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SOME ASPECTS OF THE BRAZILIAN SCIENCE DIPLOMACY

Angelita Gomes Freitas de Castro

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Counsellor: Prof. Vania Isabel Carvalho Pinto, PhD.

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Abstract: The main objective of this article is to present science diplomacy as a tool, technique, and method to solve or mitigate challenges and problems within the global system. Comprehending the meaning of the two words and the whole term, also the roles epistemic communities and diplomats play is one of the backbones of the work. The analysis of concrete cases enhance the importance of the institute, due to the outputs. As its main contribution, the work aims to observe how the Brazilian foreign policy has deal with science diplomacy.

Key-words: globalisation; research and development; cooperation.

Resumo: O principal objetivo deste trabalho é apresentar a diplomacia científica como uma ferramenta, técnica e método para resolver ou mitigar desafios e problemas no sistema global. Compreender o significado das duas palavras e de todo o termo, e também os papéis que as comunidades epistêmicas e diplomatas desempenham é uma das espinhas dorsais do trabalho. A análise de casos concretos realçam a importância do instituto, devido aos resultados. Como principal contribuição, o trabalho visa observar como a política externa brasileira tem lidado com diplomacia científica.

Palavras-chave: globalização; pesquisa e desenvolvimento; cooperação.

INTRODUCTION

This article focuses on the role science diplomacy plays within the global system and emphasizes some aspects of the Brazilian science diplomacy. In this sense, initially, the world is the *locus* of ceaseless development in several areas. In all of them, the Internet is the common element that has promoted this evolution. From 60s on, the rise of the World Wide Web has changed the way state and non-state actors interact. The virtual and the real worlds have fused and the borders among nations have become porous; individuals have turned into global citizens.

At the same time the world has appeared smaller than before, the issues and the challenges have acquired mammoth dimensions. Finding new elements, methods, and techniques to deal with the new problems is imperative for the 21st century. It develops the argument that science seems to be apposite for this moment, due to its basilar tenets. Within a borderless world, the bigger the coverage of the method to untie the knots, the better. In this sense, the first part of the work presents the importance of science within a framework designed by globalisation.

Moreover, the link between science and diplomacy has the potential to materialise the knowledge and outputs science produces. The epistemic communities and the body of diplomats have peculiar features that could work well together. The second part of the work is dedicated to the analysis of the terms and to the comprehension of some concrete cases, evidencing elements of the science diplomacy in some developing countries, such as South Africa, Cambodia, Mauritius, and Iran, respectively.

The last part of the work intend to gauge how Brazil, especially by its Ministry of Foreign Affairs, has been tackling with science diplomacy. Furthermore, in order to delve the analysis, some cases will be examined.

I will conclude by suggesting that Brazilian actors, mainly the organ of the federal government, defining better the conceptual framework of the documents and that they valorize the work of a scientific diplomat.

1. THE RELEVANCE OF SCIENCE IN THE GLOBALISED WORLD

The information, consumers, investments and corporations flows are good telltale signs of the globalisation process and the transformation of human society. In this sense, from the 60s on, the gradual rise of the Internet, a tool designed to process and share huge volumes of data, has marked a generation and the beginning of the mass connectedness worldwide. In this scenario, Kenichi Ohmae (1996) presents the idea of a borderless world. Developing the argument, Parag Khanna (2017) confirms the existence of countries with porous borders, having the World Wide Web as a symbol of the phenomenon too. For this author, the Internet is not an invisible infrastructure only, because “the junctions between the physical and the virtual worlds are growing with complex ripple effects.” (p. 330).

The empowerment of the globalisation process, where the Internet is a fuel, contribute to maximise communication; and the instantaneous and simultaneous communication represent maneuvers of sovereign states and all stakeholders with relevant reverberations anywhere in the planet (LIM, 2014). The Indian author poses the interaction among all is an impulse and the new-pattern of the age, mainly after examining borders, maps, supply chains and political and functional geography, and adds, “[m]ore connectivity means more growth and more flows.” (p. 43). Besides, “[c]onnectivity brings individuals the choice to belong to other places than those they do or to have loyalty to multiple places at the same time.” (KHANNA, 2017, p. 339).

