Nuclear Governance in Latin America*

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Introduction

This paper attempts to provide a review and interpretation of the regional relationships concerning nuclear technology in Latin Ameri-

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ca. We seek to describe Latin American countries' nuclear policies, identifying those countries' positions in the face of regional and global governance mechanisms. The term "nuclear policy" refers to the creation of national and multilateral rules and public policies involving nuclear technology. It includes policy choices with respect to the development of nuclear weapons, the adherence to the nuclear non-proliferation regime, the construction of nuclear power plants, the investment in nuclear technology (in order to control the uranium enrichment cycle and to improve the construction of reactors, for example), the mapping of, prospecting for, and use of uranium deposits, and the international trade of uranium.

In turn, the concept of international governance has become part of our vocabulary since the 1990s, due to the necessity to conceptually capture a reality, which is constituted by systems of rules and different ways of governing on several levels of human activity (ROSENAU, 1995; WEISS, 2000). Complex interactions on different institutional levels lead to the development of norms, public policies and mechanisms for conflict resolution, which involve international organizations, states, sub-states and non-governmental players. The globalization process and the increasing interdependence among societies constitute a powerful incentive so that questions in different spheres are dealt with by mechanisms which are not strictly domestic. Furthermore, regions become important factors in this context (HERZ, [in press]).

This process also takes place in the nuclear field, involving the production of nuclear technology, the administration of safety and the environment. Thus, in this paper we observe the trends in Latin America for the development of mechanisms of regional governance and the relation of these mechanisms with those generated in the global level. We will concentrate on multilateral mechanisms which aim to coordinate public policies, international rules and dispute resolution among countries.

In order to trace this scenario we initially discuss the historic relationship of the Latin American countries with the set of rules, norms, principles and organizations involved in the issue of non-proliferation, trying to understand the connection between the multilateral institutional framework (regional and extra-regional) and the bilateral arrangements aimed at curbing nuclear proliferation in the region. At this point, we argue that the creation of a bilateral institutional framework between Brazil and Argentina has contributed to strengthen the regional multilateral institutions established by Latin American countries, as well as to improve the influence of the Non-Proliferation Treaty (NPT) in the region.

Later, we outline the current state of nuclear cooperation among the countries of the region, describing the participation of these countries in regional and extra-regional organizations and initiatives. In addition, the paper assesses the peaceful use of nuclear technology in the region and especially the potential expansion of the use of nuclear energy by Latin American countries. Finally, we present some considerations on the trends for nuclear cooperation among countries in Latin America.

1. Latin America and the Non-Proliferation Regime

This section presents a historical retrospective of the relationship between Latin American countries and the nuclear non-proliferation regime,[1] shedding light on the process of acceptance and development of a set of rules, norms and principles, related to the nuclear issue. Next, we discuss the activities of multilateral organizations in order to monitor and promote the adherence to this body of norms and principles, as well as occasional transformations experienced by the non-proliferation regime over the course of its existence.

1.1 Rules, norms and principles: the Treaty of Tlatelolco and the Non-Proliferation Treaty

The effort to denuclearize Latin America dates back to the 1950s; in 1958, the government of Costa Rica presented a plan to denuclearize the region at the Organization of American States (OAS) . In 1962, it was the Brazilian government who acted, this time at the General Assembly of the United Nations (UN), through a proposal to create a nuclear-weapon-free zone (NWFZ) in Latin America (LA). In the course of the missile crisis in Cuba, representatives from Bolivia, Brazil, Chile and Ecuador reiterated the proposal for denuclearization, making direct reference to the aforementioned crisis in their speeches: the implicit objective was to prevent another Latin American country from facing a similar situation to Cuba's. In the following year, Brazil and Mexico presented a joint statement at the Committee on Disarmament in Geneva and, in the same year, Brazil presented a draft resolution at the General Assembly of the UN that provided for the creation of a NWFZ in Latin America. The draft resolution was supported by most UN member states (BEAMONT; RUBINSKY, 2012).

In the first years of these discussions on denuclearization proposals, Argentina and Cuba presented themselves as dissenting voices to the nuclear policy that Brazil and Mexico were beginning to design for the region. The disagreement was justified by the argument that, although the creation of a NWFZ had great chances of producing the desired effect of minimizing the threat of use and storage of nuclear weapons in LA, it could also produce the side effect of freezing the nuclear *status quo*, reinforcing the nuclear monopoly of the USA (BEAMONT; RUBINSKY, 2012). However, the Argentine reluctance can be understood if we consider the fact that their nuclear program was the most advanced in the region at that moment. Supporting the creation of a NWFZ would mean accepting regional and ex-

tra-regional interference in that program, possibly preventing the development of nuclear technology for peaceful purposes (WROBEL, 1993).

In 1964, a military government was established in Brazil and this is generally considered by observers as the main cause for the direction change in Brazil's nuclear diplomacy. From that point on, although Brazil and Argentina competed for faster and more effective dominance of nuclear technology, those countries' positions on nuclear issues would be aligned in international forums (SOARES DE LIMA, 2013; BEAMONT; RUBINSKY, 2012; WROBEL, 1993).

Therefore, an antagonism was created between two major positions regarding the direction of the nuclear issue in the region: on one side there were countries led by Mexico (which continued defending the creation of a NWFZ) and on the other there were Argentina and Brazil, which resisted the idea. In favor of the idea of denuclearization, a preparatory commission to create a NWFZ was inaugurated in Mexico, which took place in Tlatelolco (a district of Mexico City) from 1965 to 1967, involving twenty-one states of Latin America and the Caribbean (except Cuba). During this period, first drafts were prepared of what is today the Treaty of Tlatelolco (or Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean) and its Additional Protocols, which were ready for signature in February 1967.

The treaty drafted by the aforementioned commission has some peculiar characteristics which can help to explain its success in containing the spread of nuclear weapons in the region. In the same vein as the Non-Proliferation Treaty (NPT), the Treaty of Tlatelolco prohibits the production, testing and possession of nuclear weapons. However, unlike the NPT, the Treaty of Tlatelolco prohibits its members from receiving or deploying third-party weapons in Latin American territory, at the same time that it authorizes, through its article 18, nu-

clear detonations for peaceful purposes (REDICK, 1981). Although the authorization of nuclear detonations can be considered a flaw by some, such a concession was essential to keep Brazil and Argentina among the countries that agreed generally with the terms of the treaty (WROBEL, 1993).[2]

Another important artifice, which ensured the dialogue between the two groups of countries over the nuclear issue, can be found in the second paragraph of article 29. It establishes that despite the requirement stated in the first paragraph of the article where ratification by all members is necessary for the treaty to come into effect, member states were allowed to unilaterally pledge their obedience to the document. Thus, waiving requirements of the first paragraph of article 29. In other words, the states could declare that they already considered the treaty to be in force for defining the direction of their domestic nuclear policy. This clause was successful in promoting the dialogue among member states within the organization created by the treaty (OPANAL) even before the treaty came fully into force (BEAMONT; RUBINSKY, 2012).

