

International Seminar

Nuclear Nonproliferation and Disarmament - The Future of the NPT

Rio de Janeiro, October 29 and 30, 2009

Full audio transcription *

Quotes in Spanish, and Portuguese, translated into English

Panel 3: The Right of Peaceful Uses of Nuclear Technology
October 29, 2009

Odair Dias Gonçalves: -Before presenting the participants of this table, I would like to quickly present the subject in a very concise way. The subject of this panel is the right of peaceful uses of nuclear technology. For starters, I would like to highlight that a title maybe more appropriate, would be the management of the right of use of technology, because the right of use of nuclear technology is an inalienable right of countries, linked directly to their sovereignty. Therefore, it is not about discussing the right but discussing how to process this right in a secure way, inclusively to guarantee the second theme of this Seminar which is the future of the NPT. The future of the NPT is certainly going to depend on how these rights were handled.

In my opinion, I imagine that my colleagues of the table are going to highlight the issue of the respect of the differences. That theme is very common in sociology, when referring to race, colours, beliefs, but yet it is not a right, it is not a subject really incorporated to the political sociology. It seems to me that the success of the NPT -and our friend, Ambassador Sergio Duarte, certainly is one of the persons with more authority to talk about that- lays on the respect of the differences between the countries, cultural differences and economic differences, including differences about ideology. Therefore, today we are going to talk about these things, about how to manage this issue of the use of nuclear technology for peaceful purposes. I think it is going to be a pretty productive subject, at the same time, not less polemic. Even the definition of pacific uses is an issue that has been present at the Agency for example, when discussing the question of possible uses of geological explosives or things alike.

Thus, happily, I am not speaking about this today; I am simply chairing this table. I would like to introduce our illustrious speakers: Dr. Olli Heinonen, IAEA Deputy Director General and Head of the Department of Safeguards. For those who may not know, the Deputy Director General of Safeguards is responsible for verifying the nuclear material placed under safeguards -nuclear material means uranium, thorium and their enriched derivatives- by evaluating that they are not diverted to military use or other nuclear explosive devices, and also to guarantee that there is no undeclared nuclear material or activities in non-nuclear weapons states parties to the NPT. Before joining the Agency in 1983, he was a Senior Researcher at the Technical Centre of Finland, Laboratory Otakaari.

Dr. Camilo Reyes Rodriguez is Director of the Observatory of Small and Light Weapons and professor of Colombian foreign policy. He was Chancellor of Colombia and Deputy Foreign Minister. He has been also an officer of the diplomatic corps and consular of Colombia from 1973 until 2008. He is a specialist in disarmament, human rights, international humanitarian law and, in promoting and managing international cooperation. He has served as President of the International Conference of the UN on illicit trade of small and light weapons, President of the Conference on Disarmament and signed on behalf of Colombia the Convention on the Prohibition of the Use, Accumulation, Production, and Transference of Antipersonnel mines.

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Dr. Alfredo Labbé is Director of the International and Human Security Division of the Chilean Ministry of Foreign Affairs. He was Deputy Ambassador to the United Nations in Geneva where he participated in various debates on non-proliferation of nuclear weapons, on the trafficking of small and light weapons, and on disarmament in general. He represented Chile in the VII Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons.

Dr. Odilon Marcuzzo do Canto, Secretary of the Brazilian Argentine Agency for Accounting and Control of Nuclear Materials -ABACC- since 2007, and professor of Physics at the Federal University of Santa Maria, where he studied civil engineer in 1978. Apart from being in charge of two professorships, he was Director of the Natural and Exact Sciences Center and also Dean of the University. In February 2003 he was appointed as Director of Technological and Scientific Development at FINEP. In 2005 he assumed the Presidency –this is not mentioned in this curriculum- but he occupied the Presidency until 2007, when he came to be the Director who represented Brazil in ABACC.

We have here great personalities, all capable and extremely prepared to discuss this topic. So, I will immediately give the floor to Doctor Heinonen.

Olli Heinonen: -Thank you very much. It's a pleasure and an honor to be here on the behalf of the International Atomic Energy Agency. And I would like to rise just a few points, maybe four points. First to talk about nuclear energy, nuclear renaissance and its impact on our verification work. What it means in terms of verification, how we need to change so that we stay, as we call, ahead of the game. Then I'm going to talk a little bit about nuclear fuel supply and technology transfer, which is the second pillar of the NPT and the second pillar of the IAEA. And then at the end, perhaps if time allows a few words about the IAEA current role and past roles on nuclear disarmament and verification related to that.

So, let me start then from the nuclear renaissance. It's been widely known that in the next two years quite a few countries are revisiting their energy mix and are going to opt for nuclear energy. This growth is not even globally. Most of the nuclear energy growth will take place in Asia. It's been estimated by 2020, or maybe better said that at this point of time for those 35 nuclear reactors which are under construction 16 are in developing countries. Most of them are in Asia. The other growth area will be Eastern Europe, which is still recovering after the collapse of the Soviet Union and they have a tremendous need for energy sources. Then Latin America there will be substantial growth in terms of numbers, in terms of percentages, but not so many new nuclear installations in the next 10 or 20 years. North America, yes, there is a substantial growth foreseen, particularly in Canada. But in Europe, Western Europe it's almost the same or it can even decline. It depends on what kind of resistance the new German government will make, but there is no practical growth.