As a logic expression, in a place where there is a mammoth interaction among countries and where the individuals turn into global citizens, the issues and challenges acquire global magnitude. State or non-state players, each part of the system is aware of what happens in the globe.

Listing all of the mentioned problems is an ineffective task, due to its amplitude. But the United Nations (UN) enumerate some, as an overview of the subject: human rights, children, youth, ageing of the population, health, climate change, decolonization, atomic energy, big data for the Sustainable Development Goals (SDGs), democracy, food,

gender equality, ending poverty, peace and security, migration, refugees, and others (UNITED NATIONS, 2020).

Each item above has its own definition, regime and agenda, but they all have global characteristics and matter to the whole world. For instance, the impact of the migration wave into Europe, started in 2015, does not refer only to the specific continent, neither to only few of its countries (SPINDLER, 2015). The Brumadinho dam disaster, in 2019, in Brazil, affected the local and international populations, since the toxic sludge pour into the ocean (SENRA, 2019). The violence against women is an international concern, requiring a set of actions from different groups; Phumzile Mlambo-Ngcuka (2020), executive director of the UN Women, presents the following information about it, which is at the same time related to the social isolation measures regarding the Coronavirus pandemic:

As more countries report infection and lockdown, more domestic violence helplines and shelters across the world are reporting rising calls for help. In Argentina, Canada, France, Germany, Spain, the United Kingdom, and the United States, government authorities, women's rights activists and civil society partners have flagged increasing reports of domestic violence during the crisis, and heightened demand for emergency shelter. Helplines in Singapore and Cyprus have registered an increase in calls by more than 30 per cent. In Australia, 40 per cent of frontline workers in a New South Wales survey reported increased requests for help with violence that was escalating in intensity.

Confinement is fostering the tension and strain created by security, health, and money worries. And it is increasing isolation for women with violent partners, separating them from the people and resources that can best help them. It's a perfect storm for controlling, violent behaviour behind closed doors. An in parallel, as health systems are stretching to breaking point, domestic violence shelters are also reaching capacity, a service deficit made worse when centres are repurposed for additional COVID-response.

The example above shows clearly one subject connects many countries and has the potential to affect different areas, such as justice, health and economy. Solving or reducing collective harms calls international commitment, thus.

In this term, science plays a relevant role. Due to its basilar principles, such as universality, rationality and transparency, science is the same in the whole world. It does not distinguish who benefits from the outputs of the researches or where they are going to be applied. Moreover, the form to acquire knowledge is based on evidences and the science is founded on empirical methods and repeated verification of outputs. These elements compose the backbone of the institute and its neutrality calls attention.

At first glance, thinking of science is imagining a researcher in laboratories. In the 21st century and mainly analysing the subject within the International Relations discipline, though, the comprehension of science shall be broad. According to the American Association for the Advancement of Science (2009), “[w]ithin this framework, science is considered in its broadest sense to encompass not only scientific research but also the whole range of international scientific cooperation activities including education and capacity building and the people involved in the enterprise”.

The need to face worldwide issues and challenges claims appropriate tools. Indeed, it is correct to say one of them is science. In order to achieve its goals, the interaction with policymakers and diplomats is imperative.

2. SCIENCE DIPLOMACY

2.1. Conceptual Framework

According to The Royal Society and the American Association for the Advancement of Science (2010), three aspects integrate Science Diplomacy: science in diplomacy, which refers to informing foreign policy the objectives with scientific advice; diplomacy for science, which ease the cooperation with international science; and science

for diplomacy, when the countries use science cooperation to boost the international interactions. About these facets, MUPEYIWA (2017) synthesizes:

Perhaps most importantly is the maintenance of the philosophies in each word of the term. Science attempts to unravel the mysteries of the universe through reasoned approach, rigorous testing, and communal review and understanding. Diplomacy seeks to bridge the gaps between the world's communities, employing the pursuit of tolerance and understanding with the ultimate goal of resolving common differences. Science diplomacy primarily seeks to bring these two concepts together so that each individual aspect of their doctrines can enhance the other. (p. 57).