The organization created by the Treaty of Tlatelolco, OPANAL, became responsible for ensuring the implementation of the treaty and for applying safeguards, a task which would be carried out together with the IAEA (International Atomic Energy Agency). For that purpose, the IAEA signed bilateral and multilateral treaties with the member states and OPANAL.

Another characteristic of this treaty is the fact that it has additional protocols directed at states outside the region. The first of these protocols targets states that hold control over territories in Latin America. In practice, such provisions applied to France, the Netherlands, the United Kingdom and USA, which adhered to Additional Protocol I, pledging not to deploy nuclear weapons in those territories. Additional Protocol II is directed at the officially recognized Nuclear

Weapon States at the time of the drafting of the Treaty of Tlatelolco (China, USA, France, USSR and the United Kingdom) which, upon signing the protocol, pledged not to use nuclear weapons on signatories to the treaty, as well as not to deploy weapons in the region nor test or produce them in Latin America. All five nuclear states ratified the second protocol (BEAMONT; RUBINSKY, 2012).[3]

Among the factors that might help to explain the creation of a NWFZ in Latin America, an extremely favorable condition was the very historical moment when the denuclearization initiatives were undertaken: the legal instrument that created the NWFZ was thought out before nuclear technology was widespread in the region. Consequently, there were no consolidated interest groups in most of those countries which could pressure the states not to commit themselves to non-proliferation. On the other hand, the missile crisis of 1962 generated the perception that Latin America could be used as a stage for a nuclear exchange between the superpowers during the Cold War (REDICK, 1981).[4] In this regard, the Treaty of Tlatelolco seems to have the broader purpose of limiting the interference of the USA (and of any other nuclear power) in Latin American affairs.

However, the Treaty of Tlatelolco would only come into effect many years after its primary draft. This was due to its full validity, as previously noted, dependent on the ratification of the treaty by all parties. Argentina signed the treaty in 1967, but did not seek to ratify it after signing. Chile and Brazil did ratify the treaty, but did not use the device provided for in article 29, of the unilateral declaration of its validity. Brazil's positioning towards the Treaty of Tlatelolco followed Argentina's and vice-versa, considering that these countries found themselves in a sort of competition for the development and acquisition of nuclear technology (BEAMONT; RUBINSKY, 2012).

Such competition undertaken by the military governments of Argentina and Brazil in the 1970s and 1980s caused the impression that the-

re was an arms race between those countries (GALL, 1976; TOLLEFSON, 1990; FONROUGE, 1995). Contributing to international suspicion was the fact that Argentina and Brazil defended the right to carry out detonations for peaceful purposes, which, even though permitted by article 18 of the Treaty of Tlatelolco, sharpened the international perception that there could be nuclear military ambitions in those countries (CARASALES, 1999; ROSENBAUM; COOPER, 1970).

Nonetheless, the resistance of these two countries to the Treaty of Tlatelolco was less severe than the opposition declared by both to the NPT. In 1968, an Argentinean representative in the UN stated about the NPT: "all it does is disarm the disarmed" (BEAMONT; RUBINSKY, 2012, p. 8). Brazil, in turn, stated that the NPT created a new kind of dependency towards the more developed countries (BEAMONT; RUBINSKY, 2012, p. 8). In this regard, Brazil and Argentina did not fear being unprotected from the nuclear arsenals of the nuclear-armed countries recognized by the NPT. On the contrary, for these countries, the problem in signing the NPT was related to the concern that the document would hamper the complete development of an independent nuclear program, which those countries considered important to transform the non-nuclear countries into industrialized and modern societies (SOTOMAYOR, 2012). Moreover, Brazil and Argentina objected to the discriminatory nature of the NPT which created different obligations for different parties: for the nuclear-armed states there was only the commitment to negotiate their disarmament in the future, whereas the parties which did not possess nuclear weapons should immediately commit to not acquire such weapons. On the other hand, Brazilian authorities denounced the treaty for representing an attempt to freeze the distribution of world power, preventing the rise of new powers (SOARES DE LIMA, 2013).

In short, with respect to the multilateral institutions (more specifically the Treaty of Tlatelolco and the NPT), there were two main po-

sitions in Latin America during the 1960s, 1970s and 1980s. Brazil and Argentina formed the group that resisted full adherence to those institutions. Mexico, in turn, led the group that completely agreed to the demands of both treaties. In 1968, given its commitment to the Treaty of Tlatelolco, Mexico became the first Latin American state to sign a full safeguards agreement with the IAEA (SOTOMAYOR, 2012).[5]

In the 1990s, both Brazilian and Argentinean stances would change towards the Treaty of Tlatelolco and the NPT and, due to this change, Chile's nuclear policy would also be transformed. Argentina, Brazil and Chile agreed on a set of amendments to the Treaty of Tlatelolco regarding its verification system, which were unanimously approved by the other member states in 1992. Argentina ratified the treaty in January 1994 and Cuba in 2002, which resulted in its full validity for all parties (see Chart 1, attached, for a list of ratification dates of the Treaty of Tlatelolco).

In view of this change in nuclear stance by Brazil and Argentina in the international forums, there are scholars who characterize this development as the abandonment of a military nuclear program by those countries (a phenomenon known as *rollback*). However, Argentinean diplomat and non-proliferation scholar Carasales (1999) asserts that there was never any intention to produce nuclear weapons in Argentina. According to the author, there was no threat to the security of that country to justify the acquisition of nuclear weapons. In Brazil's case, the author believes that there were internal voices favorable to the acquisition of nuclear weapons, because of the supposed prestige such acquisition would bring. In turn, Souza-Barros (2003) believes that, in the Brazilian case, different projects had different objectives. According to this author, the Solimões Project, carried out by the Brazilian Army, was aimed at producing plutonium, which could be used as a raw material for a war weapon. However, there was no evidence of the intention to produce nuclear weapons in the other

programs undertaken by Brazil (SOUZA-BARROS, 2003, p. 3-4). On the other hand, Soares de Lima (2013) defends that Brazil's greatest objective was to keep the nuclear option open, acquiring the skills to develop a war artifact in case the international geopolitical circumstances changed.

Beamont and Rubinsky (2012) defend that characterizing the change in nuclear policy in Argentina and Brazil as examples of *rollback* would be a mistake. According to these scholars, the change in stance of those countries towards the multilateral non-proliferation treaties would be closely connected to the rapprochement between those countries and the establishment of a bilateral institutional framework to deal with nuclear issues, which promoted trust between the parties.