What is the impact of this to the work of the IAEA and which are the consequences to the international community?. There are about 20 or 30 countries have no nuclear experience, at this point of time, but they are going to build nuclear power plants in years to come. As a result of that, at this point of time they don't have appropriate legislation always available, their human resources to that are limited. They need support from the IAEA, they need support from the nuclear member states to make sure that they are able to build and use their nuclear installations on a safe and secure manner. If there is misuse of nuclear material, if there is an accident, it has global consequences. Those accidents and those misuses don't honor national borders and will have an adverse impact on the public opinion, also, in countries which are able to use these energy sources in a safe manner.

So, it's in all of our interest to provide all the necessary support to those states that are now embarking in nuclear programs. This growth means also another thing; there is more need for nuclear fuel which means more enrichment services needed. New countries need to secure their nuclear fuel needs. We will see additional enrichment plans on top of the ones which are in existence. And anyone who is

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building an enrichment capability, as pointed by several speakers earlier this morning, have also then a capability for using nuclear energy for military purposes, if it so decides. So there is a first verification challenge which can be actually solved in two ways. One is to have more robust verification skill. And here I have good news to tell because the IAEA safeguards approach, our safeguards approach for safeguarding of enrichment plants is good. I don't think we need to develop more there, in order to meet our verification goals.

But the problem comes from the so called breakout scenario and it is one of the concerns placed by many member states of the nuclear programs of Iran. What if someone does at a later time a decision to go for military uses? Then the conversion time is much shorter than it would be in other cases. And there ElBaradei and others have suggested so called multinational approaches, joint ownership of the enrichment plants as an example, have them more under an international control. There has been good progress on that area, we have been able to secure the funding for the nuclear fuel plan, but unfortunately the concept has not been able to proceed that fast in our decision-making organism in the Agency and we still don't have an agreement ready for signing for a nuclear fuel pack. And I don't think that it will happen in the next few months, but maybe sometime next year hopefully.

Once, nuclear materials are more widely used, and we have to look also, with perhaps a somewhat different angle. When our current verification system was created in 1960, that's where the basic verification concept comes today, the world was different. Access to sensitive information was very difficult. You need to call special laboratories, do a lot of your own research and development work to find out the properties of Uranium, to develop centrifuges, enrichment technologies, perhaps reprocessing was more readily available. But now at the time of globalization when the national borders are disappearing information flows freely, people move to get higher education, access to information, the use of internet provides enormous opportunities for the proliferators. Those were not in place earlier.

Therefore, in order to cope with the challenges in coming years, we need to change our verification scheme to match with those challenges. This needs three or four things. First the Agency must have adequate financial and human resources to do our work. Second, we need to be able to tap up-to-date technologies for the verification. And going a little bit back to this financial and human resources, when I talked about these growth numbers which may be nuclear energy increase by 2020 can be somewhere between 50 or 45 percent and ten years later can be up to 95%, almost double. We are not going to have double resources for the IAEA in 10 or 20 years.

So, therefore, we need to (...) also the way we do safeguards, the way we do verification. And we talk there about information-driven safeguards. What does it mean? It means that we go away from this traditional criteria based verification. We keep it there because this is one of our strengths. If we look at the history of all the proliferation cases, problems that we've had in the last 10 or 15 years were basically cases where the states used either undeclared nuclear material or undeclared facilities to do the jobs that they say were doing. So we need to tune our system in such a way that we will find undeclared nuclear material and activities and really use this routine stuff to reassure that the powder is, sort to say, dry. And what does this mean?

For example, when we come to the enrichment plants, which are the sensitive ones, maybe we should go to the next stage in our work and have not remote monitoring but remote inspection for the sensitive facilities, a continued inspection regime, which with the modern technology can be pretty much handled from Vienna, perhaps with the help of SAEs or like ABACC here. You stand as a part of a scheme. And then have unannounced inspections to complement the scheme. We need, also, to have better tools, more modern instruments, to use them to maximum extent. This morning our inspectors came back from Iran with environmental samples. We don't have today an up to date laboratory for IAEA in Vienna to analyze it. We have to wait three months to have the results from those samples. We need to develop

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further this, we need do cooperation. To that I'm glad to know in Brazil your laboratories will soon be passing this qualification test. But at the same time we need to build up to date laboratories available for IAEA for spots checks, and for urgent cases.

I still have a couple of minutes and I would like to say a couple of words about the IAEA and disarmament. Why should IAEA be involved? Actually it's written in our Statutes already. It was foreseen in the mid 50s that there is a role. And particularly in article 3p1 there is a specific reference to disarmament, disarmament and verification. Actually we have experience on that. We have been verifying the dismantlement of South Africa's nuclear program in the early 90s; even though the program had been eliminated earlier. We are disarming, successfully, Iraq. And we have been involved in certain activities in North Korea. So the expertise is there. We have a trilateral initiative with the US and Russia to develop methodology to verify weapon pits, that was completed a little more than five years ago.