Understanding what science and diplomacy are, separately, is a *condition sine qua non* for the entire comprehension. As previously mentioned, science is a body of principles with an evidence-based form of knowledge acquisition. It is not only founded on empirical methods, but also on repeated verification of results. Diplomacy is a non-violent approach to the management of international relations, based on dialogue, negotiation and compromise. Diplomats represent and promote the interests of the nation at the global level, aiming to strength cooperation bonds and providing assistance to its citizens abroad (MINISTRY OF FOREIGN AFFAIRS, 2020).

Therefore, science diplomacy is “the use of science interaction among nations to address common problems faced by humanity and build constructive, knowledge based international partnership.” (SEANG, 2017). In detail, according to Turekian; Macindoe; Copeland; Davis; Patman; Pozza (2015), science diplomacy is:

[...] the process by which states represent themselves and their interests in the international arena when it comes to areas of knowledge – their acquisition, utilization and communication – acquired by the scientific method. It is a crucial, if under-utilized, specialty within the diplomatic constellation that can be used to address global issues, enhance co-operation between countries and leverage one country's influence over another. In this regard, Science diplomacy is a significant generator of

soft power (Nye, 2004) – that potent form of attraction that harnesses national image, reputation, and brand. More broadly, science diplomacy is an effective emissary of essential values such as evidence-based learning, openness and sharing. Science diplomacy is increasingly critical to addressing many of the planet’s most urgent challenges – such as management of the global commons, faltering public health systems, and the threat of collapsing ecosystems. It can also be used to enhance one nation’s interests with respect to another or to defuse international tensions. (p. 5).

In addition, COPELAND (2016) studies the meaning of the expression observing the negative aspects of each term. The author emphasizes how science is a complex and close field, how diplomacy is elitist and ineffective, how international policy is esoteric and ambiguous, and, finally, he says science diplomacy is obscure and still ignored. Notwithstanding, he poses:

[...], SD is important and is becoming more so in an increasingly *heteropolar* world order where the vectors of power and influence are characterized more by difference than similarity and S&T based challenges are multiplying.

At the highest level of analysis, SD can best be understood as a diplomatic technique by which S&T knowledge is freed from its rigid national and institutional enclosures, thereby releasing its potential to address directly the drivers of underdevelopment and insecurity. (p. 628-629).

By the analysis of all lessons above, it is correct to affirm that science diplomacy is a general term, formed by three facets: science in diplomacy, diplomacy for science and science for diplomacy. It is also a species, having science for diplomacy its fulcrum, because of the main objective of using the cooperation amid epistemic communities (science) to solve common problems and face international challenges, and enhance international bilateral and multilateral cooperation.

Moreover, the traits of the institute suggest science diplomacy is a type of soft power, according to the intelligence of Joseph Nye (2004). In this context, science is an element a nation uses for attracting and persuading – keeping distance to military force and economic sanctions –, in order to deal with other nations regarding global wicked issues and challenges. However, it is important to stress that, historically, science used to be a source of hard power, once it was primordial to the results of wars and to the military field. About these points and the apparent conceptual mutation of the term, “[t]he innovative approach of Science Diplomacy lies in treating Science and Technology topics as soft powers instruments. Due to the attractiveness and influence of S&T, they can serve as a national global power asset that transcends national interests.” (DOMINGUES, 2019).

2.2. The behaviour of some developing countries

The union between the epistemic communities and the body of diplomats is not enough to put science diplomacy in practice. Good governance, great economic equality and social justice are key elements for the good aftermath of the institute (COPELAND, 2016). All these elements and the peculiar history of each state explain why scientific diplomacy is not new in developed countries; in contrast, it is in developing countries. In addition, there is the common perception that developed countries are producers of knowledge, while developing countries are consumers of it. The phenomenon deserves an overview, focusing on the agenda of some developing countries. The following analysis aims to highlight few aspects of the recent history and of the national plan related to science diplomacy; also, a concrete case.