Supporting that argument, Carasales (1999) historically reconstituted Argentina's nuclear policy in three stages, which largely correspond to developments in the bilateral relation with Brazil. In the first phase of the Argentine nuclear program (from 1950 to 1985), the country's biggest objective was to domestically control the nuclear fuel cycle and this occurred in 1983 (CARASALES, 1999). This phase is also characterized by the resistance to the multilateral non-proliferation treaties, whose motivations have been described above.

The second period (of transition) lasted from 1985 to 1989 and was characterized by the rapprochement with Brazil, directly impacting the nuclear policy of both countries. Such rapprochement was made easier by the fact that in 1983 a civilian government was established in Argentina (Raul Alfonsin) and in 1985 the same happened in Brazil. In Argentina, this development added to the internal perception that spending on nuclear technology was improper (since nuclear energy was not essential) and to the pacifism of the new leadership (CARASALES, 1999).

This rapprochement culminated with the signing of what became known as the "Guadalajara Agreement" in 1991. The agreement included the guarantee of the peaceful nature of the programs, the waiver of the right to conduct nuclear explosions, and the establishment of the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC). Right after the signing of this document, negotiations with the IAEA followed for implementation of agreements on safeguards, in a division of tasks and responsibilities between the IAEA and the ABACC. These negotiations led to the Quadripartite Agreement (Brazil, Argentina, ABACC, IAEA) at the end of 1991.[6]

With respect to the factors that contributed to enabling the creation of this bilateral institutional framework, Carasales points out the existence of convergence between those countries in what came to more general understandings of non-proliferation:

> The establishment of a policy of full cooperation in nuclear affairs was facilitated by the fact that Brazil and Argentina had similar or even identical positions in international forums, despite the competitive spirit that characterized the two countries' nuclear programs. Mutual support in international bodies was the rule and not the exception. With increasing frequency, a single delegate spoke to a conference in the name of the two (CARASALES, 1999, p. 60).

Regarding the motivation of authorities in both countries to constitute a bilateral institutional apparatus before joining the multilateral institutional framework, Beamont and Rubinsky (2012, p. 11) argue:

> The safeguards these agreements involved were virtually identical to those that were required for membership into the NPT. The critical difference was political. Instead of being

> "imposed" by the West, the process and agreement was more indigenous. This mattered to the respective Argentine and Brazilian governments and reduced the appearance of a U-turn in policy.

Argentina and Brazil have agreed to submit reports to ABACC with inventories of all their nuclear materials and a description of their nuclear facilities. ABACC, in turn, became responsible, together with the IAEA, for inspecting those facilities, to ensure the accuracy of the reports. Brazilian inspectors verify the Argentine facilities and the Argentines inspect the Brazilian facilities (SOTOMAYOR, 2012).

After the establishment of the ABACC, Brazil and Argentina ratified the NPT. There are authors who believe that the Treaty of Tlatelolco contributed to the transformation in those countries' stances regarding the NPT. On the other hand, another line of explanation argues that the transformation originated domestically in both countries, resulting in conditions which were conducive to the creation of the bilateral institutional framework (BEAMONT; RUBINSKY, 2012; SOTOMAYOR, 2012). To Sotomayor, geopolitical factors have little influence on the formation of preferences and on the development of nuclear policy in Latin America; rather, such preferences are determined by the nature of the economic regimes, by the character of the relationship between civilians and the military, and by domestic policy.

Accordingly, we corroborate the interpretation that changes on a domestic level led to the transformation of nuclear preferences of Brazil and Argentina, favoring bilateral cooperation between those countries within the ABACC. In turn, bilateral cooperation between Brazil and Argentina has strengthened regional multilateral institutions related to nuclear non-proliferation, in that it led to the ratification of the Treaty of Tlatelolco by Argentina. Shortly thereafter, Brazil used the dispositive present in article 28 (which establishes the treaty's im-

mediate effect for the party that triggers this legal dispositive). As a result, the Treaty of Tlatelolco came into effect for Brazil and Argentina in 1994.

Besides contributing to the adherence to regional mechanisms, the confidence provided by such bilateral agreements was also central to the change in attitude towards the global regime of non-proliferation, since the requirements incurred bilaterally were more comprehensive than the actual NPT requirements, making resistance toward the latter meaningless. This construction of rules and bilateral institutions would definitively influence the inclusion of the region as a whole in the nuclear non-proliferation regime.[7]

1.2 The relationship of Latin American countries with governance mechanisms directed towards non-proliferation, security and safety

Nowadays, many international organizations operate in Latin America to promote and monitor compliance with nuclear non-proliferation international rules. OPANAL, created under the Treaty of Tlatelolco, remains active, working especially with education for nuclear disarmament and non-proliferation and promoting courses and lectures on these topics. However, during a speech before the Committee on Hemispheric Security of the OAS, the current secretary of OPANAL admitted the need to revitalize the activities of that organization. An important challenge would be to invest more in governance mechanisms concerning manmade threats as well as threats of an accidental nature (what is usually referred to as *security* and *safety*[8] concerns), including these topics in the scope of activities of the organization.[9]

The nuclear issue also comes up in discussions by regional organizations such as UNASUR (Union of South American Nations) and CELAC (Community of Latin American and Caribbean States). The constitutive treaty of UNASUR contains the confirmation of the commitment to nuclear non-proliferation.[10] Furthermore, the coordination among members against the proliferation of weapons of mass destruction is established as an objective in article 3 of the treaty. Similarly, the statute of the South American Defense Council, established under UNASUR, the assurance of South America as a nuclear-weapon-free zone is listed as a common principle[11]. In the Santiago Declaration, adopted after the first summit of CELAC, the 33 countries of Latin America restated their disavowal of nuclear weapons and declared their willingness to present a joint position in the next UN meeting on the issue of nuclear disarmament, held on September 2013. They also declared themselves favorable to the creation of a nuclear-weapon-free zone in the Middle East.[12]

Another relevant international organization in assuring the commitment to non-proliferation in Latin America is ABACC, which, as stated previously, operates in conjunction with the IAEA in monitoring nuclear facilities and programs in Brazil and Argentina, under the aegis of the Quadripartite Agreement signed in 1991 by Brazil, Argentina, ABACC and IAEA. During a speech, Antonio Abel Oliveira, secretary of ABACC,[13] stated that the agreement has created a much more comprehensive safeguards regime than that observed in other circumstances, by putting into practice the concept of "neighbors watching neighbors". In that respect, every year ABACC, along with the IAEA, accounts for and controls approximately 70 nuclear facilities in Argentina and Brazil, conducting around 110 inspections in those facilities. Such inspections operate under the following principles, established by the Quadripartite Agreement: the joint execution of inspections, the coordination of activities in order to avoid duplication of human and material resources and the independence of the conclusions reached by each party.

Nuclear issues in Latin America are also discussed under the aegis of the OAS, where special meetings on the strengthening of the Treaty of Tlatelolco started to occur more recently in the Committee on Hemispheric Security in compliance with resolutions of the General Assembly of that organization such as the AG/RES. 2533, of 2010 – on the topic of disarmament and non-proliferation in the hemisphere – and resolution AG/RES. 2442, of 2009, – directed at the consolidation of the regime established by the Treaty of Tlatelolco.

