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International Collaboration in Brazilian Higher Education

Abstract This paper examines the approach Brazil has taken to promote the internationalization of higher education over the last decade. Three key areas are identified: human resources development, institution building, and international partnerships. Our analyses of initiatives in these areas demonstrate that Brazil does not follow global trends such as the creation of world-class universities or the pursuit of “excellence initiatives” to help universities reach higher positions in global rankings. Instead, recent strategies for international collaboration in higher education follow variegated domestic goals that encompass the logics of foreign policy and the internal priorities of federal research and education agencies. The nature and limitations of these strategies are discussed.

Keywords Brazilian higher education, internationalization, higher education policy, international collaboration

Introduction

Brazil has become more visible as an international actor in recent years. The status of an emerging economy and regional power has brought the country’s higher education system into sharper focus in comparative studies (Carnoy et al., 2013). There is seemingly a consensus that Brazil is not as active as

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other emerging economies, particularly the more aggressive Asian “tigers,” when it comes to expanding the provision of higher education, and its scientific and technological infrastructure. Considering the political and economic imperatives undergirding such investments across the globe, the state of affairs in Brazil seems to be of relative complacency (Salmi, 2009).

On the other hand, several Brazilian initiatives to bolster higher education and science have gained prominence in recent years. Brazil is the leading country in scientific research in Latin America (Altbach, 2013, p. 2), and has the most advanced graduate education infrastructure in the region (Schwartzman, 2008). Brazil, like most Latin American countries, has operated independently in terms of promoting international collaborations in higher education. The region has generally low government support for these activities (Gacel-Ávila, 2012). Nonetheless, regional agreements have been debated (see Gazzola, & Didriksson, 2008, p. 177), and Mercosul Educacional has established a forum for regional debate among member states (see Mercosur, n.d.). Still, even the extended graduate education and research infrastructure of Brazil is not well integrated into global networks of knowledge production and higher education cooperation (Sá, Kretz, & Sigurdson, in press).

Given that the regulation of higher education is highly centralized under the federal government, understanding government policy is critical to grasping efforts at internationalization in Brazil (Pereira Laus & Costa Morosini, 2005, p. 120). A comprehensive definition of internationalization frames it as “the process of integrating an international, intercultural or global dimension into the purpose, function or delivery of post-secondary education” (Knight, 2004, p. 11). Internationalization strategies may include policies and programs to promote the integration of comparative and international aspects to the curriculum, hiring international faculty, international research collaboration and international student mobility (Knight, 2004, p. 17). Researchers, administrators, institutions and government

agencies are some of the actors involved in this process. Government involvement is expressed through policies and programs that promote internationalization, either directly or indirectly (Altbach & Knight, 2007; Knight, 2012). Unlike the process of regionalization, which promotes collaboration between neighboring countries in order to offset external pressures through initiatives such as standardization and policy harmonization, the process of internationalization is driven by national impetus and focused on initiatives that look beyond the geographic region (Enders, 2004; Verger & Hermo, 2010). This paper examines the approaches taken in Brazil towards internationalizing higher education over the last decade.

Brazilian federal research agencies have supported international research partnerships and placed Brazilian researchers in major multilateral scientific endeavors for several decades (Schwartzman, 2001; Sá et al., in press).

Nevertheless, recent federal governments have emphasized a south-south international cooperation approach, drawing from foreign policy priorities. Initiatives from the federal government can be clustered in three areas: human resources development, institution building, and international partnerships. These areas are discussed below, and the final section reflects on how Brazil's recent approach to internationalizing higher education in some ways departs from the strategies of other emerging economies.

Human Resources Development

The low availability of high skilled human resources presents a formidable bottleneck to the Brazilian economy. Recent federal plans and policy documents have acknowledged this problem, including the Action Plan in Science, Technology and Innovation (PACTI) and the Brazilian National Education

Plan. The problem is particularly acute in STEM (science, technology, engineering, and mathematics) disciplines (Ministry of Science and Technology, 2007, pp. 11–15). The recent expansion of scholarships for study abroad programs emerged from the context in which international mobility is promoted as a step towards enhancing the quality of academic preparation (Ministry of Education, 2010).

The Coordination for the Improvement of Higher Education Personnel (CAPES) Foundation and the National Council for Scientific and Technological Development (CNPq)—two support agencies linked to the Ministry of Education and the Ministry of Science, Technology and Innovation respectively—have funded international scholarships for a number of decades. These agencies have supported full and partial academic study at the graduate level in foreign universities, helping develop generations of Brazilian researchers. However, the scope of the scholarship program in Brazil has recently increased dramatically, particularly for students at the undergraduate level (Carnoy et al., 2013, p. 233).