For instance, Masters (2016) presents a discussion paper about the situation in South Africa. The author mentions the country maintained isolated for several years, due to the recent history – referring to the apartheid period – and to the poverty. These circumstances extoll why the nation was not familiar with science diplomacy so far and the democratic transition is taken as the turning point for the improvement of the science and technology scenario.

The Department of Science and Technology of South Africa (DST) has played a relevant role in this framework and has faced the international engagement in developing the knowledge economy for the future of the country. Changing the producer-consumer perception is one of the goals within the government's agenda. The embryonic project of this set of interactive actions corresponds to the economic and agriculture field evolving South Africa and the European Union (EU): because of a fungal disease (citrus black spot) and the fear of infecting orchards, the EU stopped importing citrus from South Africa. In this case, the South African country sent to the EU a specialist (epistemic community) in order to head the delegation and try to solve the trade issue by the application of science. After scientific processes, the parts concluded the disease was not harmful to orchards, allowing the continuity of the negotiations (MASTERS, 2016). Thus, it is perceptible not only science was used as a pillar for the platform for discussion, but also South Africa produced knowledge, becoming a paradigmatic case.

Aware the country is not a developed country yet, the agenda of the DST considers the producer and consumer facets regarding science diplomacy:

Given its current domestic priorities and international position as an “emerging state”, South Africa's science diplomacy reflects a two-track approach. The first is South Africa's use of science diplomacy in support of a strategic international position within the current global structure, where a position as a “producer” and exporter of knowledge is pursued. The second track aims to address the increased challenges facing the state as a “consumer”, or attracting and importing knowledge, as South Africa increasingly competes with other developing countries for access to capacity development and resources. (MASTERS, 2016, p. 177).

Taken the two-track approach as starting point of the plan, South Africa's science diplomacy project is to emphasize its role as an important country in the global system.

Cambodia is another example of developing country where the using of science as a diplomatic technique is new. The country was stage for battles with France, Thailand, and Vietnam and the place where Khmer Rouge promoted a civil war. Its history

demonstrates the difficulties to develop in the global system. In addition to it and according to Seang (2017), despite the country has joined the Association of Southeast Asian Nations (ASEAN) in 1999, the ideas concerning science diplomacy were not clear and comprehensive. By the way, the ASEAN program of cooperation regarding science covers areas like marine, food, space, microelectronics science and technology, non-conventional energy research, biotechnology and others. Only later, the Ministry of Planning, with the Republic of Korea buy-in, has formed the Cambodia's National Science and Technology Master Plan, an agenda to cover from the year 2014 to 2020.

Punctually, education is one area of the plan and it is going to be used as illustrative example. In this regard, Seang (2017) demonstrates the cooperation between the government of Cambodia, represented by the Ministry of Education Youth and Sports (MOEYS), and the World Bank. In this case, this institution supports the implementation of the program financially and technically. According to the author, “[t]he focus of the Policy on Research Development in the Education Sector is to enhance the quality of education, increase new knowledge and develop the society, economy and culture.” (SEANG, 2017, p. 5). Some outputs of the mentioned interaction among state, bank, and regional forum have appeared in the Engineering Education of the Institute of Technology of Cambodia (ITC). The higher education public institute, in the specific discipline, has paramount importance in South Eastern Asia and the success of it has been result of international commitment that corresponds to:

[...] the French Coopération, Agence Universitaire de la Franophonie (AUF), La Communauté Française de Belgique (CUD), AUN/SEED-net, GMSARN, and the School of Internet Network. Through the cooperation, the Institute receives support, in terms of training and facilities, from a number of countries including France, Belgium and Japan. That allows ITC to develop the management structure and staff's capacity, the education systems and recently the research activities. (SEANG, 2017, p. 6).