OAS has also been involved in the implementation of resolution 1540 (of 2004) of the UN Security Council, which tackles the issue of nuclear terrorism. For instance, workshops and seminars[14] have been promoted aiming to qualify states to complete reports, which must be handed in to the UN Group of Experts created by resolution 1540.[15] Furthermore, OAS has tried to contribute to the technical capabilities of the countries in the region. The "Implementation of United Nations Security Council Resolution 1540 Program" seeks to assist states of the region with respect to the monitoring of borders, the adequacy of the domestic legal apparatus for that resolution; and the technical capability to deal with nuclear incidents. At the moment, a pilot project within that program is in progress, involving Mexico and Colombia as beneficiaries of the technical cooperation with the OAS. This pilot project also involves the United Nations Office for Disarmament Affairs (UNODA) and the UN Group of Experts founded by resolution 1540 and later empowered by resolution S/1810 of 2008, which calls on the committee to assist countries in implementing resolution 1540.[16]

In addition, the international legal apparatus aimed at addressing the problem of nuclear terrorism involves the Convention on Physical Protection of Nuclear Material, which came into effect in 1987. Latin American countries that have the most significant nuclear activity (Brazil, Argentina and Mexico) ratified the convention. However, in 2005, an amendment to this convention was proposed, under which

the states would be legally obligated to protect nuclear facilities and radiological materials in transit and domestic storage. This amendment is not yet in force, since it requires ratification by two-thirds of the members of the convention. In relation to the support of the amendment in Latin America to date, Argentina and Mexico have signed the document, and Brazil has only ratified the convention but not the amendment.[17]

Another initiative by the IAEA that is supported by Latin American countries is the "IAEA Incident and Trafficking Database" (ITDB), which compiles incidents related to the possession and the attempt to illicitly transfer radioactive and nuclear material. This initiative aims to identify possible patterns in illegal activities, contributing to their prevention.[18]

Besides being involved with the aforementioned regional and extra-regional organizations which promote and monitor non-proliferation, Latin American countries take part in other international initiatives related to the nuclear issue. As an example, through the EXBS (Export Control and Related Border Security) program, the USA seeks to strengthen domestic capabilities to regulate the transfer of weapons of mass destruction and dual-use technology items, as well as to address the issue of illegal transfer of such items. The technical cooperation provided by the USA within that program includes conducting border control training workshops, providing equipment to detect those items, and exchanging information about the required institutional and legal apparatus to deal with the issue. The following Latin American countries participate in this program: Mexico, Panama, Brazil, Argentina and Chile.[19]

Another program initiated by the USA is called "Proliferation Security Initiative" (PSI), which is aimed at controlling the transit of weapons of mass destruction, including the search and interdiction of suspicious ships (ABDUL HAK NETO, 2011). In the beginning of

this initiative, the intention of American authorities was to restrict to a minimum the number of players involved, in order to avoid decision making problems when the necessity to act presented itself. Accordingly, states involved when the initiative was established were Germany, Australia, Spain, France, Italy, Japan, Poland, the Netherlands and the United Kingdom. However, new players were gradually incorporated into the initiative which, according to American authorities, now comprises states that: 1) accept the initiative's governing principles, 2) deem their vessels, territorial waters, air space etc., can be used by others (state and non-state actors) for proliferation purposes; and 3) are capable of conducting the searches and interdictions. However, some scholars argue that this expansion was done selectively, avoiding states that might become the target of the initiative's activities (such as Iran, North Korea and Syria) and embracing countries that could expand the geographic scope of the initiative (ABDUL HAK NETO, 2011). The participants in Latin America are: Argentina, Chile, Colombia, Dominican Republic, El Salvador, Panama and Paraguay.[20] The initiative has also been criticized on the basis that only founding members perform the interdictions, with others providing only their political approval and support. Besides that, countries like Brazil question the initiative's compatibility with international law (ABDUL HAK NETO, 2011).

Finally, it is important to highlight the "Global Initiative to Combat Nuclear Terrorism" (GICNT) which brings together eighty-five countries in an attempt to strengthen the multilateral capabilities of prevention, detection and response to nuclear terrorism. The following Latin American countries are involved in this initiative: Argentina, Chile, Mexico and Panama.[21]

We conclude, therefore, that Latin American countries have significant participation in the multilateral organizational framework designed to guarantee the operation of the nuclear non-proliferation regime. Latin American countries also have unequal but considerable

participation in the initiatives promoted by the American government against new perceived threats derived from the association between weapons of mass destruction and terrorism in the 2000s.

2. Cooperation among Latin American Countries for the Peaceful Uses of Nuclear Technology

The discussion of nuclear issues in Latin America involves not only verifying the commitment of those countries to the nuclear non-proliferation regime, but also analyzing the current state of the peaceful uses of nuclear technology in the region. Regarding nuclear energy, it is necessary to point out that Latin American countries' energy sources consist predominantly of hydropower and fossil fuels. The six (6) operating reactors in Latin America make up a very small portion of the number of reactors in the world (over 430). Another important characteristic of nuclear power generation in Latin America is the fact that it is concentrated in three countries: Argentina, Brazil and Mexico (World Nuclear Association).[22]

It is necessary to question, however, to what extent this situation could change in the coming years. In theory, there is potential for the increased participation of nuclear energy to meet growing regional demands. Argentina and Brazil have large uranium reserves, one of the most common raw materials for the production of the fuel used in nuclear reactors. However, there are economic difficulties involved in the mining and enrichment of that uranium, so that Argentina and Brazil import enriched uranium for their nuclear reactors, despite having mastered the technology of enrichment. There are also uranium reserves in countries such as Bolivia, Chile, Colombia, Mexico, Paraguay and Peru,[23] but the most significant reserves of the region are in Brazil, which accounts for 5% of the world's total (Worls Nuclear Association; IAEA).[24]

At least five countries in Latin America are considering the acquisition of technology to generate nuclear energy: Chile, Venezuela, Uruguay, Peru and Cuba. Between 2007 and 2008, a commission was created in Chile (known as the Zanelli Commission) to determine the technical feasibility of nuclear energy production in the country. Although the country is at risk of earthquakes, experts affirmed that this would not necessarily hamper the decision to produce nuclear energy, due to the availability of anti-seismic technology which may reduce the safety risk of the facilities (ARGUELLO, 2009).

Due to frequent power outages, Venezuela has tried to acquire from Argentina, Brazil, Iran, France and Russia, technology to build nuclear power plants. In 2008, an agreement which included nuclear energy and research reactors was signed with Russia. However, related literature is silent with respect to the implementation of this agreement. France, in turn, also tried unsuccessfully to sign a deal with Venezuela. (ARGUELLO, 2009).

