

**Address by the Executive Secretary  
of the Preparatory Commission for the  
Comprehensive Nuclear-Test-Ban Treaty Organization**

**Mr. Tibor Tóth**

**“The CTBTO’s Contribution to Global Security  
and Disaster Mitigation”**

**Hiroshima, 7<sup>th</sup> August 2012**

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Ladies and Gentlemen,

I am thrilled to be here with you today in Hiroshima University. Meeting with you, the leaders of tomorrow, is always an inspiration. The interaction between an Organization such as the CTBTO with academics and students can only have a win-win outcome. Education has a critical role in economic and social development, which in turn, serves as a foundation for world peace. World Peace to which we all aspire.

As we meet today in the great city of Hiroshima to commemorate the events of 1945, we must all work to achieve one goal: never again. Never again should any people, anywhere, at any time have to suffer what the people of Hiroshima had to suffer. Never again. We must do everything in our power.

Today, I would like to tell you how the CTBTO is ensuring that we achieve this goal. I will tell you about the contribution of the CTBT to global security, and ridding the world of

nuclear weapons. I will also tell you why I think you should be part of this ambitious endeavour.

One year after the Great East Japan Earthquake disaster, demand for nuclear energy in the whole world remains unchanged. As nuclear capabilities spread, proliferation and security dangers follow, including nuclear terrorism. According to the OECD, global energy demand will rise by 53% by 2030, with some 70% of that increase coming from developing countries. Some 60 countries have turned to the IAEA for guidance as they consider nuclear energy as the solution to their growing energy needs. According to the IAEA, there are 116 reactors in operation in Asia today. 40 plants are under construction. 94 more plants are planned. This is the inescapable reality. The world has to address the safety, security, and non-proliferation concerns of this new reality.

Since 1945, we had as much as 500 nuclear weapon tests on average in every decade till 1996. The world lived under the legacy of possible nuclear war. In response, scientists, policy makers, and members of civil society have developed the non-proliferation and disarmament regime: a structure of treaties, agreements and instruments that have systematically strengthened international peace and security.

The CTBT is a pillar of this nuclear non-proliferation and disarmament regime. Our mission is to outlaw nuclear weapons tests. During the last 10 years, the CTBTO managed to push back the genie of nuclear weapons and tests back in the bottle.

The genie used to have two thousands heads. Each new head grew with each of the two thousand nuclear explosions we witnessed in the 50 years between 1945 and 1996 when the Treaty was born. Imagine that every one of these weapons was a potential inferno like the ones unleashed on Hiroshima and Nagasaki. One of these tests, the 1961 tsar bomb, was 4000 times more powerful than the one dropped here in Hiroshima.

Since the CTBT was adopted in 1996, the genie has virtually been pushed back into the bottle. Instead of the 400 explosions a decade that we witnessed since 1945, there were only two tests in the last decade. Two test explosions by North Korea. Two too many. Until we seal the bottle once and for all, until we bring the Treaty into force, none of us can feel safe.

But there is reason for optimism. The Treaty enjoys growing political support. Today, 183 countries have signed the Treaty. 157 states have ratified, representing a threefold

increase in ratifications. But for the Treaty to enter into force, the signature and ratification of the remaining eight Annex 2 states is still required.

While the CTBT has still not entered into force, it serves as an important confidence building measure. It provides a forum to engage on complex verification issues in a multilateral setting. The CTBTO demonstrates that politically and scientifically complex multilateral verification is possible, and that it does work.

The CTBT and its verification regime embody the principles of democracy and transparency. Part of the verification regime of the CTBTO, the International Monitoring System or IMS, gathers data around the globe and around the clock. Around the globe around the clock, the data are shared with 1,300 institutions in 120 countries. Made up of 337 monitoring facilities and 250 communication assets, the system operates at the cutting edge of scientific knowledge. The system is unprecedented in its global reach. It is a joint venture for strengthening international peace and security.

This is the reason why you are invited to become a partner in a mission where the world puts an end to nuclear explosions, before nuclear explosions put an end to the world.

Ladies and Gentlemen,

The Great East Japan Earthquake 11 March 2011 was a truly momentous tragedy. It was a tragic milestone. Some twenty thousand people lost their lives that day from the ensuing Tsunami. It shattered the lives of thousands who lost their loved ones, or had to watch the 15-meter waves wash away everything in their way. The damages are estimated at \$380 billion.