The ITC offers engineering degree and continuous programs, master and PhD programs too. The institute has delved in research activities, whose financial support has come from the Cambodian institute and from Belgium, Japan, World Bank, Australia, Spain, the United States of America (USA) and Korea. Besides, the researches activities are focused on water and wastewater treatment, food processing, inventory of nutritional facts of indigenous fruits and vegetables in the country, environmental issues including air and surface water management and monitoring, water resource engineering and irrigation, Khmer language automatic processing application, biodiesel, rural electrification, survey of construction materials, upgrading agricultural product and waste materials, arsenic removal technology from drinking water, solid waste management and climate changes (INSTITUTE OF TECHNOLOGY OF CAMBODIA, 2020).

In Mauritius, only in 2010 the government of the erstwhile colony created a Ministry dedicated to science diplomacy. The Ministry of Tertiary Education, Science, Research and Technology, which plan is to transform Mauritius into a regional and international reference, establishes science and technology as basis of the blueprint. The authority recognises these elements “are crucial in addressing these challenges and many countries are investing significant efforts to upgrade human competencies in science, technology and innovation, strengthen S&T resources and accelerate research and development (R&D) and innovation.” (GOKULSING; MADHOU; SUDDHOO, 2017, p. 32).

The recent global financial, climate, and energy crises were the main reasons for this turning point within the government, which is part of the Small Island Developing State (SIDS). As ongoing results of the project, there are, in regional instance, the NEPAD/SANBio (Southern African Network for Biosciences), where the participation of Mauritius has been to host the project at the University of Mauritius since 2009; the Southern Africa Development Community (SADC) STI Program, where the island hosted the first SADC Science Engineering and Technology Week in 2009. Within the International Science Council (ISCU) Regional Office for Africa, Mauritius has participated in several initiatives, such as: the country has contributed for the Science Plan

on Natural and Human-induced Hazards and Disasters in sub-Saharan Africa, sustainable energy, health and human-being, natural and human-induced hazards for disasters. As mentioned before, the government of the island plans to leverage the interaction of the country in the global system, and the mentioned actions might be considered an effective kickoff.

In Iran, the Iranian Revolution and the Iran-Iraq War are symbols of conflicts that interfered with the development of the country. Nevertheless, scientific endeavours have been checked in order to materialise the agenda based on science and technology evolution, set by the Ministry of Foreign Affairs. It is remarkable to mention the existence of the Vision 1404, the first national overall science and technology development blueprint of Iran. It was launched in 2004 and sets forth the scientific, technological, and economic strategic vision and general goals over a 20-year period. Considering the Vision 1404 was composed almost entirely by tenets, the government launched, in 2010, the General National Scientific Plan, also known as The Supreme Council of Cultural Revolution, with a better structure and well-defined goals (GHAZINOORY; SOOFI, 2013).

The cooperation among state and non-state actors has resulted in “more than 500 research centers, nearly 200 universities, more than 150 incubators and science and technology parks and over 4 million students preparing the country for its scientific and technological leap.” (AHMADI; AMIRINIA; BIRANG, 2017, p. 14). With the objective of becoming a producer of knowledge, Iran, a developing country and a member of the Non Aligned Movement (NAM), hosted an international event in 2012, in Tehran, the Science and Technology Diplomacy for Developing Countries jointly with the NAM Science and Technology Centre, what can be taken as a fruitful commencement.

By the foregoing data, it is possible to affirm the cited developing countries have fostered significant changes within domestic – higher education institutes, government, *e.g.* – and international – forums, blocks, *e.g.* – fields, in order to solve or mitigate problems and challenges inherent to the global system. In the 21st century, facing the historical features of each state and the potential each one has to be consumers and

producers of knowledge, science diplomacy might be understood as a bridge to link the players within the globe.