And we are actually currently making the most important contribution to peaceful uses of nuclear energy in the United States of America by verifying down-blending of high enriched uranium which comes from the military programs of Russia, turned to low enriched uranium and then it goes to the civilian cycle. Little bit similar is the plan...or there is a likelihood that the IAEA will be involved in the verification of weapons grade or military grade plutonium in the US, which also will be converted in Savannah River in, I think, five years time to nuclear fuel which will then be burnt in the nuclear reactors. And I think that in the next years to come we will have to undust also our plans for Fissile Material Cut-off Treaty and our verification role there. So, I think I'll stop here and then you can ask for clarification. Thank you very much.

Camilo Reyes: -Thanks. With your permission, I will do my presentation in Spanish. First of all, I want to thank the invitation of CEBRI and the NPS. It is my honor to be with you here today. Let me begin my presentation by noting the importance that a country like Colombia (and the region) gives to the regime of nuclear disarmament and nonproliferation. Especially in a regional scenario that suffers the deterioration of multilateral regimes and in which there is a complex division regarding the conception of our democracies. I make reference to this because I believe that one of the most important elements to impede proliferation is the existence of strong democratic institutions. Unfortunately, we are seeing a deterioration of these institutions in our region. The deterioration of these institutions may lead to a certain disrespect of international regimes.

We all know that the NPT seeks (and was created) with the understanding that there would be a balance between disarmament and nonproliferation. I understand that the third element, which is the use of nuclear energy for peaceful purposes, somehow becomes the hinge that attaches the other two elements, in a sort of instrument that gives great coherence to the regime, among the countries that have nuclear weapons and countries that do not have, and are committed to never obtaining them. From that point of view, there is also a commitment that appears in the Treaty, which establishes that nuclear countries -and I apologize for the repetition- are committed to transfer material, equipment, and technology so that the non-nuclear countries would benefit from the production of nuclear energy.

So, it is not only cooperation, but also the transfer of material, technology, and equipment. And supposedly, there will be -and I think to a certain point it exists- the possibility for non-nuclear countries, mostly developing countries, to obtain new possibilities to emerge from their status as developing countries and become developed. Nowadays, this is related to the successful uses of nuclear technology for anything that has to do with human health, environmental protection, and energy production that respects the standards that are expected, not only in favor of the preservation of the environment but also to reduce climate change.

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It's very important that article 4 is implemented with all accuracy because it is a significant deterrent for countries to consider leaving the treaty. If that article 4 was really implemented -and I would say that we could make the states aware of the importance of this transfer- it would make the NPT even more relevant, and more pertinent for a large number of countries that have signed it and today do not understand why it really benefits them. The general feeling is that disarmament is not accomplished even though countries do not proliferate (that is, they do comply with their part) but the technology transfer, and equipment, and material goes on very weak and low profile.

So, I get to what my fellow panelist, Mr. Heinonen was saying. The Agency's role is crucial. Today, strengthening the Agency is essential; hopefully, its universalization and if possible, that all countries would adhere to its Statute. Also, it is necessary to achieve a much better funding and to obtain better equipment and personnel. What for? Obviously, to increase the possibility of signing more agreements with different countries in order to allow the Agency to develop in a more intrusive way, with more effective all controls and safeguards.

Information is very important. The issue of complementary access and inspections is extremely relevant, so is the matter of the appointment of inspectors with visas, the topic of subsidiary arrangements to carry out detailed, intrusive inspections, and the issue of communications and protection of information obtained by the Agency

These are all elements that give guarantees to the regime that there would not be proliferation. The other side of the coin is the increase of the Agency's capacity concerning its cooperation program. I read in a document that in 2006, the Agency managed about 1,000 cooperation projects and for that, it counted with US\$ 77 million. I must highlight that for the labor we expect -the international community, in the area of cooperation for obtaining nuclear energy-, this is a very low budget, if we are thinking of a regime that has a universal potential and significance.

I want to make a short comment about the pertinence that in this process of both cooperation and control, and implementation of safeguards, further efforts should be made to involve civil society, with more and better contact, and more and better knowledge. I say this only for my country but the truth is that the Colombian public opinion knows very little about this process. It learns very tangentially about the efforts being made in the international sphere to keep this regime and to comply with everything it proposed since its creation. It is very important that civil society gets on our side to preserve the regime and to ensure that the Agency complies with a higher level and a greater depth with the responsibilities given to it.

To finalize, I want to point out two aspects. First, the importance of the role that the region may have, in this case, Latin America and the Caribbean, and the leadership that we should reclaim to a region like ours in the preservation and projection of this regime. Finally, it is the importance of achieving a good result at the Review Conference next year. I had the opportunity to be directly involved in the 2000 Review Conference and I am aware of the difficulties and the delicacy with which we have to manage this process in order not to lose it, or at least not to weaken it. Yet, I fear that a failure next year, in which there would be no document of consensus including measures to give us a path to the future, forward-looking measures, if we do not have that, I am afraid that we will be in a position of extreme weakness in the face of a regime that we had to build with an enormous effort.