In 2011, the Ministry of Education and the Ministry of Science, Technology, and Innovation launched the Science without Borders (SwB) program. This program seeks to award a total of 101,000 scholarships by 2015 (Science without Borders, 2013), with a distinctive focus on STEM disciplines. The argument for this expansion in the provision of scholarships for study abroad is that it will contribute to training highly-skilled professionals. More than half of the scholarships, 64,000, will be granted to undergraduate students, while a total of 33,000 will be distributed to Master's, doctoral and post-doctoral candidates. The undergraduate program and part of the graduate student scholarships follow the “sandwich” format, whereby students go abroad for one year as part of their studies at a Brazilian university. In fact, CAPES and CNPq used to allocate more funds for full PhD study abroad

scholarships, and have in recent years moved towards granting a greater number of sandwich scholarships instead, arguing that with more graduate programs in Brazil it was now unnecessary to send many students abroad for the entire length of the program (de Moura Castro, Barros, Ito-Alder, & Schwartzman, 2012, p. 31). The remaining 4,000 scholarships are aimed at visiting researchers from overseas to enable them to pursue collaborative projects in Brazil (Science without Borders, 2013).

The coordination and distribution of SwB is shared between CNPq (for undergraduate students) and CAPES (for graduate students). The estimated investment in the program is around USD 2.5 billion. Although a major part of the funding—75,000 scholarships—comes from the government, industry partners were expected to fund 25,000 scholarships (CAPES, 2012). However, there has been controversy over the planned funding structure with questions regarding transparency (Tadeu Moraes, 2014, July 31) and concerns over industry partners' actual commitment to funding their share of the program. In fact, of the 25,000 scholarships only 8,000 have been funded by industry thus far (Foreque, 2014, June 25).

Since the inception of the SwB program, Brazil has made agreements with several countries including the United States, Canada, the United Kingdom, Australia, Japan and South Korea, in addition to European Union member states. So far the United States has received the highest number of students, over 20,000 (Science without Borders, 2014). This program has gained much visibility internationally, arguably positioning Brazil internationally as an investor in human capital, as host countries and institutions have noticed the potential to attract funded students to their campuses. For instance, leaders from 14 Canadian universities have visited Brazil in 2013 to promote Canadian higher education (Humphries & Murphy, 2013). President Dilma Rousseff's government recently announced that there will be a new phase of SwB from 2015–2018 offering another 100,000 scholarships

(Tokarnia, 2014, June).

To date, results of the SwB program have been mixed. So far 70,188 scholarships have been implemented—the majority in the undergraduate sandwich category—with one year left to fulfill the goal of 101,000 (Science without Borders, 2014). Expectations were exceeded in the demand for undergraduate sandwich category, and in the number of visiting researcher awards to foreigners, to collaborate in projects based in Brazil for two to three years (Batista de Albuquerque, 2013). Nevertheless, applications in other program categories remained below expectations. One of the major obstacles for the SwB program is the low rate of competence in second languages, mainly English. In an attempt to address this issue, agreements were made with host universities abroad to provide language instruction grantees prior to the beginning of their studies (Batista de Albuquerque, 2013). Moreover, due to the large number of scholarship recipients and the large number of universities across the world that take part in the program there are questions regarding the ability to manage and supervise the program effectively. In fact, issues can arise with the supervision of the courses that students take, and the internship placements putting in question the overall quality of the education received through this experience (Ao custo de R\$ 3 bi, 2014, June).

Moreover, the design of this program raises multiple questions. The preference for short length scholarships, particularly at the undergraduate level, seems highly questionable. One-year sandwich programs arguably fall short of providing effective opportunities for students to engage in intercultural relations and truly explore the academic environment available in the host country (Giordano & Pagano, 2013, p. 24). At the doctoral level, a year abroad can be easily articulated within grantee's home graduate program, whether as part of students' training in a lab setting or carrying out part of her research abroad. The mentorship/apprenticeship aspect of graduate education, as well as pre-existing

relationships among Brazilian faculty and international peers, can facilitate the insertion of grantees internationally. At the undergraduate level, however, how the program ensures connections between domestic and foreign coursework and experiences remains questionable.

