

CTBTO-CENESS RESEARCH FELLOWSHIP

 **A Collection of
Fellowship Research Papers**



**Funded by the People's
Republic of China**

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August 2023

ACKNOWLEDGEMENTS

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This document was produced with the financial assistance of the People's Republic of China. The views expressed herein can in no way be taken to reflect the official opinion of the People's Republic of China.

About the CTBTO-CENESS Research Fellowship

CTBTO-CENESS Research Fellowship was launched in 2021 to help promising young scholars to build their professional network by giving them access to top professionals and experts in the field of nuclear disarmament and nonproliferation. The Fellows were invited to attend webinar series lectured by prominent experts and diplomats, to conduct research on CTBT, nonproliferation and disarmament issues, and to engage with distinguished scholars and practitioners.

About the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization

The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) was established in 1996 with its seat in Vienna. Its main tasks are the promotion of the Comprehensive Nuclear-Test-Ban Treaty and the build-up of the verification regime so that it is operational when the Treaty enters into force. It is headed by the Executive Secretary, Dr. Robert Floyd. CTBTO Youth Group (CYG), launched in January 2016, is open to students and young professionals dedicated to achieving the entry into force and universalization of the CTBT. By the end of 2022, the Group had grown to nearly 1300 members coming from over 125 countries.

About the Center for Energy and Security Studies

The Center for Energy and Security Studies (CENESS) is an independent, non-governmental think-tank established in 2009. Headquartered in Moscow, the main goal of CENESS is to promote independent, unbiased, systematic, and professional analyses related to nuclear nonproliferation, arms control and atomic energy. The flagship project of CENESS is the Moscow Nonproliferation Conference and its New Generation Experts Segment organized averagely every 30 months. The Director of the Center is Anton Khlopkov.

NOTE

The views expressed in the publication are the sole responsibility of the individual authors. They do not necessary reflect the views or opinions of the CTBTO, CENESS, its staff members, sponsors and partners of the program.

TABLE OF CONTENTS

14	WHY DID I DECIDE TO APPLY FOR THE CTBTO-CENESS RESEARCH FELLOWSHIP AND WHAT DOES THE PROGRAM MEAN FOR MY CAREER? Abdulrahman Abdi Haji Taher (Somalia)
16	UNDERSTANDING THE ROLE AND IMPACT OF THE CTBT IN THE CHANGING WORLD Virginia Bertuzzi (Italy), Phantitra (Ariel) Phuphaphantakarn (Thailand)
20	25TH ANNIVERSARY OF THE UN GENERAL ASSEMBLY RESOLUTION IN SUPPORT OF THE CTBT: TOWARDS UNANIMOUS ADOPTION IN 2024 Sweta Basak (India), Shinichi Hirao (Japan), Reem Mohamed (Syria), Martin Reggi (USA/Italy)
26	CTBT AT THE 2026 NPT REVIEW CONFERENCE: GOALS AND LANGUAGE Ahmed Elsabagh (Egypt), Anastasiia Kulikova (Russia), Lucia Madero Murillo (Mexico), Doniyor Mutalov (Uzbekistan)
41	IMAGINING THE DAY AFTER US RATIFICATION OF THE CTBT Samran Ali (Pakistan), Aayushi Sharma (India), Simon Yin (China)
48	UNDERSTANDING NON-ANNEX 2 STATES: FACTORS WHICH IMPEDE JOINING THE CTBT Ian Fleming Zhou (South Africa), Alice Saltini (Italy)
58	IMS STATIONS IN THE MIDDLE EAST AS A REGIONAL CONFIDENCE-BUILDING MEASURE Afra Abdelrahman Mohammed Bakhit (Sudan), Elif Erginyavuz (Turkey), Youssef Hosny Mohamed (Egypt), Queiroz E. Portorreal Alcántara (Dominican Republic)
63	PROSPECTS FOR ENGAGING THE DPRK ON THE CTBT: POTENTIAL APPROACHES Ruairi Devereaux-Heddon (Ireland), Palwasha Khan (Pakistan), Yechan Moon (Republic of Korea), Alexandra Serova (Russia)
68	ROLE OF CIVIL SOCIETY IN PROMOTING CTBT ENTRY INTO FORCE Ekaterina Poriadina (Russia), Juliana Posada (Colombia), Andrej Stefanovic (Serbia), Wei Zhang (China)

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Why Did I Decide to Apply for the CTBTO-CENESS Research Fellowship and What Does the Program Mean for My Career?

■ Abdulrahman Abdi Haji Taher

INTRODUCTION

In August 2022, I was selected to participate in the international Research Fellowship program organized by the Center for Energy and Security Studies (CENESS) and the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO). Over the next 5 months, I became actively involved in the Fellowship activities alongside 24 other young experts and greatly enjoyed the opportunities that the program offered me as a nuclear engineering student from Somalia who wants to build a sustainable career in this field.

In this essay, I would like to briefly outline my professional journey up to this point, describe my personal experience with the Fellowship, and share my opinion on why I consider this program to be an excellent opportunity for anyone who is interested in developing their skills and knowledge in the areas of nuclear nonproliferation, disarmament, or peaceful uses of nuclear energy.

BACKGROUND

Coming originally from Somalia, I have received my undergraduate degree in Chemical Engineering from the Jazan University in Saudi Arabia, where my main research interest concerned the processes of contaminated water treatment. After graduating, I worked in a pharmaceutical industry, mainly dealing with quality control issues. One of the aspects that I enjoyed the most about my position was the realization that my work contributed directly to the improvement of people's lives.