To that end, I would like to address two aspects to which Rebecca Johnson made reference this morning. First, even the subject of the application and use of nuclear energy for peaceful purposes is being developed with a certain weakness because it is reviewed every five years. The Review Conferences are very useful but are taken up with timeframes that are too long and they don't allow states to do a follow up and to mount pressure to make progress. Obviously, the possibility to make

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progress with the compliance of article 6 of the Treaty is related to the proposal for a Nuclear Convention. Thank you very much.

Odair Dias Gonçalves: -Dr. Alfredo Labbé.

Alfredo Labbé: -Thank you. I would also like to thank the CEBRI and NPSGlobal for this invitation. I am very pleased to be a part of this exercise where we are having a really important exchange of ideas.

As you can realize after the preceding presentations there are certain technical aspects related to the topic of this panel and I am not an expert in those technical aspects so I have put together certain thoughts concerning, I would say, political or philosophical elements which we should bear in mind in 2010. There are several conceptual avenues to approach the Non Proliferation Treaty. Its characterization as the corner stone of the international security, it's recurrent in statements and resolutions. It underlines the value added by the Treaty to the world order enshrined in the United Nations Charter.

Now consider as a social construct, the Treaty can be seen as an instrument designed to satisfy a set of political interests. The interests of the main powers within the world order. The interests of medium and small powers bent on the limitation of an utterly disrupted weapon system. A global interest shared by all to appropriate the benefits of nuclear energy. The question of national interest is significant at a time when article ten of the Treaty emerges prominently in present day analysis of the Treaty under the weather forecast for the 2010 Review Conference. Article 10 deals with the withdrawal from the Treaty, recognizing it as a right for the states parties. And this right stems from the, and I quote, "supreme position accorded to national interests of state parties." In a way, article ten positions the Treaty below those national interests.

As it was explained this morning, non nuclear weapon states have an interest in limiting the spread of weapons that pose a threat to the survival of humankind. These interests alone justifies the Treaty and we should keep in mind the reckless nuclear arms race going on at the time of its negotiation...in the late sixties. Article four recognizes as inalienable the right to develop research, produce, and use nuclear energy for peaceful purposes. This is a right and at the same time, a public good both global and national. As it has been remembered the need to reduce incrementally destructive carbon emissions has generated momentum to revisit the feasibility and convenience of nuclear energy.

In my own country, we have decided to look seriously at the prospect of developing domestic nuclear facilities. People who participated in a negotiation of the NPT Treaty affirm that enriching and reprocessing falls squarely within the realm of peaceful uses of nuclear energy. I have discussed this matter with a distinguished Mexican Ambassador who was much involved in the negotiation of the Treaty and we discussed this very interesting and the controversial topic at the Vienna Meeting of the Middle Powers Initiative. They say reprocessing and enriching are really part of the peaceful uses of nuclear energy. So any attempt to reinterpret article four in a way detrimental to this dimension of peaceful uses is abusive, according to this line of thought. And worse, it is conducive to a new layer of asymmetry between "haves" and "haves not". I could add an additional element. We particularly dislike the notion of good proliferators versus bad proliferators. We would dislike as well a notion of "good enrichers" and "bad enrichers". But of course, international security has to deal not only with one dilemma, but many. Reprocessing and enriching generate proliferation risks. This is true.

In my opinion, these risks alone justify reinforced safeguards as those provided by the Additional Protocol, which Chile has signed and implemented. I participated personally in the process of negotiation of the Additional Protocol, it was the so called "Ninety Three plus Two" Project, and the project emerged from the discovery of evidence suggesting that Irak was bent on producing military

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nuclear program, which was not discovered, it was not possible to discover it through technical verification means provided for the, by INFCIRC 153 safeguards protocols. So there is an objective verification need for the Additional Protocol and this is the national position of my country. So what to do? Perhaps in the face of recent experience we should invert the question and ask ourselves what not to do.

In a legal framework recognizing national interests as supreme, demonizing activities contained in a right dim as inalienable is legally and politically a bad idea. Of course demonizing states or governments is always a bad idea from a diplomatic point of view. History is full of arrogant words dutifully swallowed when the time of reckoning came. A bitter course of action would be because to that venerable and proven diplomatic weapon. The carrot.

There is no need to deny or to refrain from advertising the proliferation risks of enriching or reprocessing. But it is always better to entice or nudge if you want, those no needing to embark in an extremely costly and complex operation into more reasonable solutions provided that those solutions do no jeopardize, again the wording of article ten, the legitimate right of state parties. There lies, I believe, the pragmatic wisdom of all initiatives to establish multilaterally negotiated -this is very important- multilaterally negotiated and the legally guaranteed mechanisms to ensure nuclear fuel supply to state parties in need of it.

In our case, for instance in Chile, it would be nonsense to think about developing a domestic and indigenous capability for enriching and reprocessing. It would simply not make any economic sense, but we, of course, will need nuclear fuel. And we will need to have a guaranteed access to nuclear fuel. So the formulation an implementation of such mechanisms must pay attention to economic and market realities and opportunities, and should be presided by pragmatism. Nobody with a legitimate interest in the commercial benefit of such arrangements should be excluded from them. Cartels are always bad.