Institution Building

Since 2009, the federal government has established four new universities with distinctive missions comprehending an international and/or regional dimension. These federal universities stem from *Reestruturação e Expansão das Universidades Federais* (REUNI), a plan to restructure and expand federal universities, established in April 2007 during Lula da Silva's government (2003–2010) and as a continuation of the 2003–2006 expansion plan (Ministry of Education & Department of Higher Education, 2008; Mota, n.d.). The main goal of this program is to help expand the federal university system in order to improve access to higher education. Through this program each federal university receives funds to support development and increase enrollments, and new universities have been created in areas that have previously been underserved (REUNI, 2010). Of the 14 new universities established since 2003 under this scheme, the four most recent ones also have aspects of internationalization as a formal institutional objective.

The University of the Southern Border (UFFS) was created in 2009 primarily to respond to economic and social issues in the southern region of Brazil, near the border with the MERCOSUR member states. The six campuses that make up the university have been established in municipalities that have not had proper access to higher education (Oliveira, 2009, September 18). In 2014 the university enrolled 6,240 students, and most (95%) came from the three southern states of Brazil: Paraná, Santa Catarina and Rio Grande do Sul, where the campuses are located. Although no foreign students have been admitted yet,

there have been a number of discussions around exchange agreements with universities from countries such as Argentina (UFFS, 2011).

The university's contribution to the regional economy is part of the institutional mission (UFFS, 2010, p. 11). Cross-border collaboration can be observed in research projects dealing with transnational issues, with a focus on the MERCOSUR bloc, and an engagement with problems and actors in the bloc's member states. UFFS is already part of the *Red Inter Universitaria de Internacionalización del Conocimiento orientado al Comercio, el Desarrollo y la Integración Regional* (RED CIDIR), an inter-institutional network focused on internationalization with members from Argentina, Brazil, Mexico, Paraguay, Spain, Uruguay and Venezuela (RED CIDIR, 2012). As a member of this organization, UFFS takes part in activities and events concerning regionally relevant issues (Agroecología, 2011).

The University of Amazonian Integration (UNIAM/UFOPA)¹ was also created in 2009. Like UFFS, UNIAM has several campuses and aims to serve a population with historically low access to higher education (UFOPA, 2013). This university is another example of international collaboration in that it offers spaces for students from bordering Latin American countries. The aim is to create a Pan-Amazonian program admitting students from outside Brazil and within the Amazonian region (Bolivia, Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname and Venezuela), initially in graduate and research program (Oliveira, 2009, September 18). In 2013, UFOPA signed an inter-institutional agreement with the Scientific University of Peru, committing to the development of academic and technical cooperation (Brasil, 2013, July). As a result of this agreement both institutions plan to collaborate in joint projects that address common issues in their region.

The University of Latin American Integration was created in 2010 and it represents a greater scale of

¹ The university's original name was Federal University of Western Para, later changed to the University of Amazonian Integration.

regional and international outreach. As its name denotes, UNILA's mission is to engage with Latin American countries in the pursuit of greater academic cooperation and exchange. Located in Foz do Iguaçu in the southern state of Paraná, UNILA is the most recent incarnation of historical attempts to create a university for the MERCOSUR area (Ministry of Education & UNILA, 2013, p. 8). To advance its mission, UNILA adopted a 50% admissions quota for international students (UNILA, 2011). In terms of faculty, most are Brazilian professors (118), with 26 professors from other participating countries (Ministry of Education & UNILA, 2013, p. 41). Yet, the university's goal is to eventually reach an even distribution of Brazilian and foreign faculty members. While this university represents a potentially bold attempt to support a regional integration agenda (Ricobom, 2010, p. 3742), delays in infrastructure funding have significantly halted its operations (Hass Carazzai, 2014, July 24).

The fourth special mission university recently created is *Universidade da Integração Internacional da Lusofonia Afro-Brasileira* (UNILAB) or the Afro-Brazilian Lusophone International Integration University, whose mission is to promote cooperation among Portuguese-speaking countries. The university's campuses are located in previously underserved areas in the northeast of Brazil. UNILAB seeks to bring an international dimension to its academic programs, which have a focus on local economic challenges. For example, the university has courses in agronomy that focus on the real world challenges of this profession. Within this program, foreign students are able to complete an internship in their own country to learn about local needs (UNILAB, n.d.a). The university's research programs also emphasize local concerns, such as the development of sustainable energy solutions for the Maciço de Baturité region, where the university is located (UNILAB, n.d.b).