Considering Uruguay's dependency on energy from hydroelectric plants and oil, gas and electricity imports, there have been internal debates over changing the legislation which prohibits the use of nuclear energy in that country. In the case of Cuba, there was a program during the Cold War to generate nuclear energy in the country which was the result of a partnership established with the USSR in the 1970s. However, the project stalled due to lack of resources in the beginning of the 1990s. Today the country depends on imported energy resources, but maintains the stated objective of reactivating the old nuclear program, which the USA opposes (ARGUELLO, 2009). More recently, Peruvian authorities also expressed the objective of using nuclear energy in the "Propuesta de Política Energética de Estado, Peru 2010-2040".[25]

With respect to the countries that already use and produce nuclear energy, there is the possibility of growth, since Argentina and Brazil

plan to double their nuclear energy production capacity and Mexico intends to build eight more reactors by 2025. However, despite the stated objectives of increased use of nuclear energy in the region, Squassoni (2009) believes that the prospect for the development and use of nuclear energy is ambiguous in Latin America. The scholar doubts that expanding nuclear energy can reduce the region's dependency on fossil fuels and hydropower. In Mexico, for example, energy demand is expected to grow 6% annually (similarly to India and China), making it difficult for nuclear energy to meet this increased demand. In view of this, one of the greatest obstacles for the expansion in nuclear energy use is the lack of agility in building and operating nuclear plants, given that the first Mexican reactor took twenty years to start functioning (SQUASSONI, 2009).

Besides reactors for producing nuclear energy, Latin America has around sixteen research reactors distributed across Argentina, Mexico, Brazil, Peru, Jamaica and Chile, most of them concentrated in the first three (IAEA).[26] The fact that there are more countries that have research reactors than reactors to produce nuclear energy might be an indication that, in the future, the increased use of nuclear technology in LA will be more focused on nuclear medicine and agricultural research than on nuclear energy.

In relation to bilateral cooperation among Latin American countries, Argentina and Brazil are the main distributors of nuclear technology in the region. Both countries have framework agreements which provide for cooperation to develop nuclear energy for peaceful purposes with several countries of the region. In the case of the framework agreement between Peru and Argentina, cooperation between these countries was achieved through the construction of a research reactor in Peru over the 1970s and 1980s[27] (ALCAÑIZ, 2010).

In spite of various documents which provide for bilateral cooperation among the several Latin American countries, the volume of coopera-

tion between Brazil and Argentina on nuclear issues is the most significant of the region. Among agreements, covenants, joint declarations and treaties, a simple search through the official websites finds over forty bilateral documents between Brazil and Argentina on nuclear energy issues. In 2008, the two countries decided to form a bi-national commission (which became known as COBEN), with the mission of extending the cooperation in the nuclear field. More recently, the attention has been turned to the creation of a bi-national company which would be involved in such activities as uranium enrichment, production of radiopharmaceuticals and application of nuclear technology in agriculture. Besides that, an agreement was signed in 2011 by Brazil's National Nuclear Energy Commission (CNEN) and Argentina's National Atomic Energy Commission (CNEA) to produce two reactors: the Brazilian Multipurpose (RMB) and the RA-10 in Argentina. The construction of a multipurpose reactor might be a way of making Brazil self-sufficient in the production of radioisotopes and radiopharmaceuticals, as well as providing research in the field of nuclear technology and testing of nuclear fuels.[28]

With respect to multilateral cooperation in the region, the IAEA has a program aimed at technical cooperation with Latin America which is called "Regional Cooperation Agreement for the Promotion of Nuclear Science and Technology in Latin America and the Caribbean" (ARCAL, in Spanish). The purpose of this program is to provide a forum which brings together the region's professionals who are involved in nuclear activities and research for workshops and training missions. According to the IAEA, over 1000 professionals and technicians have received training in projects developed within this program for industrial, radiochemistry, radiology and soil and water management areas.[29]

According to Alcañiz (2010), forums such as ARCAL allow for cooperation despite lack of financial resources. For the author, bureau-

cracies involved in Latin America's nuclear sector seek multilateral cooperation at a time when cuts in resources for the sector make bilateral cooperation in common projects difficult. Of note, ARCAL brings together experts from regulatory agencies from countries in the region. The same happens with the Ibero-American Forum of Radiological and Nuclear Regulatory Agencies (FORO), established in 1997 with the objective of bringing together the radiological and nuclear regulators of Argentina, Brazil, Chile, Cuba, Spain, Mexico, Peru and Uruguay.[30]

Therefore, it is possible to argue that bilateral and multilateral mechanisms represent institutional frameworks for the interaction of nuclear experts in the region, allowing for homogenization of work processes and transfer of technology. On the other hand, the existence of nuclear projects in some countries, the presence of mineral wealth in the region, and the needs in agriculture and medicine of societies undergoing the process of modernization indicate a trend of greater international interaction in that area.

3. Final Considerations: The Trends in Nuclear Cooperation in Latin America

Considering the current situation of relations among the Latin American countries and the mechanisms of nuclear governance, one can observe three main trends: the existence of cooperative projects for technological development; the collective and consistent compliance to the non-proliferation mechanisms created before the end of the Cold War, as well as mechanisms that ensure safety against accidents; and difficulties in coordinating positions towards new mechanisms aimed at reinforcing governance in this area, combining non-proliferation and the fight against terrorism.

Regarding the potential for technological development in the region, we point out the existence of numerous framework agreements among Latin American countries, providing for the joint development of nuclear technology for peaceful purposes. Brazil and Argentina are the countries with the largest number of nuclear cooperation agreements with other Latin American countries. Although the large number of framework agreements is not yet reflected in many concrete projects in progress, the projects developed more recently between Brazil and Argentina demonstrate the feasibility of these initiatives.

Regarding non-proliferation there are scholars who argue that the diffusion of nuclear technology may contribute to increase the prospect of proliferation of nuclear weapons in the region. Especially in relation to nuclear energy, even though the uranium used as fuel by the nuclear plants is low-enriched and therefore not appropriate for the construction of nuclear weapons, some scholars suggest that, from the waste generated by the production of energy, plutonium can be extracted, which also serves as raw material for nuclear weapons (EBINGER; MASSY, 2009). Thus, according to authors such as Sotomayor (2012), the USA would be particularly worried about the prospect of militarization of the nuclear policies in Latin America, in view of factors such as military assistance and trade flow of defense materiel between Brazil, Iran, Russia and France.

In turn, the research reactors in Mexico and Chile caused controversy because of the use of uranium in concentration levels suitable for building nuclear weapons. However, the governments of both countries sought support from IAEA to convert their reactors and start using uranium in lower concentrations, signing agreements with the agency for that purpose. Inspectors of the IAEA had broad access to facilities in those countries and gave advice on expanding the use of nuclear energy. In the case of Chile, full cooperation with the IAEA, including the signature of the Additional Protocol, seems to be aimed

at providing comprehensive guarantees to potential suppliers of nuclear technology, facilitating access to this market if the decision to produce nuclear energy materializes in the future (SOTOMAYOR, 2012).