However, I was also extremely concerned about the fact that, like many other developing African countries, Somalia faces considerable challenges in its energy sector. A fragmented grid with low installed capacity consisting mainly of diesel power stations results in inefficient and expensive power supply which is inadequate to satisfy the growing demand for electricity. This situation presents one of the most significant roadblocks on the way to economic progress in my country today.

According to available data, Somalia has sizable uranium reserves and I strongly believe that the introduction of nuclear power in the power generation mix can be an efficient, sustainable, and green solution to the continued energy crisis. This is exactly why I have decided to enroll in the Nuclear Engineering master's degree program at the Polytechnic University of Milan, where I am currently focusing on studying nuclear power plants, relevant technologies, and various aspects of the next generation of nuclear power reactors.

THE CTBTO-CENESS FELLOWSHIP EXPERIENCE

When I first heard about the CTBTO-CENESS Research Fellowship, I only had a vague idea of what the goal of CTBTO is and what kind of challenges the nonproliferation regime is facing nowadays. The amount of information on the CTBTO and the opportunities it offers to students in my country are quite limited. In the developing countries like Somalia, most people are not aware about the objective of putting a stop to nuclear testing. Limited resources prevent the government and civil society from fully engaging in nuclear nonproliferation and disarmament issues both internationally and domestically.

Nevertheless, I was strongly encouraged to apply for the 2022 Fellowship program by my friend Tibyan Mustafa. Tibyan is from Sudan, currently a fellow student at the Polytechnic University of Milan and was herself a research fellow in the program in 2021. Her stories about the Fellowship have convinced me that the program is not only extremely important, but also provides significant benefits for young professionals in the nuclear field, including for their career development.

Overall, my experience with the Fellowship was very fulfilling and comprehensive. The lecture course covered a wide range of topics concerning the role of CTBT in the global nonproliferation regime, potential ways of facilitating the Treaty's entry into force, national experience with its ratification, and CTBT-related regional issues. We had a chance to engage in open and candid discussions with leading international experts and professionals in the field of nonproliferation and arms control. It was a once-in-a-life-time experience to have sessions with CTBTO Executive Secretary Dr. Robert Floyd and Under-Secretary-General and High Representative for Disarmament Affairs Izumi Nakamitsu. Another important feature for me was a well-balanced workload. Many of the fellows, including myself, are currently studying and working part time. I believe that the lecture schedule made it easy to plan and fully engage in the course.

Besides receiving insights on critical issues facing the nonproliferation regime and extending my professional network, the Fellowship is an amazing addition to the resume for everyone following a career path in this field.

CONCLUSION

While prior to the start of the CTBTO-CENESS Research Fellowship I lacked knowledge about the CTBT and related nonproliferation issues, after finishing the program, I am extremely passionate about the mission of the CTBTO. Furthermore, I feel confident that the knowledge that I have received allows me to work on raising awareness and advocating for a world without nuclear testing.

I would most definitely recommend the CTBTO-CENESS Research Fellowship to anyone who is enthusiastic about international security issues and making the world a safer place. I think that it's a great opportunity for networking and familiarizing yourself with critical nuclear issues, especially if one plans to build a career in the nuclear field. I'm grateful to CENESS and the CTBTO Youth Group for providing me with this opportunity and hope that this essay will be helpful to who are contemplating about participating in the program. I hope that as more and more people learn about the CTBTO, they will join me in becoming advocates for peaceful uses of nuclear energy, disarmament, and nuclear nonproliferation.

Understanding the Role and Impact of the CTBT in the Changing World

■ Virginia Bertuzzi ■ Phantitra (Ariel) Phuphaphantakarn

ABSTRACT

The entry into force of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) has been on the international agenda for years. The majority of the international community recognizes the centrality of the Treaty in stopping nuclear proliferation, both in its horizontal and vertical dimensions. However, up until this day, the Treaty has not entered into force. Despite the efforts of the international community to further the ratification, the reluctance of some Annex 2 States to do so has made the CTBT live in “the shadow”. This paper reflects on the current and future contribution of the CTBT to the ever-changing world and international scenario, arguing that it is still a vital Treaty for arms control and non-proliferation architecture.

Although still not in force, the Treaty, has already contributed as a strong norm and an effective tool to reducing nuclear risks in the changing world. In the conditions of growing multipolar competition, CTBT promotes enhancing trust among nations by acting as one of confidence-building measures. This arises from the interplay between the exceptionally large number of states that have signed and ratified the Treaty, along with the international legal norm that requires signatory states to refrain from actions that undermine the Treaty’s intended goals, even when they are not obligated by all of its provisions.

INTRODUCTION

Being often called “Success Story” the CTBT has made its contribution towards a safer world through its monitoring system. Although the Treaty has yet to enter into force, the value of the advancing technology already provided by the treaty-envisaged International Monitoring System (IMS) has brought various opportunities for international collaborations.¹

Since the CTBT opened for signature in 1996, the world has been in constant transition affecting among other things nuclear deterrence and non-proliferation architecture. Tensions among great powers are on the rise, with more players and advanced technology. These tensions among nuclear-weapon states brought along the international conflict the chances of escalation to nuclear war.²

This article will review the current status of the CTBT and will examine the significance of the Treaty within the evolving global landscape, encompassing aspects like multipolar nuclear competition and the emergence of the Third Nuclear Age.³

¹ Robert Floyd, Izumi Nakamitsu, Kausea Natano “The Comprehensive Nuclear-Test-Ban Treaty: A Success Story Ready for Completion”, Nuclear Threat Initiative, October 10, 2022, <<https://www.nti.org/atomic-pulse/the-comprehensive-nuclear-test-ban-treaty-a-success-story-ready-for-completion/>, accessed July 27, 2023>.