In terms of its enrolment distribution, just like UNILA, UNILAB has a 50% quota for students from other Portuguese-speaking countries (OBHE, 2009, November). Consistent with the foreign policy

agenda of the Lula da Silva government (2003–2010), which sponsored its creation, UNILAB has emphasized linkages with Portuguese-speaking countries in Africa (OBHE, 2009, November, p. 2). So far, from 1,352 students, 299 come from the participating African nations, with students from Guiné-Bissau accounting for almost 50% of those places (UNILAB, 2014). There are also a total of 85 faculty members of which 11 are from foreign countries and evenly spread between the participating countries (UNILAB, 2014). There is no doubt UNILAB is the most unequivocal example of south-south cooperation. Yet, foreign student enrolment numbers are lower than expected and success of the initiative will be measured against this factor.

International Partnerships

Brazilian federal research agencies have a long track record of supporting international research partnerships (Schwartzman, 2001). These efforts continue at the federal level, and also in the state of São Paulo. Bilateral agreements have existed with various countries in Europe, North America as well as Latin America for decades (CNPq, n.d.a). The São Paulo Research Foundation (FAPESP) actively promotes collaboration between researchers in the state of São Paulo and researchers from abroad through initiatives such as the São Paulo Researchers in International Collaboration (SPRINT) program, and the Newton Fund that promotes collaboration specifically with researchers from the UK (FAPESP, 2014). Recently, a focus has emerged on south-south collaboration in research as well. With a positive reputation for research among developing countries, Brazil is considered a desirable partner in this area and, as a result, has sought to increase its influence by partnering with other countries in the global south (Rowlands, 2008, p. 13). More specifically, this has compelled Brazil to engage in bilateral and multilateral collaborative programs with other emerging economies (UNDP, 2009, p. 91).

A number of programs managed by CNPq and the National Institute of Space Research (INPE)—another federal agency supported by the Ministry of Science, Technology and Innovation—have demonstrated a focus on countries in the global south (de Brito Cruz & Chaimovich, 2010). The Inter-American Collaboration in Materials (CIAM) and the China-Brazil Earth Resources Satellites Program are examples of ongoing partnerships in specific areas of research that have an impact on natural resources and geographic concerns in Brazil and the collaborating countries (CNPq, n.d.b; CBERS, 2012, June). In addition, programs such as *Programa Sul-Americano de Apoio às Atividades de Cooperação em Ciência e Tecnologia* (PROSUL)—a program to support research collaboration within South America—and *Programa de Cooperação Temática em Matéria de Ciência e Tecnologia* (PROAFRICA)—which supports research cooperation with Portuguese-speaking African countries—have helped create links with other countries (CNPq, n.d.f; CNPq, n.d.c).

The CIAM is an international multi-agency initiative and a program supported by the CNPq that focuses its efforts on materials research. Members of this program span those outside Latin America and include Canada, Trinidad and Tobago, and the United States along with Argentina, Brazil, Chile, Colombia, Jamaica, Mexico, and Peru (CNPq, n.d.b). The support is framed as mobility funding for researchers to travel abroad to and from the participating countries. Each country is responsible for funding their researchers. So far, the CNPq has put forward five calls since CIAM's first implementation in 2002. In each call between six and 12 projects were funded per year (CNPq, n.d.b).

Another program that focuses on a specific area of research is the China-Brazil Earth Resources Satellites (CBERS), created under the National Institute of Space Research (INPE). The CBERS has actually been in place since 1988 but was recently renewed in 2012 (CBERS, 2012, June) as it is a priority area under PACTI (Rezende, 2010). Through this program Brazil and China collaborate on

space research and conduct satellite missions (CBERS, 2011). The CBERS program is important to Brazil because it offers an avenue for technological innovation for its domestic industry, but it also creates closer relations with China (CBERS, 2012, August). In fact, after the first BRICS innovation, science and technology ministerial meeting it was agreed that collaboration on areas such as space research will be strengthened through a partnership between all BRICS countries (CBERS-3, 2013). Brazil has also reached out to members of the MERCOSUR bloc with PROSUL. This program, operated by CNPq, was created in 2001 by the Brazilian Ministry of Science, Technology and Innovation, and is solely managed by the Brazilian government. Since its inception PROSUL has posted 11 calls for applications in different years and has funded between 20 and 60 projects in each call (CNPq, n.d.e). The 2010 call, for instance, had a BRL 2 billion budget (CNPq, 2010). Aside from collaborative research projects, PROSUL helps fund conferences in Brazil for program participants. The program is undergoing a review process, with the formal goal of strengthening the program's international agenda (Novo, 2012, November).

