First Quarterly Report

Assessing Nuclear Security Risks and Opportunities in Latin America and the Caribbean

Part I - Risks

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Latin America and the Caribbean make up the only inhabited region in the world where nuclear weapons have been never developed, or tested, or deployed, with the exception of the Soviet Union's frustrated attempt in the run-up to the 1962 Cuban Missile Crisis. All its 33 sovereign states are bound by the Treaty of Tlatelolco, which set up in 1969 the world's first nuclear weapon-free zone in a populated area. The US, UK, France, and the Netherlands, with territories in the region have also signed and ratified the Protocol 1 of the Treaty.

In nuclear terms, the region has achieved a significant development and nowadays is virtually free of weapons usable materials, except for Argentina that still keeps less than 5kg of highly enriched uranium. The region is also free of chemical and biological weapons.

The Latin American relatively peaceful environment favored the creation of innovative models of confidence building among nations, such as the neighbor-to-neighbor control put into practice by the ABACC, Brazilian-Argentine Agency of Accounting and Control of Nuclear Materials. Elements of this model, which made possible turning both countries' rivalry into cooperation in the 90's, are seen by the expert community as of potential application in other regional conflicts that involve nuclear risks, such as South Asia, Middle East, and the Korean Peninsula.

As a testimony of such nuclear relevance, four countries in the region: Argentina, Brazil, Chile and Mexico have participated in the Nuclear Security Summits-NSS process which will have its third round next March 26 in La Hague.

Despite these positive facts, some structural vulnerabilities in the region could potentially contribute to the occurrence of nuclear or other weapons of mass destruction (WMD) catastrophic incidents, anywhere in the world.

Such vulnerabilities at national and regional levels could be reduced in the long term but it is required a strong and consistent political will which prevails over governments' isolated and/or erratic decisions. It implies a collective and sustained effort in the long-term.

Existence of materials and facilities

The region is home to six nuclear power reactors, two each in Argentina, Brazil, and Mexico, and two more in an advanced state of construction in Argentina and Brazil. There are also 16 operational research reactors spread among the above-mentioned countries plus in Chile, Peru, and Jamaica. Brazil and Argentina each have small-scale uranium enrichment facilities and several other nuclear fuel cycle-related plants. As in the rest of the world, there are also thousands of radioactive sources around that are being used in many activities such as medicine and industry.

Despite the level of nuclear activity all over the region, the amount of weapons usable materials is of little significance, and decreasing. In the past there have been successful conversions of research reactors to replace HEU cores to LEU ones, the latter in Mexico during 2012 when as a part of the 2010 Washington NSS commitments, the HEU fuel from the Triga Mark RR was replaced and shipped back to the US. The same process had been take place before in Argentina, Brazil, Colombia, and Chile.

Argentina, in particular developed world class technology to do this conversion, as well as for the design and construction of research reactors, and of small and medium 4th ones for power generation.

However, facilities and materials in the region are, as others worldwide, at risk of terrorist attacks, theft and illicit trafficking.

In particular, illicit trafficking/ use of radioactive sources has been significant in several countries. The presence of orphan sources is also an issue of concern. In this sense is important to recall the Goiania, Brazil incident in 1987 when civilians were irradiated by a Cs-137 radioactive source stolen from an abandoned hospital and mistakenly manipulated by scrap-dealers. The IAEA called it "one of the world's worst radiological incidents ever."

The recent case early December 2013 in Mexico when a truck containing a high intensity Co 60 radioactive source was stolen in a gas station and then removed from its protective shielding, without apparent consequences, shows that such acts are not only possible but also that today they still can happen. As the IAEA's report states, such kinds of sources are "extremely dangerous to the person. If not safely managed or securely protected, it would be likely to cause permanent injury to a person who handled it or who was otherwise in contact with it for more than a few minutes. It would probably be fatal to be close to this amount of unshielded radioactive material for a period in the range of a few minutes to an hour."

It is known that such sources would be the preferred choice for terrorists attempting to build Radiological Dispersal Devices, also called "dirty bombs."