² Maximilian Hoell, “The Comprehensive Nuclear-Test-Ban Treaty is in danger: Here’s how to save it”, European Leadership Network, August 1, 2023, <<https://www.jstor.org/stable/resrep22111>, accessed July 27, 2023>.

³ Rakesh Sood, “Why the CTBT Remains an Elusive Goal”, ORF Issue Brief 161, October 27, 2016, <<https://www.orfonline.org/research/ctbt-remains-an-elusive-goal/>, accessed July 27, 2023>.

UNDERSTANDING THE PAST AND OBSERVING THE PRESENT: SCIENCE BEYOND POLITICS

Today, almost 27 years after the CTBT's successful negotiations on the one hand, and the failure to bring it in force, on the other, it is logical to ask ourselves if there is still hope and optimism for the Treaty. Indeed, without the ratifications of all Annex 2 States, it lives in a limbo that does not allow the Treaty to become legally binding. These circumstances can easily lead to gloomy views. Some of the risks that may result in CTBT losing its relevance, come from wider political factors. For instance, during Trump's presidency, there were speculations on the US withdrawing its signature.⁴ Although it did not happen, the mere possibility of such an action could trigger the demise of the Treaty.

Despite some pessimistic voices, there is still hope that the CTBT will have its momentum again. Strong international support of the Treaty demonstrated in August 2022 at the NPT Review Conference in New York is a sign that the Member States believe in the legal norm that this Treaty creates. The CTBT also creates a pillar for nuclear disarmament by building a solid verification regime that promotes transparency, trust, and cooperation among its Member States. Yet, the full positive potential of the Treaty can only become functional after its entry into force.

The civilian applications of the IMS data and cooperation with states' national authorities contribute to sustaining scientific research and international cooperation. In particular, in the era of global environmental awareness, the CTBT verification regime provides essential data for scientists worldwide, who are able to detect the effects of climate change and to employ this data for tsunami warning purposes. Now more than ever, there is enormous attention from public opinion and media on climate change and the environment, and it is well-studied how nuclear tests and explosions in the past had contributed to the contamination of certain regions of the world – French Polynesia and Kazakhstan test sites are just some examples.

PROSPECTING THE FUTURE: CTBT'S ROLE IN THE NEW NUCLEAR AGE

By reviewing the past and observing the present, we learned that, although faced with various challenges over time, the CTBT doesn't lose its relevance to global security and disarmament. However, the emerging nuclear trends and deteriorating international security environment⁵ create challenges for many established non-proliferation instruments, including the CTBT.

Since the world was introduced to the first atomic bomb in 1945, it had gone through an evolution, both in terms of the technology of producing nuclear weapons and establishing legal and political frameworks to address nuclear risks. For both academic and policy analysis purposes, such evolution was separated into a time period referred to as the "Nuclear Age" and ever since the end of WWII the world had arguably been through approximately two different eras⁶ and it is now arriving at the Third Nuclear Age. A prevailing viewpoint implies

⁴ Andreas Persbo, "Will the Trump administration's accusations doom the nuclear test ban treaty?", *Bulletin of the Atomic Scientists*, May 18, 2020, < <https://thebulletin.org/2020/05/will-the-trump-administrations-accusations-doom-the-nuclear-test-ban-treaty/>, accessed July 27, 2023>.

⁵ "Disarmament Machinery Impasse 'Cause and Consequence' of Competing Strategic Priorities, Ruthless Pursuit of Military Advantage, First Committee Told", United Nations, October 27, 2022, < <https://press.un.org/en/2022/gadis3700.doc.htm>, accessed July 27, 2023>.

⁶ Paul Bracken, "The Second Nuclear Age: Strategy, Danger, and the New Power Politics" Manhattan, NYC: St. Martin's Griffin, 2013.

that the trajectory of the Third Nuclear Age will be influenced significantly by two pivotal factors: the “multipolar nuclear competition” and the emergence of new technologies.⁷

Starting with the strategic arms race among superpowers in the First Nuclear Age (spanning from 1945 to the end of the Cold War) and the emergence of nuclear-capable regional powers (such as India, Pakistan and North Korea) during the Second Nuclear Age (post-Cold War), we have arrived in a nuclear age where the nuclear arms race is intensified, driven by an increased number of participants and the level of strategic rivalry.⁸

In this scenario in which there are more actors, challenges are posed for the global non-proliferation norms and regimes. The growing number of nuclear-armed actors resulted in a breakdown of unity regarding nuclear non-proliferation norms and measures. Instead of presenting a united and balanced stance against aiding non-nuclear weapon states with nuclear weapons-related technology and upholding the non-proliferation norm, states possessing nuclear technology might prioritize their own financial or strategic interests, offering assistance and cooperation to requesting non-nuclear weapon states. This scenario was relatively less likely when the global order revolved around the bipolar model in which both superpowers were capable of carrying significant impact on the non-proliferation regime such as demanding certain countries with the nuclear aspirations to not acquire nuclear weapons.⁹

In the current geopolitical realities the CTBT serves as an important contributor to a safer world by supporting collaborations among states. Treaty’s verification system helps to build confidence among states amidst the accelerating nuclear weapons arms race and its proliferation consequences.¹⁰

OTHER THREATS TO THE NON-PROLIFERATION REGIME

Beyond the challenges brought by the multipolarization, the rapidly advancing military technology has significantly impacted the nuclear deterrence both through the evolution of nuclear weapons-related doctrines and additional risks of nuclear escalation.¹¹

The Third Nuclear Age, which includes both advancing technology and formation of multipolar nuclear order, also gives rise to concerns regarding the misuse of nuclear materials and technologies.¹² For example, the possibility of exercising the provision of paragraph 14 of INFCIRC/153 on non-application of safeguards to nuclear material to be used in non-peaceful

⁷ Andrew Futter and Benjamin Zala, “Strategic non-nuclear weapons and the onset of a Third Nuclear Age”, *European Journal of International Security*, Vol. 6, No. 3, 2021, p. 257-277.