PROAFRICA is a similar program to PROSUL that originated in 2004 with the aim to create research partnerships with Portuguese-speaking African countries (CNPq, n.d.d). Brazil has sought to demonstrate a commitment in Africa through this program as it is geared towards contributing in the development of the region (Seibert, 2011). Managed also by the Brazilian government and operated by CNPq, PROAFRICA was specifically designed to help African countries in the development of scientific and technological advancements through financing of collaborative research projects between Brazilian and African researchers and through the financing of conferences and symposiums that may take place both in Brazil or in the participating African country (CNPq, n.d.c). Within this framework, then, the funding is also directed at promoting mobility between these countries. Since its creation the

program has launched five general calls in which 11 projects were funded in 2006 but have been increasing in number, reaching a peak in 2008 when 57 projects were funded (CNPq, 2008). Since 2011 the program has also been under review. The total spending so far has been BRL 9.5 billion, about BRL 2.0 billion a year (CNPq, n.d.c).

Conclusion

Overall, a common feature of internationalization for members of the BRICS is that the process is state-led (Carnoy et al., 2013). The fact that the state is the biggest source of funding for public universities in these countries has allowed governments to have a strong say on developments in international collaboration. Many countries have embarked on efforts to build world-class universities (Salmi, 2009; Altbach & Balán, 2007) or “research excellence” (Carnoy et al., 2013, p. 24) guided by a strong international orientation. Some countries are also adding English language components to their curriculum (Altbach, 2013, p. 3), as China and Russia have done, to facilitate the recruitment of foreign faculty and students. Competition in global university rankings has also emerged as an explicit concern and motivation in some countries, prompting the adoption of policies and practices that induce international linkages (Deem, Mok, & Lucas, 2008).

In Brazil, however, there is no discernible sense that competing globally in higher education and research should be a major priority, or that the relatively modest international standing of national universities is a policy problem, as even the most elite universities remain locally oriented (Schwartzman, 2007). Rather, the Brazilian initiatives discussed above have followed from variegated domestic issues and demands, influenced by national politics and foreign policy. There is clearly no articulated framework, strategy or shared vision guiding these efforts. Instead, they have arisen at

different points in time as a result of various circumstances.

South-south collaboration gained much currency during the Lula da Silva government (2003–2010), when many of the initiatives above originated. Indeed, Brazil is the leader in South America in supporting cooperation projects (Pinheiro & Gaio, 2013, p. 20). The country has prioritized horizontal cooperation, in that participants form an equal partnership, rather than vertical cooperation based on donors and receivers of aid. In fact, this is evident by the types of partnerships the government has endorsed over the last decade (Rowlands, 2008, p. 7). Currently, though, many of these programs are undergoing restructuring. While this period brought about new institutions and some research cooperation programs focused on opening or linking Brazilian universities with south American neighbors and Portuguese-speaking countries, the operational outcomes of these efforts are mixed or questionable. Ultimately these issues interfere with program continuity. Due to program reviews, international research partnership programs such as PROSUL and PROAFRICA have been stalled since 2010. The purported objective of these reviews is to improve the international agenda (Novo, 2012, November; CNPq, n.d.c), but the review processes have been rather opaque. Thus far results have not been made public, nor have measurable outcomes that demonstrate these programs' impact been disclosed.

Difficulties with implementation have plagued the initiatives discussed above. The creation of UNILA, UNILAB and UFOPA, universities with lofty mandates but rather limited resources, suggests very modest ambitions and objectives in practice. These universities seemingly indicate that Brazil is establishing a foundation for cooperation and solidarity with other nations in the global South, but tentatively and at a small scale. International student enrolments are quite low, though they are expected to grow substantially. The funding and infrastructure issues they have faced denote a lack of

planning and priority to building these institutions to live up to their missions. Implementation issues have also been apparent in SwB, despite the publicity around it. The expectation of having over 25 percent of all scholarships funded by industry has proved unrealistic. Even if the quantitative goal are met, operational concerns may be hindering the effectiveness of the program (de Moura Castro et al., 2012; Gomes, 2014, March), and its priorities are questionable.

Effective internationalization requires initiatives to be integrated into the wider landscape of higher education in the country, and in a manner that is sustainable (Gacel-Ávila, 2012). Brazil's initiatives have instead been developed on an ad hoc basis, and are not part of an overarching project, which limits their potential. Certainly, support from the federal government to build an international orientation is an important step, but there needs to be greater institutional involvement to deepen the impact of internationalization in the higher education sector and generate more profound results.

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