3. SCIENCE DIPLOMACY IN BRAZIL: AN OVERVIEW

The commitment of Brazil to development and cooperation, in the internal and international orders, is a pillar of the Constitution of the Federative Republic of Brazil (1988). Its preamble is clear when determines the institution of the democratic state for the purpose of ensuring, among other rights, the exercise of development. Within the list of fundamental tenets (Title I), the Article 4 lays down the international relations of the nation are governed by the following principles: national independence, prevalence of human rights, self-determination of the peoples, non-intervention, equality among states, defense of peace, peaceful settlement of conflicts, repudiation of terrorism and racism, cooperation among peoples for the progress of mankind and granting of political asylum (CONSTITUTION OF THE FEDERATIVE REPUBLIC OF BRAZIL, 1988).

The Ministry of Foreign Affairs, or Itamaraty, is the organ that works to achieve Brazil's relations with other nations and the Brazilian participation in global organisations. Besides, the mentioned organ within the parameters set by the Federal Constitution (1988) shall execute the foreign policy defined by the Presidency (MINISTRY OF FOREIGN AFFAIRS, 2020).

The Brazilian foreign policy carries the features of being universalist, pacifist and nonviolent; also, the art of negotiating is the main technique to deal with international controversies. Some traditional socio-cultural factors are responsible for building the identity of the policy; in this regard, illustratively, the vast dimension of Brazilian territory, the great amount of natural resources, good relationship with neighboring countries, cultural heterogeneity and social tolerance. By the way, Lima (2016) presents piece of information that corroborates it:

Graças, em boa medida, ao trabalho iniciado por Rio Branco, temos hoje uma vizinhança em que prevalecem a paz e a cooperação. Há mais de

140 anos não nos envolvemos num conflito militar em nosso continente, um fato sem equivalência em países com nossas dimensões e com fronteiras tão vastas.

[...]

O Brasil é inequivocamente um país com vocação para ser um ator global. Muitos se referem a nós como uma potência regional, mas isso não pode significar jamais que nossa atuação esteja cingida a nosso entorno geográfico. Somos uma das poucas nações – estima-se que sejam apenas poucos mais de uma dezena – que mantêm relações com todos os estados membros das Nações Unidas. Isso é uma demonstração, por si só, da qualidade de nossa atuação diplomática no mundo. Temos uma tradição de respeito ao direito internacional e de engajamento nos foros multilaterais. Somos também reconhecidos como um país capaz de estabelecer pontes, ajudar na construção de consensos e na busca de soluções criativas para temas da agenda internacional. A preservação e o fortalecimento dessa vocação universalista da política externa brasileira dependem do aprofundamento de nossos laços com países das mais distintas regiões e graus de desenvolvimento. Estamos empenhados em revitalizar nossos laços econômico-comerciais com os polos econômicos consolidados. Os Estados Unidos, a Europa e o Japão são fontes de capitais e de inovação imprescindíveis para o nosso processo de desenvolvimento. Parcerias com esses países no campo da educação e da ciência, tecnologia e inovação podem dar relevante impulso ao aumento da competitividade de nossa economia. (p. 19/22).

As an overview concerning the application, or not, of science diplomacy, it is relevant to cite, firstly, the Brazilian Cooperation Agency of the Ministry of Foreign Affairs (ABC/MRE), considered a landmark. It was launched in 1987, in order to plan, coordinate, negotiate, approve, execute, follow and evaluate programs, blueprints and activities related to technical and humanitarian cooperation, operating in the bilateral, trilateral and multilateral segments. In addition, the two-track interaction is observed,

since ABC/MRE accepts and provide cooperation (AGÊNCIA BRASILEIRA DE COOPERAÇÃO, 2020).