⁸ Caitlin Talmadge, “Multipolar Deterrence in the Emerging Nuclear Era,” in Vipin Narang and Scott D. Sagan, eds., *The Fragile Balance of Terror: Deterrence in the New Nuclear Age*, Ithaca, NYC: Cornell University Press, 2023, pp. 13-38.

⁹ Rebecca Davis Gibbons and Stephen Herzog, “Durable Institution under Fire? the NPT Confronts Emerging Multipolarity”, *Contemporary Security Policy*, Vol. 43, No. 1, 2021, pp. 50-79.

¹⁰ Simon J. A. Mason and Matthias Siegfried, “Confidence Building Measures (CBMs) in Peace Processes”, *African Union and the Centre for Humanitarian Dialogue*, 2013, pp. 57-77.

¹¹ James M. Acton, “Escalation through Entanglement: How the Vulnerability of Command-and-Control Systems Raises the Risks of an Inadvertent Nuclear War,” *International Security*, Vol. 43, No. 1, 2018, pp. 56–99.

¹² “IAEA and the Non-Proliferation Treaty”, IAEA, <<https://www.iaea.org/topics/non-proliferation-treaty>, accessed July 27, 2023>

activities¹³, sometimes referred to as “NPT loophole”¹⁴, may trigger concerns regarding the possibility of certain nuclear technologies and materials being put into military use.¹⁵ The case of the AUKUS partnership¹⁶ is a good example of the first time such a “loophole” being exploited.¹⁷

CONCLUSION

The CTBT has already played a notably positive role in the past decades, contributing to a safer world. As the transition to the new global order is accelerating, the Treaty, if brought into force, can become a critical factor in preventing degradation of the non-proliferation regime. For the confidence-building potential of the CTBT to be fully realized, the Treaty must be brought into force as soon as possible.

¹³ “The structure and content of agreements between the Agency and States required in connection with the Treaty on the Non-Proliferation of Nuclear Weapons,” INFCIRC/153/Rev2, IAEA, June 1972.

¹⁴ Ibid.

¹⁵ Tariq Rauf, “The Challenge of Nuclear-Powered Submarines to IAEA Safeguards,” *Troubled Waters*, Melbourne, Australia: ICAN Australia, 2022, <<https://icanw.org.au/troubled-waters/>, accessed July 27, 2023>.

¹⁶ “Joint Leaders Statement on AUKUS”, The White House, September 15, 2021, <<https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/15/joint-leaders-statement-on-aukus/>, accessed July 27, 2023>.

¹⁷ James M. Acton, “Why the AUKUS Submarine Deal Is Bad for Nonproliferation—And What to Do About It,” September 21, 2021, <<https://carnegieendowment.org/2021/09/21/why-aukus-submarine-deal-is-bad-for-nonproliferation-and-what-to-do-about-it-pub-85399>, accessed July 27, 2023>.

25th Anniversary of the UN General Assembly Resolution in Support of the CTBT: Towards Unanimous Adoption in 2024

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ABSTRACT

Over the past 20 years, the United Nations General Assembly (UNGA) has been regularly adopting resolutions in support of the CTBT. On each occasion, these resolutions were adopted by overwhelming majority, but never did they master unanimous support: each time a small group of countries consistently voted against or chose to abstain. Unanimous adoption of a UNGA resolution supporting the CTBT would be beneficial in terms of expediting the Treaty's entry into force. Analyzing the voting patterns of the United States of America, the Democratic People's Republic of Korea and India can provide valuable insights into their motivations and identify avenues for unanimous adoption of a UNGA resolution in support of the CTBT. The voting patterns of the U.S. suggests that its support revolves around domestic political agendas. While the DPRK has historical shown a lack of support, recent developments suggest a degree of willingness to engage. Whereas India's repeated abstentions have been attributed to concerns related to the content of the Treaty, in particular in relation to Article XIV. While the task remains challenging, there may exist innovative possibilities to achieve unanimous adoption of the UNGA resolution by 2024, which are explored further in this paper.

INTRODUCTION

In 1999 the United Nations General Assembly adopted resolution A/RES/54/63¹ supporting the Comprehensive Nuclear-Test-Ban Treaty (CTBT), the first of 23² resolutions between 1999 and 2022 which were all approved by a sweeping majority of votes, but none by consensus. The year 2024 marks 25 years since the first UNGA resolution supporting the CTBT. These resolutions, supporting the signature and ratification of the CTBT, its entry into force, and maintaining a moratorium on nuclear weapon test explosions or any other nuclear explosions, have been updated and modified to meet the perceived international and regional challenges and requirements of the time they were drafted and adopted.

It might be appropriate to note, that the adoption of the relevant UNGA resolution by consensus does not automatically translate itself into accelerated entry into force of the CTBT.³ Yet, it can generate a number of Treaty-positive signals, perception and commitments, therefore making it worth exploring. Having all 193 United Nations members unanimously agree on supporting the CTBT and the moratorium on nuclear testing would demonstrate

¹ United Nations General Assembly Resolution, A/RES/54/63, December 1, 1999.

² See the Annex for a full list of UNGA resolutions supporting the CTBT from 1999 to 2022.