As for Argentina and Brazil, despite the compliance with mechanisms of global governance and the creation of a bilateral institutional framework to curb the proliferation of nuclear weapons, the two countries have not signed the Additional Protocol to the NPT, which would allow the IAEA greater access to their facilities (STALCUP, 2012). In addition, Brazil is criticized for the fact that part of its nuclear program is performed by the Navy. In other words, the existence of a military component in Brazilian nuclear activities contributes to international suspicions. Finally, the attempt (conducted in conjunction with Turkey in 2010) to mediate a nuclear agreement with Iran was also poorly received in the United States and Europe (SOTOMAYOR, 2012; HERZ; MESSARI, 2012).[31]

In contrast, there are international analysts who believe there is almost zero probability that Latin American states will acquire nuclear weapons. However, among those analysts, some consider that the potential for proliferation in Latin America is related to the potential for terrorist activity in the region, which could be encouraged by conditions of domestic political instability:

> Being non-nuclear does not mean Latin America is non-problematic. Based on social factors like political stability, the pervasiveness of corruption, and whether or not the country is home to groups interested in illicitly acquiring nuclear materials, NTI [Nuclear Threat Initiative's] rates Chile, Peru, and Cuba very highly; but Haiti, Venezuela, Belize, and Bolivia are rated the lowest in Latin America (ALVAREZ, 2012).

As discussed in this article, all Latin American countries are signatories to a set of international treaties through which they commit to not

acquire nuclear weapons, such as the Non-Proliferation Treaty and the Treaty of Tlatelolco. Besides that, many of these countries participate in regional and extra-regional organizations and initiatives which reinforce their commitment to the non-proliferation of nuclear weapons. The regional organizations give support to governance mechanisms developed within the UN and the IAEA. In this regard, it is necessary to point out the originality of the process of building trust in the ABACC. In addition, the regional trend of reaffirming sovereign rights and of supporting multilateral mechanisms backed by international law applies to the treatment of nuclear governance mechanisms.

It is worth nothing that, in support of the non-proliferation regime, the several countries of the region which voted in international forums on resolutions related to nuclear issues during the 1990s and 2000s widely supported the resolutions that condemned the testing of nuclear weapons by North Korea. The analysis of the voting pattern of the Latin American countries in the UN Security Council suggests there is convergence among the nuclear policies of these countries regarding non-proliferation. On the only occasion that a Latin American country (Brazil) voted against a resolution on the nuclear issue in the last thirty years, the topic under discussion was the imposition of sanctions against Iran. Considering that, despite international suspicions, Iran claims not to have the intention of producing nuclear weapons and that it has the right to make peaceful use of nuclear technology, it is possible to infer that the position assumed by Brazil is consistent with the claim, shared by the Latin American countries, that the peaceful use of nuclear technology is an internationally established right (see Chart 2 appendix) and, therefore, should not be threatened by unilateral or multilateral initiatives.

Regarding the voting records in the UN General Assembly, since the late 1990s there have been no votes against resolutions on nuclear issues discussed in that forum by Latin American countries, clarifying

their position to support new and old principles which are part of the non-proliferation regime. However, in some situations, some of those countries abstained. During the 1990s, Latin American countries such as Mexico, Argentina and Brazil took turns in using the prerogative of abstention on resolutions concerning nuclear weapons in the Middle East and, more specifically, on the possession of nuclear weapons by Israel. There was not, however, an automatic alignment of votes among the Latin American countries, given that countries that were together in some abstention circumstances, but were not so in others. In the 2000s, there were several occasions when Argentina alone abstained from voting. On the other hand, Brazil has been joined by Mexico on occasions when it abstained from voting on some nuclear issues.[32]

An issue that has some potential for divergence among countries of the region is the multi-lateralization of nuclear fuel production.[33] It is extremely unlikely that Brazil will agree to this proposal, since the country has historical projects of technological development in uranium enrichment. Furthermore, as pointed by Muller (2005), the need for uranium enrichment at higher levels to be used for the nuclear submarine under construction in Brazil contributes to the country's resistance to that proposal. On the other hand, Argentina takes part in an international forum directed at making proposals in this regard, namely the "International Framework for Nuclear Energy Cooperation" (previously called Global Nuclear Energy Partnership).[34]

In this sense, the positions of countries in the region toward new mechanisms, which associate non-proliferation and combating terrorism, tend to differ. We point out the Brazilian absence from the "Global Initiative to Combat Nuclear Terrorism" (GICNT) and from the "Proliferation Security Initiative" (PSI). Thus, although there is considerable convergence among Latin American countries in relation to acceptance of rules, norms and principles which comprise the me-

chanisms of nuclear governance, there is no automatic alignment among those countries with respect to the most recent proposals of modification and strengthening of this normative, regulatory framework.

Notes

1. International regime is defined as "an implicit or explicit set of principles, norms, rules and decision-making procedures around which players' expectations converge in a given area of international relations. Principles are beliefs of fact, causation and rectitude. Norms are standards of behavior defined in terms of rights and obligations. Rules are specific prescriptions or proscriptions for action. Decision-making procedures are prevailing practices for making and implementing collective choice" (KRASNER, 1983, p. 2).

2. In this sense, the interpretative note presented by Argentina at the moment of signing the treaty is quite revealing: "El Gobierno de la República Argentina, al firmar el Tratado para la Proscripción de las Armas Nucleares en la América Latina, en conformidad al Artículo veintiocho inciso primero, desea expresar su satisfacción por la inclusión en el instrumento de cláusulas que preservan el desarrollo pacífico de la energía nuclear y, entre ellas, del artículo dieciocho que reconoce el derecho de las partes contratantes a realizar, por sus propios medioso en asociación con terceros, explosiones de dispositivos nucleares con fines pacíficos, inclusive explosiones que presupongan artefactos similares a los empleados en el armamento nuclear. Entiende el Gobierno de la República Argentina que dichas disposiciones aseguran el empleo de la energía nuclear como auxiliar indispensable en el proceso de desarrollo de la América Latina y representan, en consecuencia, la condición previa y fundamental para sentar las bases de un equilibrio aceptable de responsabilidades y obligaciones mutuas para las potencias nucleares y las nonucleares en materia de no proliferación" (Government of Argentina, 1967. Available at: <http://www.opanal.org/OPA_SINF.html#.UfprNW26W9v>. Accesses on: Aug. 1st, 2013).

3. However, neither the treaty nor the additional protocols are explicit regarding the transportation of nuclear weapons. Because of this, one wonders to what extent nuclear-armed ships could legally move through the member states' territorial waters. The prevailing interpretation is that this transportation would require an authorization by the country in whose sea the nuclear-armed ship

would move through. However, the expectation that nuclear-armed states would declare where their nuclear weapons are, even temporarily, is very optimistic (GOLDBLAT, 1997).