In order to pursue effective prevention of potential criminal acts, governments should raise this issue on their scale of national priorities. Design and management of facilities should follow high nuclear security standards and should be done based on a close cooperation among states and with the IAEA. But different approaches and degree of interest in prevention still poses a very strong challenge in a region where the common thought is: "If anything happen, it won't be here."

It is also essential that all states in the region commit themselves as parties to the Convention on the Physical Protection of Nuclear Material (CPPNM), the only legally binding international instrument for physical protection of such material. They should then ratify the 2005 CPPNM Amendment (not yet into force).

While the original Convention defines obligations of physical protection during international transport, the Amendment extends such obligations to nuclear facilities and material in peaceful domestic use, storage and transport. It also includes provisions concerning location and recovery of stolen or smuggled nuclear material, mitigation of radiological consequences of sabotage, and ways to prevent and combat related offences. Taking into account that 26 out of 33 states are already CPPNM parties, but only 5 of them have ratified the 2005 Amendment, an energetic action to close these gaps results of extreme importance.[1]

Organized Crime and Illicit Trafficking

Shadowy activities such as drug-trafficking and other forms of organized crime are expanding across the region. They have enough economic resources to acquire any illegal material available in the world. The laptops of Raul Reyes, the leader of the Revolutionary Armed Forces of Colombia (FARC) killed during a military operation in 2008, showed the interest of the insurgent group not only in drug trafficking but also in obtaining uranium and possibly in building a "dirty bomb."

The threat of widespread violent crime is now expanding from traditional locations such as Mexico or Central America to non-traditional ones, as criminal networks seek out of opportunities opened up by corruption and weak laws. Such element of the regional environment could be favorable to the trade of sensitive materials relating to WMD and dirty bombs.

[1] More details in Irma Arguello, "Assessing Nuclear Security Risks and Opportunities in Latin American and the Caribbean," Part II, Opportunities, FMWG, 2014.

Permeability of borders and relatively underdeveloped export control systems, together with weak domestic legislation in some countries, could be functional to such activities.

But illicit trafficking is not a prerogative of non-state actors. A recent case made evident that the region is not exempt of being either a route or a final destination of states' or non-state actors' covert operations. Last July a North Korean freighter that carried missile systems and two MiG-21 fighter jets, all hidden beneath bags of sugar, was seized by the Panama Canal authority during its return from Cuba. The shipment violated the United Nations Security Council Resolutions (UNSCR) that ban North Korea from importing and exporting such weapons.

Practical prevention of illicit actions by non-state actors that could involve WMD has reached different degrees of advance across the region. It is however necessary to make a consistent effort to achieve full and robust compliance of the UN Security Council Resolution 1540, with a special focus on the development and implementation of related domestic legislation in all countries.[2]

Terrorism

Several converging factors make the region attractive to terrorists. For a start, some states have pending their decision to enact anti-terrorist legislation, which allows exceptional judicial procedures when fighting terrorism-related crimes.

The existence of uniform legal frameworks is particularly necessary given that two of the major acts of deadly international terrorism in the world have occurred in the region. In fact, Islamic extremist attacks in Buenos Aires, to the Israeli Embassy in Buenos Aires in 1992 and to the Jewish Mutual Association (AMIA) in 1994 killed in total 114, and injured 542.

Both attacks still remain unpunished, despite of the strong evidence that points to Iran as the sponsor and to the militant Shiite group Hezbollah as perpetrator.

The terrorists entered Argentina through the Tri-border area, between Argentina, Brazil and Paraguay, which is considered a zone of vulnerability that acts a magnet for organized crime.

Networks devoted to smuggling, counterfeiting, and trading of stolen materials and weapons have a strong position there, while the area has been traditionally considered a sanctuary of Islamic terrorism. There is a realistic risk that nuclear, chemical or biological weapons- or more likely their key components- as well as radioactive sources,

[2] Ibid.

could be trafficked through the area's heavily-forested borders where physical control is very difficult in practical terms.