³ United Nations, How Decisions are Made at the UN. <<https://www.un.org/en/model-united-nations/how-decisions-are-made-un>, accessed July 11, 2023>.

a global agreement on the fundamental objective of a nuclear test ban.

Taking a general look at the voting records for these resolutions, a pattern of objection and abstention can be identified. The Democratic People's Republic of Korea (DPRK) and the United States (U.S.) have voted against these resolutions, with the DPRK voting against fifteen times and the U.S. eight times out of twenty-two. A handful of other countries have systematically abstained: India, Mauritius, and Syria. This paper tries to examine the main internal and external factors influencing the three main players here – India, DPRK, and the U.S. – that have stood in the way of consensus so far and look into approaches that could result in consensus by the year 2024.

UNITED STATES OF AMERICA

Initial steps by the U.S. in the General Assembly indicated strong support for the CTBT. President Clinton appeared at the United Nation Headquarters for the signing ceremony⁴, with the U.S. becoming the first signatory to the Treaty on 23 September 1996.⁵

However, the treaty process in the U.S. calls that the President “shall have Power, by and with the Advice and Consent of the Senate, to make Treaties, provided two-thirds of the Senators present concur”.⁶ Clinton indicated he would send the Treaty to the Senate for ratification; “Our common goal should be to enter the CTBT into force as soon as possible, and I ask for all of you to support that goal.”⁷ The CTBT failed to reach the threshold required during Clinton’s administration.⁸

In the post-Clinton era, the issue of ratification of the CTBT in the U.S. has largely been a partisan one, with Democratic presidential administrations being supportive and Republicans being opposed. This largely explains the voting patterns of the U.S. related to UNGA Resolutions in support of the CTBT with the U.S. only voting in favor from 1999-2000, 2009-2016, and 2021-2022 during the Democratic administrations of Clinton, Obama, and Biden. Therefore, as history shows, adoption of a UNGA Resolution in support of the CTBT is of course possible and has occurred up to now solely under a Democratic presidential administration. With the Biden administration in power through at least January 2025, it seems likely the U.S. will vote once again for a UNGA Resolution in support of the CTBT.⁹

DEMOCRATIC PEOPLE’S REPUBLIC OF KOREA

The DPRK did not take part in the voting process between 1999-2005 and 2007-2008, and it voted against the resolution over the years. However, it is worth noting that it was closer than ever to supporting the resolution in 2018.

⁴ UN Audiovisual Library, President W. Clinton Visits UN Headquarters for CTBTO Signing. <<https://www.unmultimedia.org/avlibrary/asset/2218/2218793/>, accessed July 11, 2023>.

⁵ CTBTO, Status of Signature and Ratification. <<https://www.ctbto.org/our-mission/states-signatories>, accessed July 11, 2023>.

⁶ U.S. Constitution, Article II, section 2.

⁷ President Bill Clinton, Remarks to the 52nd Session of the UN General Assembly September 22, 1997. <<https://1997-2001.state.gov/www/global/arms/ctbtpage/president/excerpt.html>, accessed July 11, 2023>.

⁸ Helen Dewar, “Senate Rejects Test Ban Treaty,” Washington Post, October 14, 1999, <<https://www.washingtonpost.com/wp-srv/politics/daily/oct99/senate14.htm>, accessed July 11, 2023>.

⁹ U.S. Department of State, “Remarks on the Conference on Facilitating the Entry into Force of the Comprehensive Nuclear Test Ban Treaty,” September 23, 2021. <<https://www.state.gov/remarks-to-the-conference-on-facilitating-the-entry-into-force-of-the-comprehensive-nuclear-test-ban-treaty/>, accessed July 11, 2023>.

For the DPRK, not supporting these resolutions stems from its perceived security considerations, including its intention to uphold a military-political balance on the Korean Peninsula.¹⁰ As a result, there is reluctance to consider nuclear arms control in isolation from other measures to normalize the situation on the peninsula.

Nonetheless, in 2018, the DPRK expressed interest in joining arms control efforts. In June of that year, the DPRK leader Kim Jong Un met with U.S. President Donald Trump in Singapore. Two months before the meeting, the DPRK had announced that it would suspend nuclear and long-range missile tests,¹¹ and its ambassador to the Conference on Disarmament further reiterated this, saying that the DPRK was ready to join international efforts for a test ban.¹² In the same month, the DPRK announced dismantlement of its Punggye-ri testing site.¹³ Also in 2018, the DPRK suggested changes to a draft of the UNGA resolution supporting CTBT, which was prepared by Australia.¹⁴

The DPRK proposed three changes: to exclude references to the past UN resolutions that condemned the DPRK actions; to remove sentences regarding the DPRK's past nuclear tests; to mention recent positive developments in Northeast Asia, including the DPRK's summit meetings with the U.S. and the Republic of Korea.

Australia was willing to consent solely to the latter condition as a symbolic statement, but the other two conditions were not accepted. For the DPRK, not taking all three conditions as a package was a deal breaker. In the end, the DPRK voted against the resolution, saying that it could not accept a resolution which condemned their own country.¹⁵ Despite the result, this does show that the DPRK remains, to some extent, flexible in terms of the resolution and open to taking part in negotiations.

The second U.S.-DPRK summit in Hanoi in 2019 did not deliver the hoped-for outcome. Since then, Kim Jong Un has announced that his country no longer felt bound by its self-imposed moratorium on testing nuclear weapons¹⁶ and the DPRK has returned to its "power-for-power" strategy, including the resumption of missile tests.¹⁷

¹⁰ Sangsoo Lee & Riccardo Villa, "North Korea's Signing on Nuclear Weapons and Negotiations, 38 North", December 21, 2021, <<https://www.38north.org/2021/12/north-koreas-signaling-on-nuclear-weapons-and-negotiations/>, accessed July 11, 2023>.