The more than 7 thousand projects and activities of the ABC/MRE agenda are related to run-of-the-mill global issues, such as environment, energy, agriculture, education, health *etc.* As listed in the commencement of this work, these themes call attention of science diplomacy. However, it is important to note the Brazilian agency does not use the expression “science diplomacy” to describe the technique of cooperation it applies. In fact, it uses the terminology “partnership for development”. About this point, the explanation is:

O conceito de “parceria para o desenvolvimento”, adotado pelo Brasil, consolida a ideia de a relação de cooperação acarretar, ambos os lados, compartilhar esforços e benefícios. As iniciativas propostas são avaliadas à luz do impacto e do alcance sobre as comunidades receptoras. Esse procedimento implica aprimorar mecanismos de negociação, avaliação e gestão dos projetos, a fim de enquadrá-los às prioridades nacionais. (AGÊNCIA BRASILEIRA DE COOPERAÇÃO, 2020).

By the interpretation of the verbs above (to plan, coordinate, negotiate, approve, execute, follow and evaluate) and the expression used by the agency (partnership for development), it is not wrong to say the ABC/MRE works as coordinator, and this function is not coincident with the features of science diplomacy.

Next, another issue related to terminology appears. The Brazilian diplomat Pedro Ivo Ferraz da Silva (2018) distinguishes innovation diplomacy and science diplomacy. In this context, he studies the theoretical and practical basis for innovation diplomacy, explaining that:

A diplomacia da inovação deve, portanto, desenvolver um jogo de ferramentas próprio, fundamentalmente distinto da diplomacia científica, porém sem deixar de lado as manifestas vantagens das iniciativas de cooperação internacional. Entende-se, nesse sentido, que

a ação diplomática em prol do sistema nacional de inovação deve adquirir contornos peculiares, que combinam elementos colaborativos com ações típicas da diplomacia comercial, voltadas à inserção de atores nacionais em cadeias internacionais de valor, promoção de tecnologias nativas, atração de investimentos, estímulo ao empreendedorismo, desenvolvimento de inteligência competitiva e facilitação de acesso a ecossistemas estrangeiros (BOUND, 2016, p. 92). (SILVA, 2018, p. 323-324).

The author exemplifies the innovation diplomacy exercised by the Brazilian government with 3 programs: Ciências sem Fronteiras, headed by the Ministry of Education (MEC); the Programa de Trabalho e Diplomacia da Inovação, (PDI), set in the Itamaraty; and the program known as StartOut Brasil. He emphasizes the characteristics of each plan:

O Itamaraty tem, nos últimos anos, juntamente com outros atores governamentais e não governamentais brasileiros, dado passos concretos em direção ao desenvolvimento de uma política externa brasileira (PEB) da inovação. O programa Ciência sem Fronteiras (MINISTÉRIO DA EDUCAÇÃO, 2015), de 2011, capitaneado pelo Ministério da Educação e dedicado à internacionalização de alunos de graduação e pós-graduação, representou esforço de aprimoramento das capacidades científicas e tecnológicas do Brasil junto aos polos mais avançados do mundo, como Alemanha, Estados Unidos, Reino Unido e República da Coreia. A restrição a áreas do conhecimento eminentemente tecnológicas – engenharias, computação, fármacos, ciências do mar, etc. – teve o bem- -vindo propósito de alargar a base de capital humano necessária para o crescimento da atividade de P&D no Brasil.

O Programa de Trabalho de Diplomacia da Inovação (PDI), instituído em 2017 pelo Departamento de Temas Científicos e Tecnológicos (DCT), representou o primeiro passo sistêmico e dedicado ao estabelecimento de uma diplomacia da inovação no âmbito da

chancelaria brasileira. Mediante a disponibilização de recursos para promover a absorção de conhecimentos, apoiar programas internacionais de intercâmbio e facilitar parcerias entre instituições de P&D, nacionais e estrangeiras, o programa vem estimulando os postos no exterior a conceber e implementar grande variedade de iniciativas, sempre em consonância às respectivas realidades locais. Atualmente em sua segunda edição, e tendo expandido a abrangência de oito para mais de 14 postos, o PDI deu à luz ações como encontros de networking entre empreendedores brasileiros residentes em polos de inovação no exterior, eventos de divulgação do sistema nacional de inovação, missão de gestores de parques tecnológicos brasileiros a centros de excelência mundiais, etc.