4. For a thorough overview of the relation between the missile crisis and the creation of the NWFZ in Latin America, see Wrobel (1993).

5. An interesting fact about the Mexican position is the preference for multilateral institutions both in relation to treaties regarding the issue of non-proliferation and to agreements for the production of nuclear energy. Initially, Mexico did not sign agreements with the USA or any other country to develop their reactors. The Mexican position was motivated by the desire to become energetically independent; they resorted to nuclear energy precisely not to depend on external actors to have access to energy resources (SOTOMAYOR, 2012).

6. For more information on the formation and operation of the ABACC, see Nascimento Plum (2009).

7. Several authors argue that the rapprochement of Brazil and Argentina regarding nuclear issues was an essential step for regional integration in Latin America, more specifically for the consolidation of MERCOSUL. For more information on this topic, see: Fonrouge (1995), Vargas (1997) and Oliveira (1998).

8. The International Atomic Energy Agency (IAEA) defines *safety* as "the protection of people and the environment against radiation risks, and the safety of facilities and activities that give rise to radiation risks". *Nuclear security* comprises "the prevention and detection of, and response to, theft, sabotage, unauthorized access, illegal transfer or other malicious acts involving nuclear material, other radioactive substances or their associated facilities". For more information, see: <http://www-pub.iaea.org/MTCD/publications/PDF/Pub1290_web.pdf>.

9. A summary of this speech can be found at: <http://www.opanal.org/Docs/SBP/SBP51.pdf>.

10. In the preamble to the constitutive treaty of the UNASUR, the following clause can be found: "Certain that integration is a decisive step towards the strengthening of multilateralism and the rule of law in international relations in order to achieve a multipolar, balanced and just world, in which the sovereign equality of states and a *culture of peace prevail in a world free of nuclear weapons and weapons of mass destruction*" (italics added). Available at: <http://www.unasurcds.org/index.php?option=com_content&view=article&id=417%3Aunion-of-south-american-nations-constitutive-treaty&catid=58%3Aingles&Itemid=189&lang=pt>. Accessed on: Aug. 6th, 2013.

11. Available at: <http://www.unasurcds.org/index.php?option=com_content&view=article&id=420%3Astatute-of-unasur-south-american-defense-council&catid=58%3Aingles&Itemid=189&lang=pt>. Accessed on: Aug. 6th, 2013.

12. For more information, see: <http://www.gob.cl/media/2013/01/Declaraci%C3%B3n-de-Santiago.pdf>.

13. The statement was made at the 56th International Atomic Energy Agency General Conference in 2012. The speech is available at: <http://www.abacc.org.br/?p=5219>. Accessed on: Jul. 31st, 2013.

14. For illustration purposes, a summary of the discussions and activities carried out in one of those workshops is available at: <http://scm.oas.org/pdfs/2008/CP20766E01.pdf>. Accessed on: Aug. 6th, 2013.

15. The national reports presented to the committee can be found at: <http://www.un.org/en/sc/1540/national-implementation/national-reports.shtml>.

16. See information on the project at: <http://www.oas.org/en/sms/cicte/programs_implementation.asp>.

17. The text of the convention, as well as of the amendment, is available at: <http://www.iaea.org/Publications/Documents/Conventions/cppnm.html>.

18. Further information is available at: <http://www-ns.iaea.org/downloads/security/itdb-fact-sheet.pdf>.

19. See information on the project at: <http://www.state.gov/t/isn/ecc/index.htm>.

20. Available at: <http://www.state.gov/t/isn/c10390.htm>. Accessed on: Aug. 6th, 2013.

21. For further information, see: <http://www.state.gov/t/isn/c18406.htm>.

22. Individual information per country and updated until 2012 is available at: <http://world-nuclear.org>.

23. Available at: <http://infcis.iaea.org/Default.asp>.

24. Available at: <http://world-nuclear.org/info/Nuclear-Fuel-Cycle/Uranium-Resources/Supply-of-Uranium/#.UhP59z-6W9s>.

25. Available at: <http://www.minem.gob.pe>.

26. Available at: <http://nucleus.iaea.org/RRDB/RR/ReactorSearch.aspx>.

27. Available at: <http://tratados.mrecic.gov.ar/busqueda.php?consulta=si&modo=c>.

28. Available at: <http://www.defesanet.com.br/pensamento/noticia/10641/Defesa-em-Debate—-Reator-Nuclear-Multiproposito—cooperacao-estrategica-Brasil-e-Argentina>.

29. The following countries are part of the ARCAL: Argentina, Bolivia, Brasil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela. Available at: <http://arc.cnea.gov.ar/quees/quees_arcal-a.asp>. Accessed on: Aug. 7th, 2013.

30. Available at: <http://www.foroiberam.org/welcome>.

31. Different interpretations on the recent nuclear policy in Brazil are available in Vieira de Jesus (2012) and Sotomayor (2012).

32. The voting records on resolutions of the UN General Assembly are available at: <http://www.un.org/en/ga/documents/voting.asp>.

33. For further information, check the following document produced by the UNIDIR: <http://www.unidir.org/files/publications/pdfs/multilateralization-of-the-nuclear-fuel-cycle-the-first-practical-steps-377.pdf>.

34. Further information on the initiative can be found at: <http://www.world-nuclear.org/info/inf117_international_framework_nuclear_energy_cooperation.html#.UgJqcZJwrW9>.

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Abstract

Nuclear Governance in Latin America

The article provides an outlook of the regional relations concerning nuclear technology in Latin America. For that purpose, we initially discuss the historic relationship of the Latin American countries with the set of rules, norms, principles and organizations involved in nuclear governance. The article provides an analysis of the connection between the multilateral institutional framework and the bilateral arrangements aimed at curbing the proliferation of nuclear weapons in the region. The current state of nuclear cooperation among the countries of the region is also mapped. In addition, the article assesses the peaceful use of nuclear technology in the region and the potential expansion of the use of nuclear energy by the Latin American countries. Considerations on the trends for nuclear cooperation among the countries of Latin America are also offered.