¹¹ Soyong Kim & Cynthia Kim, "North Korea Says Will Stop Nuclear Tests, Scraps Test Site", Reuters, April 21, 2018, <<https://www.reuters.com/article/us-northkorea-missiles-idUSKBN1HR37J>, accessed July 11, 2023>.

¹² Reuters, "North Korea Will Join Efforts for a Total Ban on Nuclear Tests," May 15, 2018, <<https://www.reuters.com/article/us-northkorea-nuclear-tests-idUSKCN1IG28E>, accessed July 11, 2023>.

¹³ David Albright, "Institute Statement on the Dismantlement of Punggye-ri," Institute for Science and International Security, May 25, 2018, <<https://isis-online.org/isis-reports/detail/institute-statement-on-the-dismantlement-of-punggye-ri/>, accessed July 11, 2023>.

¹⁴ Qiyang Niu, Haeyoon Kim & Zhaniya Mukatay, "DPRK and the CTBT: What Could Come Next after the Moratorium?" *Journal for Peace and Nuclear Disarmament*, October 10, 2022. <<https://www.tandfonline.com/doi/pdf/10.1080/25751654.2022.2133335?needAccess=true>, accessed July 11, 2023>.

¹⁵ Anton Khlopkov, Director of the Center for Energy and Security Studies, Zoom Meeting, November 22, 2022.

¹⁶ Statement attributable to the Spokesman for the Secretary-General – on the Democratic People's Republic of Korea, January 1, 2020, <<https://clck.ru/34yYoU>, accessed July 13, 2023>

¹⁷ Sangsoo Lee & Riccardo Villa, "North Korea's Signing on Nuclear Weapons and Negotiations".

INDIA

Although India has successfully maintained a voluntary, unilateral moratorium on nuclear explosive testing since its nuclear tests in 1998,¹⁸ it has abstained from voting on UNGA resolutions supporting the CTBT since 1999. India's strong objection to the CTBT was related to Article XIV that includes the entry into force clause.

The then-Prime Minister Shri Atal Bihari Vajpayee presented the government's stance on the CTBT in front of the Indian Parliament on December 15, 1998. The government's stance on the CTBT is determined by India's strategic interests and the development of a broad national consensus. Moreover, India considers the XIV Entry Into Force clause discriminatory and pressuring certain states to sign the Treaty and thus ratifying it can be seen as a sign of "surrender of national sovereignty".¹⁹ Given all what has been already mentioned, it is important to note that all UNGA resolutions since 1999 have called upon all States that have not yet signed or ratified the Treaty to sign and/or ratify it as soon as possible. Therefore, such resolutions address a fundamental concern that that India holds regarding the CTBT itself.

Another fact to be taken into consideration is the domino effect that the change in the stand of a certain State could have on others. One example is the significant effect that the U.S. Senate vote against ratification of the CTBT in 1999 had on the debate for building consensus in India at that time.²⁰

The lack of national consensus in India, political reservations, and security concerns explain why India is not supporting the CTBT. However, one should understand, that India's stance towards the CTBT was decided upon during the conclusion of negotiations and adoption of the Treaty in 1996, when the country decided to openly become a nuclear weapon possessor state and was preparing a series of nuclear tests.

Perhaps, it makes sense to explore whether India's current position could evolve, and negotiations on a UNGA resolution consensus might offer an opportunity for that.

If an attempt is made to achieve a consensus on an UNGA resolution on the CTBT and nuclear testing moratorium, its traditional key sponsors should be prepared for a genuine negotiation process and diplomatic give-and-take work (something they did not manage to accomplish in 2018, when there was a chance to engage the DPRK).

¹⁸ Statement by Harsh Vardhan Shringla Foreign Secretary of India at the UNSC meeting on "Nonproliferation of Weapons of Mass Destruction: Comprehensive Nuclear-Test-Ban Treaty", September 27, 2021.

¹⁹ Manpreet Sethi, "CTBT Exhumed: Need India Worry?", Air Power Journal Vol.4 No. 4 Winter 2009 (October-December). <<https://capsindia.org/wp-content/uploads/2022/10/Manpreet-Sethi.pdf>, accessed July 11, 2023>.

²⁰ Bharat Gopaldaswamy, "India and the Comprehensive Nuclear-Test-Ban Treaty: To Sign or not to Sign?", SIPRI, January 2010. <<https://www.sipri.org/publications/sipri-policy-briefs/india-and-comprehensive-nuclear-test-ban-treaty-sign-or-not-sign>, accessed July 11, 2023>.

CONCLUSION

It does seem challenging to obtain unanimous support for the 25th anniversary of the CTBT resolution by the year 2024, but one should not be entirely pessimistic. There are always ways to reach common grounds, and if not by 2024 then a further milestone could be aimed at such as 2026 marking the 30th anniversary of opening the CTBT for signature and 2029 marking the 30th anniversary of the first UNGA resolution in support of the CTBT.

Two main recommendations could support unanimous adoption of the CTBT-related UNGA resolutions in the future. First, functioning dialogue and negotiations among governments are key mechanisms in addressing the issue; or resorting track 1.5 diplomacy to negotiate political conditions placed by main actors. Think tanks and international organizations, such as the CTBTO and the United Nations can foster cooperation among countries and play a significant role to ensure all voices and concerns are heard and included. Second, it should be always remembered that disarmament is a long-term process. There is no good in rushing to reach consensus at the cost of important aspects of the resolutions. Unanimous adoption of a UNGA resolution supporting the CTBT is an opportunity to sort out differences and focus on the wider goal of effective arms control tools to secure the peace and prosperity of humanity. Therefore, the 25th anniversary in 2024 could be the occasion where a greater focus is put on the matter and an opportunity to bring it to the attention of all Member States to reconsider their position; although small, still a significant step towards building consensus in the near future.