Outra iniciativa recente é o “StartOut Brasil” (ANPROTEC et al., 2017), lançado em 2017, por meio de uma parceria entre o governo federal (Itamaraty/Apex-Brasil e MDIC), o SEBRAE e a ANPROTEC (Associação Nacional de Entidades Promotoras de Empreendimentos Inovadores). O programa insere-se na estratégia de internacionalização de empresas nascentes de base tecnológica, as chamadas startups, e realiza, periodicamente, missões de imersão em importantes ecossistemas de inovação no exterior. Os representantes das empresas selecionadas para integrar cada ciclo – os dois primeiros tiveram Buenos Aires e Paris como destino – recebem consultoria especializada sobre o mercado local e mantêm encontros com potenciais clientes e investidores, além de visitar empresas de êxito. O StartOut Brasil segue tendência mundial, promovida tanto por governos como pelo setor privado, de impulsionar ambientes nacionais de startups mediante exploração de oportunidades em mercados estrangeiros. (SILVA, 2018, p. 324-325).

Again, the terminology and the examples aforementioned can lead to the conclusion the science diplomacy has not been wholly set up. Despite the importance of the subjects and the interaction among parts, the way science has been used – in the foregoing cases – seems not correspond to the way science diplomacy does it.

The University of São Paulo (USP) and the Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), checking the need to establish better parameters about the institutes, have held the first event, known as The São Paulo School of Advanced Science in Science Diplomacy and Innovation Diplomacy – INNSCiD SP. It took place from 21 to 30 August 2019, at USP. More than 80 members of epistemic communities, academics and civil servants were present. It is an evidence the area of knowledge must be explored and improved, and better studied.

In compliance with the ideas, the Brazilian government, especially through the MRE, the epistemic communities and other parts, such as universities, have situations to deal with. Establishing the right definition for the terms used in the projects and programs could be considered an appropriate starting point, once each expression – partnership for development, science diplomacy and innovation diplomacy – has its own nature and application method. Furthermore, Dantas e Mascarello (2019), focusing on science diplomacy, address as another challenge the inexistence of a specific post for science diplomat within the MRE. This set of perceptions has forged some aspects of the Brazilian science diplomacy, the main objective of the present work.

CONCLUSION

In a world without borders, with highly connected global citizens and the emergence of common issues, science has been taken as an apropos tool, method or technique to tackle the situations. Diplomacy is one of the bridges – the main one – that connects the epistemic communities with foreign policy. In spite of the former use of science as source of hard power, it has been understood as element to attract and persuade (soft power).

The brief analysis of the situation in South Africa, Cambodia, Mauritius, and Iran has demonstrated the government and stakeholders have worked together in order to transform the idea that developing countries are only consumers of knowledge. When the South African country sent a specialist (epistemic community) to the EU to solve trade

issue, originated by an agricultural aspect, the nation has enhanced its position as producer of knowledge. Cambodia, Mauritius and Iran have showed efforts regarding science diplomacy, and the higher education is the focus of their plans. Because of historical facts, the development of the countries has been hampered for long. Nevertheless, being aware of the facts and of the economic and intellectual potential, and identifying the flaws are starting points of many agendas.

From the observation of some features of the Brazilian foreign policy, it is possible to check a well-formed basis of it, designed by the Federal Constitution. Wending to the specific field of science diplomacy, the overview has covered the ABC/MRE, Ciências sem Fronteiras, the Programa de Trabalho e Diplomacia da Inovação and the StartOut Brasil. The institutions and programs are not considered applications of science diplomacy indeed. Partnership for development is the category of the first one; the others are taken as innovation diplomacy.

The first challenge of the Brazilian science diplomacy is to delineate and improve the meaning of it; thence, the meaning of the other expressions also become clear. As already proposed, valorizing the scientific diplomat could be an effective measure to comprehend better the means of application of the institute. At last, organising these aspects and the entire structure can be tough, however it is indispensable so that the country can receive and produce knowledge in order to collaborate on solving global conundrums.

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