, and the ways it used science and technology to address these challenges offers important lessons for Africa."

Juma also says that a Brazil-Africa partnership should be part of a larger trading arrangement that should benefit both sides. For example, "Brazil's experiences with containing HIV hold important lessons for Africa."

"But it is important that any initiatives to be learned from Brazil come from Africa and are not pushed by Brazil," Juma adds. "It is an opportunity for Brazil to pioneer a new approach to international technology cooperation that is focused on learning and not lecturing."

Yet, despite the still more than prominent role played by Embrapa, Cabral says her team's preliminary research counted more than 20 Brazilian agricultural organisations, both public and private, directly involved in development cooperation activities in African countries.

"As our research suggests, these different actors bring along a variety of experiences of agricultural development," she says.

This means that there may be a collection of contrasting perspectives, motivations and expectations on agriculture, development and cooperation.

"The agenda at the top may be dominated by relatively well-knit diplomatic and business agendas, but the diverse encounters on the ground are likely to take that agenda in unexpected directions," Cabral says.

Future challenges

Brazil is still adapting to its growing role of leading and investing in international initiatives, and there are some adjustments to make.

For example, Telles says that Fiocruz's initiative is unprecedented in that it seeks the representation of the Brazilian government outside the framework of the foreign relations ministry. "Until now," he says, "we have been waiting for the proper regulation of our African office by the federal government. This situation has limited our performance on the continent."

And Brazil still lacks legal mechanisms to facilitate collaboration in Africa and other regions. Prado says "the main difficulties are operational", citing, for example, delays in the purchase and delivery of equipment.

And the effects of Brazil's cooperation on indigenous research capacity in Africa are still to be seen.

"It is too early to know whether technology transferred from Brazil to Africa will be able to

strengthen the generation of local knowledge, says Muller.

Cabral agrees.

"It is early days for Brazilian cooperation," she says. "The initiatives that currently shape Brazilian cooperation are relatively new, most have been introduced in the last 4-5 years."

Significant challenges will face those tasked with evaluating the impact of these initiatives, she adds, "Project documentation with explicit objectives and targets is scarce and monitoring and evaluation mechanisms to assess progress are still largely underdeveloped."

Additional reporting by Christophe Assogba and Mićo Tatalović.

References

[1] Seibert, Gerhard. [Brazil in Africa: Ambitions and Achievements of an Emerging Regional Power in the Political and Economic Sector](#)

[2] Juma, Calestous. " [Africa and Brazil at the Dawn of New Economic Diplomacy](#) ." *Technology+Policy | Innovation@Work*, February 26, 2013.

[3] [China and Brazil in African Agriculture](#) , *IDS Bulletin*, July 2013.