Keywords: Nuclear Governance – Latin America – Non-proliferation

APPENDICES

Chart 1

Adherence to the Treaty of Tlatelolco, to the Non-Proliferation Treaty and to the Additional Protocol

Country	Treaty of Tlatelolco	Non-Proliferation Treaty	Additional Protocol to the NPT
Argentina	R: 1994	S: 1995	-
Brazil	R: 1968	S: 1998	-
Bolivia	R: 1969	R: 1970	-
Chile	R: 1974	S: 1995	S: 2002, E: 2003
Colombia	R: 1972	R: 1986	S: 2005, E: 2009
Costa Rica	R: 1969	R: 1970	S: 2001, E: 2011
Cuba	R: 2002	S: 2002	S: 2003, E: 2004
El Salvador	R: 1968	R: 1972	S: 2003, E: 2004
Ecuador	R: 1969	R: 1969	S: 1999, E: 2001
Guatemala	R: 1970	R: 1970	S: 2001, E: 2008
Haiti	R: 1969	R: 1970	S: 2002, E: 2006
Honduras	R: 1968	R: 1973	S: 2005, **not effective**
Mexico	R: (1967)	R: (1969)	S: 2004, E: 2011
Nicaragua	R: 1968	R: 1973	S: 2002, E: 2005
Panama	R: 1971	R: 1977	S: 2001, E: 2001
Paraguay	R: 1969	R: 1970	S: 2003, E: 2004
Peru	R: 1969	R: 1970	S: 2000, E: 2001
Dominican Republic	R: 1969	R: 1971	S: 2007, E: 2010
Uruguay	R: 1968	R: 1970	S: 1997, E: 2004
Venezuela	R: 1970	R: 1975	-

Label: R = ratification date, S = signature date, E = effect of Additional Protocol.
Chart elaborated with data from the following sources:
IAEA. Available at: <http://www.iaea.org/Publications/Documents/Treaties/index.html>.
OPANAL. Available at: <http://www.opanal.org/TTlatelolco_firmas.html#.UfpRml1wrW8>.

Chart 2

Voting Records by Latin American Countries on Resolutions about Nuclear Issues in the Security Council

Resolution (S/RES/n)	Description	In favor	Against	Abstention	General Pattern of Voting by SC
699 (1991)	Destruction, removal or disposal of weapons in Iraq	Cuba Ecuador	-	-	15-0-0
707 (1991)	Iraqi violation of the SC resolution 687 related to the inspection of biological, chemical and nuclear weapons capabilities	Cuba Ecuador	-	-	15-0-0
825 (1993)	North Korea's decision to withdraw from the Nuclear Weapon Non-Proliferation Treaty	Brazil Venezuela	-	-	13-0-2 (Abstentions: China, Pakistan)
984 (1995)	The security guarantees concerning the use of nuclear weapons on countries with no nuclear weapons which are part of the Nuclear Weapon Non-Proliferation Treaty	Argentina Honduras	-	-	15-0-0
1172 (1998)	The nuclear tests carried out by India on 11 and 13 May 1988 and by Pakistan on 28 and 30 May 1998	Brazil Costa Rica	-	-	15-0-0

Chart 2

Voting Records by Latin American Countries on Resolutions about Nuclear Issues in the Security Council

Resolution (S/RES/n)	Description	In favor	Against	Abstention	General Pattern of Voting by SC
1373 (2001)	The threats to peace and international security caused by acts of terrorism (It remarks on the relation between terrorism and the illegal movement of nuclear weapons)	Colombia Jamaica	-	-	15-0-0
1441 (2002)	The decision to institute a reinforced inspection regime to ensure Iraq's compliance with its disarmament obligations	Colombia Mexico	-	-	15-0-0
1540 (2004)	The non-proliferation of nuclear, chemical and biological weapons	Brazil Chile	-	-	15-0-0
1673 (2006)	Extension of the Security Council Committee's term according to resolution 1540	Argentina Peru	-	-	15-0-0
1695 (2006)	The firing of ballistic missiles by North Korea	Argentina Peru	-	-	15-0-0
1696 (2006)	Iran's suspension of all nuclear activity, including research and development	Argentina Peru	-	-	15-0-0
1747 (2007)	The advancement of measures against Iran concerning its nuclear activity	Panama Peru	-	-	15-0-0

Chart 2

Voting Records by Latin American Countries on Resolutions about Nuclear Issues in the Security Council

Resolution (S/RES/n)	Description	In favor	Against	Abstention	General Pattern of Voting by SC
1762 (2007)	The end of the term of the Monitoring, Inspection and Verification Commission of IAEA's Iraq Nuclear Verification Office	Panama Peru	-	-	14-0-1 (Abstention: Russia)
1803 (2008)	The extension of measures against Iran in connection with its development of nuclear technologies for weapons and missiles	Costa Rica Panama	-	-	14-0-1 (Abstention: Indonesia)
1810 (2008)	The non-proliferation of weapons of mass destruction and extension of the Security Council Committee's term established by resolution 1540	Costa Rica Panama	-	-	15-0-0
1835 (2008)	Iran's obligations to comply with the SC's resolutions and meeting the requirements of the IAEA's Board of Governors	Costa Rica Panama	-	-	15-0-0
1874 (2009)	Measures against North Korea for the testing of nuclear weapons	Costa Rica Mexico	-	-	15-0-0

Chart 2
Voting Records by Latin American Countries on Resolutions about Nuclear Issues in the Security Council

Resolution (S/RES/n)	Description	In favor	Against	Abstention	General Pattern of Voting by SC
1887 (2009)	Non-proliferation and nuclear disarmament	Costa Rica Mexico	-	-	15-0-0
1928 (2010)	The extension of the panel of experts on North Korea	Brazil Mexico	-	-	15-0-0
1929 (2010)	Measures against Iran related to its research and development on military technologies	Mexico	Brazil	-	12-2-1 (Opposing: Brazil, Turkey) (Abstention: Lebanon)
1957 (2010)	End of the measures on weapons of mass destruction and missiles imposed by resolutions 678 and 707	Brazil Mexico	-	-	15-0-0
1977 (2011)	Non-proliferation of weapons of mass destruction and extension of the SC Committee's term on the issue until April 25 **2021**	Brazil Colombia	-	-	15-0-0
1985 (2011)	Renewal of mandate of the UN Panel of Experts established by the SC resolution 1874 regarding North Korea	Brazil Colombia	-	-	15-0-0

Chart 2

Voting Records by Latin American Countries on Resolutions about Nuclear Issues in the Security Council

Resolution (S/RES/n)	Description	In favor	Against	Abstention	General Pattern of Voting by SC
2049 (2012)	Extension of mandate of Panel of Experts established by resolution 1929 regarding Iran	Colombia Guatemala	-	-	15-0-0
2050 (2012)	Extension of mandate of Panel of Experts as specified in the SC resolution 1874 regarding North Korea	Colombia Guatemala	-	-	15-0-0
2055 (2012)	Increase of the size of the SC's Group of Experts established by resolution 1540	Colombia Guatemala	-	-	15-0-0
2087 (2013)	Condemnation of missile launch on Dec 12 2012 by North Korea	Argentina Guatemala	-	-	15-0-0
2094 (2013)	Strengthening of sanctions on North Korea in response to nuclear test on Feb 12 2013	Argentina Guatemala	-	-	15-0-0

Source: United Nations Bibliographic Information System. Available at: <http://www.un.org/Depts/dhl/>.