So in 2010, everyone should assume a truly diplomatic demeanor, avoiding confrontation and seeking to multiply incentives...incentives rather than denying legal realities. True proliferation is not a legal problem but a political one. Nevertheless the non-proliferation Treaty is both a political and a legal construct. Its legal government does legitimize the package deal contained therein, a legitimacy as demonstrated by the aftermath of the Irak invasion is the most precious global public good, never to be dismissed or forsaken. The key to legitimacy is acceptance. We usually advocate for balance between the NPT three pillars. The right to peaceful uses in fact will require increased attention in the future. St. Paul when referring to the theological trial of love, faith, and hope states that only love shall remain for eternity. When we arrive at that blissful state foretold by president a.k.a Neo Obama, disarmament and non-proliferation won't be needed but peaceful uses shall remain insofar as nuclear fuel lasts. Thank you.

Odair Dias Gonçalves: Odilon please.

Odilon Marcuzzo do Canto: -Thank you very much. Dr. Odair Gonçalves, my dear colleagues, ladies and gentlemen. I want to especially thank the CEBRI and NPSGlobal for this invitation. I feel even more honored to participate in this panel, which makes reference to the right of the nations and of the people to use nuclear technology.

Evidently, this pillar of the NPT has a very direct action on the other two pillars. Even more, as I understand it, it has the power to turn nuclear weapons unnecessary in the world, not just nuclear weapons, but all weapons indeed, because it addresses the centre of the problem: the use of technology to improve the quality of life of the people. It addresses the core of the problem which is

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inequality, social tension, violence that arises precisely where there is inequality, inequality of treatment, within a single nation or between nations.

A world where we have citizens who consume more than 12 megawatts per hour and citizens who consume less than 1 megawatt per hour, only for being born in different regions of this planet, is evidently a planet that can not be in peace. So I am very happy to be here at this table, to discuss the issue of peaceful uses.

In my speech I will make some considerations on the issue of the use of nuclear technology. Following these possibilities that are opened in this field of peaceful uses of nuclear technologies, then I will recognize the role that the International Atomic Energy Agency has been playing in this field. To acknowledge, as Dr. Olli Heinonen said, that it could do much more if there was a bigger supply of funds that what there is for such matters, and I will suggest that the role and objective of the Agency could be achieved even in a better way if the International Agency used regional resources, regional agencies, regional organizations to pursue these goals.

A French film of 1981 that won two Cesar from the French Film Academy, "La guerre du feu", describes in an artistic way the search for the secret of fire. With all the poetic licenses that are suitable in a work of art, the movie located in the Paleolithic period shows the advantage gained by the tribe that first mastered the art of lighting a fire. The history of mankind is a continuous and unambiguous demonstration of the competitive advantage that translates into power embedded in knowledge. It was the command of knowledge in cartography (evidently based on Chinese maps), in astronomy, in shipbuilding that gave Portugal a competitive advantage over other nations, creating the conditions for the construction of the Portuguese empire during the XV and XVI centuries.

The discovery that the fission, later the fusion of atomic nuclei, lead to the release of energy is an unimaginable density and the command of the technology of electric current placed in the hands of its discoverers a competitive advantage, therefore, an enormous power. Unfortunately, repeating the history of its ancestors from 100.000 years ago, humanity made again, with the first use of that new knowledge, a destructive action against its fellow men.

However, like most things in life, nuclear power is not presented with a single face. It has a sinister face, destructive, painfully maintained by those who sponsor nuclear weapons, for the most varied reasons. But it also has another face, capable of saving lives and improving the quality of life of people, and to turn our planet into a more dignified and more pleasant place to live in. This other side, represented by the peaceful uses of nuclear energy, is the one we want to see developed, and we claim it as an inalienable right of all nations, the right to the development of knowledge, and the right to access to these technologies.

The challenges that mankind faces in this millennium are urgent, and enormous. At least two of them, maybe the major ones which are the lack of food and the climate issue, are related to nuclear technology, which can be a key contribution. The Food and Agriculture Organization of the United Nations (FAO) estimates that already this year 2009, the world population living with alimentation levels below 1,800 calories per day surpass the barrier of one billion people. The Water Management Institute reports that only the Asian continent will have an increase of 1.5 billion people by the year 2050. This situation is aggravated by the fact that there is no available land in that region to expand the agricultural frontier, and the existent water resources will not be able to support such a demand.

The solution to the problem lies in the development of new irrigation technologies combined with the use of the existent hydric power, and the development of new crops with lower hydric requirement. But the challenges increase. The United Nations expect an increase of 2.5 billion people in the next 40 years. Africa's population is going to double, Asia is going to grow by 30%, only in Pakistan there will be a growth by 85%. To feed adequately this population, both in terms of quality and of appropriate caloric

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levels, will become a task of reasonable proportions. If not addressed, it will certainly place world peace at risk. In the words of the Director General of the FAO: "The hunger crisis will seriously jeopardize peace and security. We urgently need to get a consensus on the rapid and total eradication of hunger".

The use of appropriate nuclear technology has revealed as a strong ally in the struggle for food production. The IAEA, in partnership with the FAO and other regional organisms, develops an enormous effort in this area. This effort accumulates decades of successful results, improving the quality and quantity of crops. The research of new wheat crops, more resistant to the plague known as "ferrugem" that has reduced cultures in Africa and the Middle East, can offer a significant response to these crops in the affected regions. Hydrological studies using radioisotopes have improved irrigation techniques and optimized the use of existing water resources.