When it comes to India, the DPRK, and the US, obstacles remain, but there have already been signs that it is not impossible. As for the other abstainers – Syria, Mauritius, and recently Saudi Arabia – it seems more logical to shift efforts towards these actors by finding parallel channels for bilateral consultations or new diplomatic efforts which could be used to get them on board to support the resolution.

It remains useful to refocus efforts on keeping dialogue ongoing. This, in return, could function as a tool for building confidence, developing mutual trust between nuclear and non-nuclear powers, and facilitating nuclear disarmament.

ANNEX
UNGA VOTE ON CTBT RESOLUTIONS BETWEEN 1999–2022

Ses- sion	Document Reference	For	Against	Abstentions	Notes
1999	A/RES/54/63	158	0	6 (Bhutan, India, Lebanon, Mauritius, Tanzania, Syria)	DPRK did not participate
2000	A/RES/55/41	161	0	6 (Bhutan, India, Lebanon, Mauritius, Tanzania, Syria)	DPRK did not participate
2002*	A/RES/57/100	164	1 (USA)	5 (India, Colombia, Lebanon, Mauritius, Syria)	DPRK did not participate
2003	A/RES/58/71	151	1 (USA)	4 (India, Colombia, Mauritius, Syria)	DPRK did not participate
2004	A/RES/59/109	147	1 (USA)	4 (India, Colombia, Mauritius, Syria)	DPRK did not participate
2005	A/RES/60/95	172	1 (USA)	4 (India, Colombia, Mauritius, Syria)	DPRK did not participate
2006	A/RES/61/104	172	2 (DPRK, USA)	4 (India, Colombia, Mauritius, Syria)	
2007	A/RES/63/87	176	1 (USA)	4 (India, Colombia, Mauritius, Syria)	DPRK did not participate
2008	A/RES/63/87	175	1 (USA)	3 (India, Mauritius, Syria)	DPRK did not participate
2009	A/RES/64/69	175	1 (DPRK)	3 (India, Mauritius, Syria)	
2010	A/RES/65/91	179	1 (DPRK)	3 (India, Mauritius, Syria)	
2011	A/RES/66/64	175	1 (DPRK)	3 (India, Mauritius, Syria)	
2012	A/RES/67/76	184	1 (DPRK)	3 (India, Mauritius, Syria)	
2013	A/RES/68/68	181	1 (DPRK)	3 (India, Mauritius, Syria)	
2014	A/RES/69/81	179	1 (DPRK)	3 (India, Mauritius, Syria)	
2015	A/RES/70/73	181	1 (DPRK)	3 (India, Mauritius, Syria)	
2016	A/RES/71/86	183	1 (DPRK)	3 (India, Mauritius, Syria)	
2017	A/RES/72/70	180	1 (DPRK)	4 (US, India, Mauritius, Syria)	
2018	A/RES/73/86	183	1 (DPRK)	4 (US, India, Mauritius, Syria)	
2019	A/RES/74/78	182	1 (DPRK)	4 (US, India, Mauritius, Syria)	
2020	A/RES/75/87	182	2 (DPRK, USA)	3 (India, Mauritius, Syria)	
2021	A/RES/76/66	182	1 (DPRK)	3 (India, Mauritius, Syria)	
2022	A/RES/77/94	179	1 (DPRK)	4 (India, Mauritius, Saudi Arabia, Syria)	

*No resolution was adopted in 2001, since the CTBT Article XIV Conference was held in New York on November 11–13, 2001.

CTBT at the 2026 NPT Review Conference: Goals and Language

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ABSTRACT

The Comprehensive Nuclear-Test-Ban Treaty (CTBT) has been recognized as an effective instrument for non-proliferation and nuclear disarmament. Multiple attempts have been made to promote the universalization of the CTBT through the NPT Review Conferences. This paper explores the upcoming 2026 NPT RevCon's role in advancing the CTBT and facilitating its entry into force. It also presents recommendations in terms of the language on the CTBT in the final document of the 2026 Review Conference based on an analysis of the previous RevCons experience.

INTRODUCTION

The paths of non-proliferation of nuclear weapons and the prohibition of nuclear weapon tests have been intertwined for decades. In fact, just about 5 years after the famous initiative by the then-Indian Prime Minister Jawaharlal Nehru to ban all nuclear testing (1954), the first major international treaty banning such tests was achieved. However, that ban applied only to one geographical area – the Antarctic – and was incorporated in Article V of the Antarctic Treaty of 1959. Then came the Partial Nuclear Test Ban Treaty of 1963, which prohibited nuclear tests in the atmosphere, in outer space, and under water and expressed an aspiration to achieve the discontinuance of all test explosions of nuclear weapons for all time. The Treaty of Tlatelolco of 1967 (on the Prohibition of Nuclear Weapons in Latin America) specifically prohibited any nuclear testing and any related activities in several of its articles. It is obvious, therefore, that the strong connection between the comprehensive ban on nuclear testing, nuclear non-proliferation and nuclear disarmament has been recognized by the international community for many years.