Concerning nuclear threats, 20 out 33 states have still to become parties to the International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT) and therefore to commit criminalize acts of nuclear terrorism and to promote cooperation with other states to prevent, investigate and punish those acts.

Iranian penetration

For years Iran has cultivated a close relationship with several populist governments in the region: Venezuela, Ecuador, Bolivia, Cuba, Nicaragua and, to a lesser extent with Brazil and Argentina. As the Islamic Republic perceives Latin America as a favorable environment to their interests, it has consistently increased the number of diplomatic missions, cultural centers, and funding streams toward the region.

In 2012 President Obama signed the Countering Iran in the Western Hemisphere Act aimed at assessing the dangers of such Iranian penetration and putting the US security system to work on the issue. The bill specifically warns that Iran is "signing economic and security agreements (in Latin America) in order to create a network of diplomatic and economic relationships to lessen the blow of international sanctions and oppose Western attempts to constrict its ambitions."

This is consistent with the fact that some of the like-minded governments declared in the past their intention to help Iran alleviate the effect of international punitive measures.

Social and Political Situation

The importance of social order and of high quality political institutions (and their associated collectives and individual behaviors) in the reduction of nuclear dangers is out of question.

The recently launched NTI Index 2014 describes very well the correlation between flaws in the social /political situation and structures and the increase of nuclear risks. Specifically the category *Risk Environment* in the Index reflects how nuclear security conditions can be adversely affected by political instability, governance challenges, and high levels of corruption among public officials.[3]

[3] "Nuclear Security Index 2014," NTI. <www.ntiindex.org>. The NTI Index, covers 25 countries around the world which possess nuclear usable materials plus 151 countries which do not possess such materials.

In this sense, the low quality of social and political institutions can affect nuclear security in a country by setting a variety of structural malfunctions which can boost risks in practice despite the existence, in theory, of a national legal framework.

Factors such political stability, effective governance, pervasiveness of corruption, and the presence of groups interested in illicitly acquiring nuclear materials are critical to raise nuclear dangers in a country. Other issues such as social or political unrest as well as internal conflicts can also affect the government's ability to provide nuclear security, as the turmoil created by the unrest may open opportunities for thefts and illicit transfers. The length of time that the regime or government has been in power; the number of officials appointed rather than elected; the frequency of reports or rumors of bribery; and perception of the degree to which public officials are involved in corrupt practices (e.g., misuse of public office for private benefit, accepting bribes, dispensing favors, and patronage for private gain) can be signs of vulnerability.