As if this wasn't enough, the waves ravaged the Fukushima Daiichi power plant. The core of three of the six reactors went into meltdown, contaminating both the atmosphere and the sea. It is estimated that some 100,000 people cannot return to their homes in that area. Certain parts of the region will remain uninhabitable for some 30 years. It will take a further 30 years to ensure the safe decommissioning of the 6 reactors. This is a very heavy burden for any one people to carry.

The tragic events in Japan of March 11, 2011 demonstrates the importance of mitigating natural as well as man-made disasters. These events proved the true value of the

international community's investment in the CTBTO's monitoring system. The Fukushima disaster reminded us of the dramatic relevance of each and every one of these systems.

The IMS is a system of systems. It displays a range of technical components: seismic, hydro-acoustic, infrasound, radio-nuclide/noble gas, atmospheric transport modeling.

These tragic events triggered all of the monitoring technologies; they served as a stress-test for the system as a whole: The IMS seismic stations detected the magnitude 9 earthquake and its several thousand aftershocks. Hydroacoustic stations detected the rupture forming under the sea, a rupture that became the tragic Tsunami. There were infrasound detections showing the explosions in the Fukushima nuclear power plant. Subsequent radioactivity measurements in all the particulate and noble gas stations in the northern hemisphere were made. Atmospheric transport modeling played an important role on the first day of the incident in order to predict which countries were going to be affected by the release. We were predicting where the radioactive dispersion would go in the following 72 hours. Our predictions were correct 95 per cent of the time.

The lesson from this experience is clear: the accidental release of radionuclides and noble gases are large-system issues. They require a global response. CTBT verification technology is part and parcel of providing this response. A multi-technology global platform provides important value-added benefits. The speed, reliability and quality of the tsunami warning information generated by the system are unique. This system is up to 180 seconds faster than the second comparable international system. The system was providing radionuclide noble gas releases measurement for nearly 100 isotopes in some 100 locations around the globe. Everything was shared with everyone. The data and the information and the technical advice were shared with all the countries and institutions which had asked for it. This is a supranational system; a system of systems which is working seamlessly as a multi-layered platform of technology.

These are some of the reasons why you have to be part - probably it is difficult to say be part of the solution on disasters - but at least be part of the mitigation and reduction the risks of future disasters.

Ladies and Gentlemen,

We in the CTBTO firmly believe in the synergy between diplomacy, academia, research and education on the one hand, and the practice of disarmament and non-

proliferation on the other. The CTBT, the CTBTO and its three pillared verification system are very much the product of the close interaction and association between diplomacy, academia, and science and technology.

We are working at the intersection of two challenges: Nuclear weapons which are the most destructive devices mankind has created; and complex disasters, which are the most dangerous forces nature or human error can unleash. The Treaty and the Organisation and its staff provide solutions to face these challenges. Solutions based on knowledge, and through the use of the best technologies. We have to empower the organisation, and we have to empower all countries, all institutions and you, the new generation to make the best of what we can offer.

There is an urgency to invest in the next generation of disarmament and non-proliferation specialists by increasing the awareness and understanding of the international non-proliferation framework. This urgency is a key driver of the Commission's capacity development initiative, which was launched in October 2010.

The Capacity Development Initiative was launched with the objective of training and educating the next generation of experts on the CTBT. The capacity development strategy is based on the recognition that building and maintaining the necessary capacity to deal with the technical, scientific, political, and legal challenges facing the multilateral non-proliferation and disarmament regime is of critical importance.

We are doing it as a globally sharing organisation; everyone gets everything we have. The CTBTO produces and shares global public goods, goods of outlawing explosions and mitigating disasters. These public goods belong to all countries, all institutions and they belong to all humankind. These public goods can most efficiently be produced on a global scale through a globally sharing organisation like ours. It is a bringing together mass education combined with a wide alliance of international organisations and academia, hopefully the business community as well. In 2012 we hope to train more than 1000 experts, including up to 300 women, which is the size of our organisation. We are bringing together all these ingredients through innovative mobile platforms, including internet based like the iTunes University.

I invite you all to make full use of these training opportunities. They are free of charge, and cater to meet various needs of specialization.

Ladies and Gentlemen

I would like to conclude with a warning. In the field of nuclear security, we may not have the luxury of retrospective analysis and ask the question of “what went wrong?”.

We need to make substantive progress towards a world without nuclear weapons. The road to Zero requires the widest possible coalitions and that’s where the NWS, NNWS, IGOs, NGOs and broader academic community and civil society need to cooperate.

I believe we are at a crossroads. I hope that we will not miss this opportunity to give you, the young generations, a safer more secure world.

Thank you