Another key issue for human development is access to electricity. While North America has a rate of over 10 megawatts per capita, in Africa the rate is less than one. The response to that growing demand for electricity can be addressed through the use of competitive, renewable sources, and through conservation technologies and optimization of the use of energy, but certainly it will not do without nuclear energy from fission reactors. At least, not in the upcoming decades.

The use of nuclear energy for electricity purposes started in the '50s, suffered a strong opposition in the 70's and 80's, obviously as a result of accidents of the Three Mile Island and Chernobyl. But the scientific progress of recent years brought technological developments that produced substantial increases in the levels of security and reliability of existing nuclear reactors. This fact, allied with the awakening of a concern for global warming caused by the exponential growth curve of fossil fuels in the energy matrix, brought nuclear energy back to the international agenda. In that context, nuclear fission reactors came to be viewed as energy sources with low emissions and, therefore, compatible with the concerns of climate change.

The Nuclear Energy Department of the International Atomic Energy Agency estimates that a total of 60 countries are now considering the possibility of having nuclear power as part of their energy matrices. At least one third of them will certainly have nuclear programs operating effectively by 2030. This estimate obviously depends on the evolution of a number of factors including the international price of fossil fuels, reactors' performance, the new generation of reactors, and also, the matter of the public acceptance. Either way, we are -as it is said- in a phase of "revival" of the issue of nuclear energy.

Then again, various international forums like the Inter Academy Council or the OCDE are unanimous in asserting that the importance of nuclear energy in the future of the energetic matrix is directly linked to the ability to satisfactorily address security issues, the matter of nuclear waste, and the question of proliferation risks. Such concerns highlight the importance of international nonproliferation treaties, international organizations and mechanisms responsible for the management and implementation of safeguards, as well as capable of promoting technical cooperation and the proper use of nuclear technologies. These considerations lead to the conclusion that there will be an exponential increase in the responsibilities of the International Agency. The accumulated experience and knowledge turns the Agency into an invaluable source of support and assistance for the construction of adequate infrastructure, safe and reliable, for the newcomers in the nuclear field, something Dr. Heinonen himself was saying recently.

On the other hand, proliferation risks are increasing. The adequate addressing of these growing responsibilities results in a corresponding need to increase the International Agency's budget, which may not be heard by member countries. One way to deal with these future challenges will be to promote the establishment of regional, independent and trustworthy systems, able to work in coordination with the International Agency, optimizing the available resources. The incentive and collaboration of regional

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systems with the Agency was already a concern of the Board of Governors of the Agency. In that aspect, the success of EURATOM and the 18 years of experience of ABACC as a bi-national agency of safeguards' implementation could serve as a guide.

Obviously, we are not defending a straightforward, pure and simple transposition of models, without major considerations of cultural differences, and without respecting the regional geopolitical characteristics. Such an attitude would certainly be doomed to failure. We do defend the central idea of the formation of regional agencies using the concept of "neighbors-watching-neighbors" as a possibility worth considering. The continued positive evolution of mutual understanding between Brazil and Argentina, initiated by the 1980 bi-national Treaty, fully justifies the creation and demonstrates the effectiveness of adaptation of the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials as responsible for managing and implementing the common system. The work undertaken jointly by the ABACC and the International Atomic Energy Agency over the years, has created a climate of mutual understanding and increasing trust between the agencies, becoming a highly positive experience between agencies as a model for the application of safeguards. International recognition has been demonstrated by the numerous papers and articles of the nuclear area that cite ABACC as paradigmatic model.

To finalize, I want to show four, five slides, three of them, explaining to those who don't know the mission and structure of ABACC. The last two are of pure "abaquian" pride, which are citations of ABACC in international newspapers. ABACC was created as a bi-national body in 1991 with the objective to manage, create a common system of accounting and control of nuclear material established in an agreement. The headquarters is in Rio de Janeiro, and we also have an office in Buenos Aires.

Its responsibility is to manage and implement the common system, assigning inspectors who perform the inspections, Brazilians in Argentina, Argentines in Brazil. Currently, we count with 90 inspectors, 45 Brazilians, 45 Argentines. ABACC also represents Argentina before third-parties, in what concerns the implementation of the system and also signs agreements in accordance with the authorization of the Commission, which is the highest organ of ABACC.

ABACC is formed by a commission of four members, two members from Argentina, two members from Brazil. The Board of Directors gives the policy guidelines for the functioning of the ABACC. The Secretariat is the executive body formed two secretaries, an Argentine secretary and a Brazilian one. Then we have an international relations officer, administration, two officers of planning and evaluation, an Argentinean, a Brazilian. An Argentine and a Brazilian in operations; an Argentine and a Brazilian in nuclear material accountancy; and the same in technical support. And now, the two files I promised that are citing ABACC. And this here is the International Journal of Peace Studies, also citing the ABACC many times. Thank you very much.