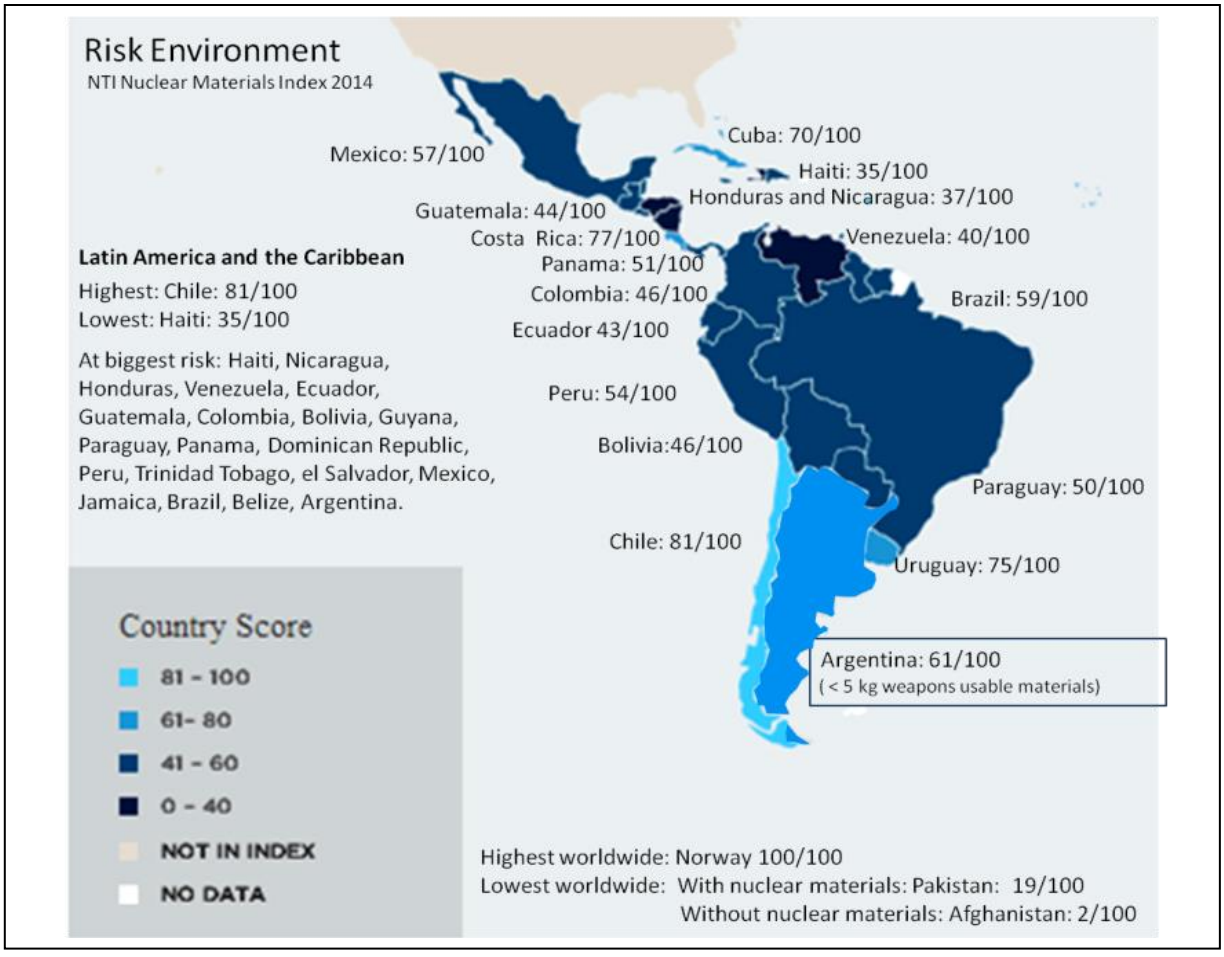

Figure 1

Figure 1 shows the results for the *Risk Environment* category of the NTI Index. It includes the assessment of 27 out 33 countries in the region. It is clear that in Latin American and Caribbean there is much work to do to improve the social / political environment and to create a healthy institutionalism in a large number of countries.

Concerning political and social issues that could contribute to increase nuclear risks, the NTI Index confirms that the region, with an average of 56/100, can be considered a medium to high risk environment. In this sense point countries like Haiti, Nicaragua, Honduras and Venezuela as the most compromised, followed closely by Ecuador, Guatemala, Colombia, Bolivia and Paraguay. Only Barbados and Chile are considered as low risk environments in terms of nuclear security.

Several indicators deserve to be analyzed in more detail to clarify key aspects of the regional situation. *Social Unrest* takes into account of large scale demonstration or political strikes that could destabilize a nation in the near future, and therefore could affect a government's ability to secure nuclear materials and facilities. In this sense, the most vulnerable countries are Bolivia, Venezuela, and Argentina, followed by Ecuador Guatemala, Haiti, Mexico and Panama.

A second indicator relevant to our purposes is the *Effectiveness of the Political System* that gives account of tensions between executive and legislative branches in the government and related instability. Chile shows the best situation with a political system seen by experts as highly effective. On the other hand, Guatemala, Haiti, Honduras, Nicaragua, followed by countries like Venezuela, Peru, Paraguay, El Salvador, Ecuador, Bolivia and others show a system with a very low effectiveness.