Odair Dias Gonçalves: It's amazing. Every one here respects the time. So it's very easy to conduct this table. Thank you very much. We have plenty of time for questions. I would only like to put forward a question to all the panelists so that while you are answering, if possible, you can address these two points that I think are some ideas that I would say, are provocative.

The first issue I would like to put forward is the title of the table: the right to use nuclear technology. It does not necessarily presuppose training or capacity of use. That question is an issue that comes along with the question of transfer of technology, and it also is related to the area of technical cooperation of the International Agency. Technology is synonym of power: economic power and political power.

The second point is: how or whether the discussion on non-proliferation can hide within its environment issues of economic interests? To what extent is it exempt from or gets to be independent of the matter of

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economic power? A very clear example is the issue of regionalization or the proposal of GNEP where it's placed the guarantee of supply, as our partner in Chile mentioned. If we take as an example the oil, there is no guarantee of supply when some countries hold the cartel, which is not good, as you mentioned. These are real-world issues. How do we face these issues, being that those questions have not been acknowledged by the Agency, given the diplomatic protocol that always surrounds the discussion in that forum? I'm going to take five questions from the audience and then give the floor to the panelists, and we repeat until our time is finished. Questions?

Member of the public: -I'm Scott Davis from the United States. I want to thank the panel for a very useful discussion. Ambassador Labbé put forward what I would call something of a standard for assuring those who wish to produce nuclear power, but don't necessarily have the funding or available to provide the full fuel cycle or, for other reasons, may wish not to pursue it and, specifically, this formula -as I understood it is- create incentives, don't deny rights. My perspective is that that is the standard that's being used globally now. And I wanted just to -sort of- check myself on that, I wanted to ask Deputy Director General Heinonen to talk about the multilateral nuclear insurances there are being discussed in Vienna whether I'm right; that is, whether it's correct to say that proposals are being seriously considered now, do not contain any elements that deny rights rather they are meant to create incentives along these lines. Thanks.

Odair Dias Gonçalves: -More questions? I think we could get five questions and then ask you together. Oh, there are no questions.

Alfredo Labbé: -Well, I will address first your question, which was in fact three elements. The right to use connected to the capability to use. I believe that we need to combine two worlds here. The first one is, of course, the world of the law, of international law, and there I insist in this element because I believe it carries political weight and political consequences. If the Treaty recognizes the right as inalienable, that means that the right pre-existed the Treaty, so the Treaty is not creating the right but really recognizing it. So there is, so to speak, a philosophical dimension to it and with the right as with other rights the faculties to exercise the right should come attached. But then, this is in the world of philosophy, in the world of international law. And you need to combine that with the real world, where you have technology as power and where you have the reality of cartels.

I believe that we are bound as states and as people, as persons, to live in these different worlds. In a certain way, what we do in the First World is to create ideas with the capability for transforming reality. And that's the importance of ideology. That is why, I keep saying to my friends in the community of the NPT that we need to fight using Marxist language, an ideological battle against the value of the notion that nuclear weapons are valuable security instruments; they are not. That is an ideological battle that we need to win.

Now, when coming to reality, I believe -and in this respect, I represent a small country, we are only 16 million of inhabitants. So, a small country must live with very wide open eyes, because the world is inhabited by elephants and other big creatures and sometimes, from time to time, you need to coexist with them and, in certain cases, sleep in their vicinity. So reality always carries lessons for smaller animals, and for small states. And, in this respect, we have seized every opportunity opened to us by globalization. You mention power here. I like very much Joseph Nye conceptual approach to power and, of course, I just love his notion of "soft power." It has been now adopted even in China. There was a very interesting speech, a reason speech -I believe-, by the Prime Minister, when he mentioned about increasing Chinese soft power. Well, that's wonderful, because this notion of three chessboards -a military one; a second economic one; and the third, the chessboard of soft power- provides plenty of opportunities for countries like my country.

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So in the economic chessboard power, power is more evenly distributed; and, well, we know a thing or two, additional things, after the economic crisis. So there you find, I believe, on the one hand, a sovereign thought for big elephants and an interesting thought for smaller animals. And I think that in reaching certain decisions concerning energy policy, concerning security policy, we must keep an eye on realities. In the case of Chile, I believe the decision will be governed by the economic feasibility of nuclear energy in our country and for our degree of success in enhancing, in expanding, the energy matrix, you see.

So I think it's difficult to combine both worlds but both worlds are important in themselves and contribute to illuminate political decisions. The first world, the world of ideas, the world of international law, is important in terms of perceptions, at the same time, and one of the previous panelists mentioned perceptions. Perceptions are terribly important when coming to security, because security in itself can be defined in terms of perceptions; because you feel secure and we have a very interesting debate in my country, where the government insists that, according to statistics, violence and crime in Chile have decreased enormously, while people, nevertheless, feel insecure. So perceptions are terribly important for security; and, that is why, it is important to keep an eye on this first world -and, what I said- not to deny what is in the treaty, not to deny the right, but to use real world for convincing people "yes, you do have the right, but look at the economy feasibility of the implementation of this right." And then in the case of the incentives, I believe, well, yes, we must use the Agency, we must be very creative, we must use the original dimension, in order to multiply the possibilities for incentives, and congratulations to Brazil and Argentina for this wonderful ABACC. There we have a model that we can use. But then we must coexist and live in these two worlds.