Finally the *Pervasiveness of Corruption* is a key indicator as corruption affects the potential for theft of nuclear materials and weakens the entire government's structure. Situation in Latin America and the Caribbean is far from being promising. Only one country Barbados shows very low pervasiveness, followed by Bahamas, Chile, Costa Rica, Cuba, Uruguay and Belize On the other hand: Ecuador, Haiti, Honduras, Nicaragua and Venezuela shows a very high pervasiveness followed by the rest of country with High pervasiveness. In other words it makes 20 countries surveyed very vulnerable to corruption and its associated illicit acts.

In parallel, The WJP Rule of Law Index by the World Justice Project confirms and deepens these findings. The Index offers a detailed and comprehensive picture of the extent to which countries adhere to the rule of law in practice.

It makes an assessment of the limits to government powers placed by the society, the level of corruption, the level of order and security, the respect to the fundamental rights, and key aspects of enforcement and justice in 96 countries, 16 from the region of analysis: Argentina, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Ecuador, El Salvador, Guatemala, Jamaica, Mexico, Nicaragua, Panama, Peru, Uruguay and Venezuela. [4]

The category *Limited Government Powers* gives a good idea about the degree of separation within government' powers as well of the society's control over governmental decisions. In other words, it can be taken as a good reference of the quality of a country's institutions. Among the surveyed Latin American and Caribbean countries, Chile, Uruguay and Brazil show the highest rates while Venezuela, Nicaragua and Bolivia the lowest ones. Government officials' impunity concerning their misconducts reaches the highest rates in Venezuela, Nicaragua, Bolivia and Ecuador.

A second relevant category which can be contrasted with the NTI Index is the one related to *Corruption*, which is broken down in executive, legislative and judicial branches, and in security forces (policy and military). Overall results show the highest levels of governmental corruption in Bolivia, Guatemala, Mexico, Venezuela, Nicaragua and Argentina, while countries with less corruption at a government level are: Uruguay, Chile and Brazil. Results by branch follow the same trend in general terms. Concerning the lack of *Law enforcement* the most critical situations are those of Venezuela, Bolivia, Argentina, Guatemala and Nicaragua.

Coincidences between both Index in terms of countries at biggest social and political risk are noticeable, even though the scope of surveyed countries is quite different.

The way forward – Identifying Opportunities

It is evident that the issues of concern work synergistically to raise nuclear security risks and, therefore, they should be urgently addressed in an integrated way. It implies cooperative governmental in the region, with the support of the international community.

Despite that this immediate effort is required, processes involved in improving such vulnerable issues are definitely of slow pace, as they involve deep changes in the dynamic and mindset of societies and governments. It is therefore realistic to expect

[4] "Rule of Law Index 2013," The World Justice Project. <
http://worldjusticeproject.org/sites/default/files/WJP_Index_Report_2012.pdf>

that structural vulnerabilities, even making the adequate decisions will likely remain for a long time before noticeable changes can be perceived.

Fortunately there are other practical decisions that can be made to reduce in the overall nuclear security risks in shorter terms. Such decisions offer countries big spaces of opportunity to make the difference in favor of nuclear security with a relatively small effort. [5]

Allow the legal framework for nuclear security become universal is one of the ways forward. It is essential that states work as a group to pursue a broad ratification of the specific international instruments, as well as they commit themselves to make efforts to pass the associated domestic legislation. It would be a huge step where Latin American and Caribbean countries could be relevant actors. But there are more.

Cooperative action to increase regional security requires sharing successes and failures among all the relevant actors: government, multilateral organizations and civil society. As a very promising fact, there are signs of an increasing activity in Latin America and the Caribbean focused on reduction of nuclear and other WMD dangers.

It is important that all emerging initiatives offer governments and the public tools for better awareness and understanding of threats as the required step to trigger regional cooperative responses to reduce these risks that affect everyone.

[5] More details in Irma Arguello, "Assessing Nuclear Security Risks and Opportunities in Latin American and the Caribbean," Part II, Opportunities, FMWG, 2014.