Odair Dias Gonçalves: Thank you very much.

Olli Heinonen: -Yes, going back to this multinational or multilateral nuclear fuel schemes. This was raised by the ElBaradei in 2003; actually, it has been about one dozen different schemes which start from a very simple last resort IAEA controlled low enriched uranium bank, to all the way international enrichment centres, some of them controlled by IAEA, some of them not; but, if you look now today, what is in the most advanced state, it is the Russian proposal for international centre in Angarsk, which will be then a low enriched uranium reserve in IAEA control upon. There is no condition to those who will draw from that bank will forgo in the future enrichment. The only condition is that the country has to be in compliance with its safeguards undertakings.

Camilo Reyes: -Alright. Thank you very much. I would say that, obviously, a very important aspect of the transfer of science and technology, which is included in paragraph 2 of article 4 of the Treaty, has to do with education, capacity, and I think that somehow it is being done. The problem again is that public opinion in a large number of NPT concrete member states simply don't know; they simply ignore the fact that the possibilities of international cooperation for transfer of this very important technology is available. So I think again that there is a very good opportunity for the Agency and, obviously, a very good opportunity for the upcoming Review Conference to enhance and develop that possibility. I think it is somehow being done, but again the NPT has -generally speaking- a program that when you look at it you always have arguments to say "things are being done", or the glass is half full or half empty.

Then, regarding the possibility of acquiring material, so that all countries can be sure that they will have the material needed, I think that the nuclear fuel cycle issue has to be addressed and, obviously, the multilateral possibilities that were analyzed in the interesting proposals that we knew of -well, we knew about them before, but analyzed only the day before yesterday-. I think that regions have a lot to do about them and a lot to say about them, and that we should be able of -at least from our region- building a new proposal, regarding that procedure. It is not going to be easy, but at least it would be -from what I

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understand- the first one to come from the demand part of the international community, while the other twelve have been presented for the supply part of the international community. Thank you.

Odilon Marcuzzo do Canto: Well I don't have much to add to what Ambassador Labbé said. I am grateful for his presentation, it was very clear and I learned very much. If I had to give an opinion concerning the international proposals, yesterday we listened the presentation of Yury (he clarified us about the twelve proposals), the same number of twelve proposals speaks of an intention to cover the nonproliferation needs but it's clear that there is an economic interest of each group embedded on them.

Odair Dias Gonçalves: -If I have correctly understood a thought common to all the panelists that the principle of no free lunch is not completely true, at least. [with humor]. Questions?

Member of the public: -I've listened very carefully to what Dr. Labbé said, and I'm afraid the way he has expressed has quarter twice articles from the NPT that might be misleading and I know that is not intentional. But when you mention the article ten and right of states to withdraw from the NPT, if the state decides that extraordinary events have occurred, the text says "events related to the subject matter of this Treaty," and this is something important because, otherwise, you give the impression that "Okay, you're going into Treaty, and then we can withdraw whenever you want." I think it's not what you wanted to say. And the other thing: when you called article 4 and the inalienable right, it is also subject to complying with article 1 and 2 of the Treaty, which also is very significant. I just wanted to call your attention that the way you expressed it could be misinterpreted. Thank you.

Alfredo Labbé: -Thank you. Well, you know, when coming to interpretation, there are always schools of thought. And, at a time in the diplomatic history of my country, we decided to become members of the "Non Aligned Movement" and, when participating in meetings of that movement, I have realized that you, in fact, pay your sins in your life. There are certain avenues of interpretation that will emphasize elements in a different way. I would agree -in fact, I do agree- with the notion that no state can benefit from one part of the Treaty failing to comply with other parts of the Treaty.

Ambassador Sergio Duarte was kind enough to invite me to chair Subsidiary Body three in the 2005 Review Conference. And there, the fact -I mean, the effort- was oriented towards increasing the political cause of withdrawing from the Treaty, but in one aspect all delegations were in agreement: that withdrawing from the Treaty is a right. Now, it is true that this jeopardy must be in connection with the subject of the Treaty. Now, the subject of the Treaty is three-fault and then you fall again in the trap of interpretation, you see? So because a state could -this is just a possibility- define a position saying "Well, I have failed in my effort of getting the support provided for in the second part of article 4," for instance. But the main point is that the qualification, or the interpretation, or the definition of the supreme interests falls upon the state party; it is up to the state party.

You have remedies, you have other things that you can do, and you have a process there, in order to convince this state party not to withdraw. But the right remains, in the case of article 4. Then, you have this legal interpretation of the notion of inalienable. If the Treaty defines it as inalienable, then it is not a granting arrival, but recognizing a pre-existing right. And there you have the case of states that are not parties to the NPT and were perfectly capable of benefiting from the peaceful and not-peaceful uses of nuclear energy. Thank you.

Odair Dias Gonçalves: -Any other questions? So I think you have been so clear that no-one has more questions about that. I walk down the floor for the last words. No last words...only first words. [with humor] Thank you very much. I think we may end the table here and I hope it was for you as good as it was for me.

Applause



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