This recognition has been further reinforced in the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) of 1968. In its preamble,¹ it reaffirms the aspirations of the Partial Test-Ban Treaty and reiterates the determination of State Parties to achieve the cessation of nuclear tests for all time and continue talks in the pursuit of this goal. A new opportunity to further this goal opened in 1993–1994 with the resumption of talks on the complete nuclear test ban at the Conference on Disarmament in Geneva; furthermore, during the preparation for the 1995 NPT Review and Extension Conference, the nuclear weapon states and many other NPT parties realized that a very strong commitment to a speedy conclusion of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) would be a necessary political ingredient for the agreement on the NPT indefinite extension. The CTBT, finalized and opened for signature a year later, prohibits nuclear testing in all environments, whether for military or peaceful

¹ United Nations. (n.d.). The Treaty on the Non-Proliferation of Nuclear Weapons (NPT). United Nations. <<https://www.un.org/en/conf/npt/2005/npttreaty.htm>, accessed July 27, 2023>.

purposes. The CTBT Preamble also highlights² that the discontinuance of nuclear weapon explosions, embodied in the Treaty, is an “effective measure ... for nuclear disarmament”, referring to the Article VI of the NPT. Therefore, the mutually reinforcing character of both treaties is apparent. The CTBT's Preamble, which declares its aim to prevent nuclear weapons proliferation, underscores this mutual reinforcement.

Despite the fact that the CTBT has received an overwhelming number of signatories and ratifications, it is still not in force and thus is not legally binding. However, multiple attempts have been made since 1995 to promote the universalization of the CTBT through the NPT Review Conferences (RevCon).

This paper explores the upcoming 2026 NPT Review Conference's role in advancing the Comprehensive Test-Ban Treaty and presents recommendations based on analysis of the previous final documents on CTBT-related mentions.

LANGUAGE ANALYSIS OF THE PREVIOUS NPT REVCONS DOCUMENTS

First, we would like to revisit previous attempts made since 1995 – both successful and unsuccessful – to include the Treaty's goals and the cessation of nuclear tests in the draft final documents at various NPT Review Conferences. With this purpose in mind, we will look at the language of the final documents and other outcomes from the past five Conferences (Table 2 Appx.).

In the pivotal 1995 NPT Review and Extension Conference, during negotiations between the nuclear-weapon states (NWS) and the non-nuclear-weapon states (NNWS), the initiative for the CTBT emerged as a significant factor. As noted above, the ability of nuclear weapon states and their allies to accept strong language in favor of the CTBT played a very important role in ensuring the extension of the NPT. As a result, the 1995 Review Conference (RevCon)³ indefinitely prolonged the NPT, adopted a robust “program of action” for disarmament, encouraged the completion of CTBT negotiations by the end of 1996, and emphasized the necessity of restraint with regard to nuclear testing.

The 2000 Review Conference welcomed the CTBT's opening for signature on the 10th of September 1996 and noted that more than 150 states had signed it. The final document⁴ adopted at the 6th NPT Review Conference (2000) was the first to recognize that the discontinuance of nuclear testing would both contribute to non-proliferation and disarmament, two core pillars of the NPT, and also enhance international peace and security. The outcome document also deplored nuclear tests conducted by India and Pakistan in 1998, two Annex 2 states of the Comprehensive Nuclear-Test-Ban Treaty. Nevertheless, the RevCon document noted that “the two States have declared a moratorium ... also remarking that those two countries still need to sign and ratify the CTBT”.

² Waging Peace. (n.d.). Comprehensive Nuclear-Test-Ban Treaty Preamble. <<https://www.wagingpeace.org/wp-content/uploads/2013/06/ctbt.pdf>, accessed July 27, 2023>.

³ Nuke FAS. (n.d.). 1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons Final Document. NPT Documents. <<https://nuke.fas.org/control/npt/docs/2142.htm>, accessed July 27, 2023>.

⁴ Reaching Critical Will. (n.d.). 2000 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons Final Document. <<https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/GENERAL-DOCS/2000FD.pdf>, accessed July 27, 2023>.

Most pertinent for the CTBT's entry into force, however, was the unanimous adoption of thirteen practical steps⁵ for the effective implementation of the Article VI of the NPT and paragraphs 3 and 4(c) of the 1995 NPT Review and Extension Conference second decision entitled "Principles and objectives for nuclear non-proliferation and disarmament" during the 6th RevCon. Among these thirteen steps, two are directly linked to the CTBT's goals. The first step is related to the relevance and exigency of the signatures and ratifications necessary for the CTBT's earliest entry into force, meaning the Annex 2 countries. The second step is a global moratorium on nuclear testing in all environments, pending entry into force of the Comprehensive Nuclear-Test-Ban Treaty.

Five years later, however, the CTBT and the goal of permanent cessation of nuclear testing were absent from the final document of the 2005 Review Conference, as it had failed to achieve any substantial outcome to advance the goals agreed upon in 1995.

In contrast, the 2010 Review Conference final document⁶ was a clear success in identifying and addressing the impediments hindering the CTBT's entry into force. Like the 2000 RevCon, it noted the near-universal consensus regarding the prohibition of nuclear tests, remarking that more than 181 states have signed the CTBT. Likewise, it also affirmed the obligations under Article XIV concerning the universalization of the Treaty. Nevertheless, in contrast to the 6th RevCon, it adopted a more comprehensive account of the role of the CTBT as a Treaty that combats both vertical and horizontal proliferation and constrains the development and qualitative improvement of nuclear weapons. The RevCon deplored nuclear tests carried out by the Democratic People's Republic of Korea and called upon DPRK to fulfill its obligations under the relevant UN Security Council (UNSC) resolutions.

The 2010 Review Conference also adopted thorough conclusions and the most ambitious follow-up actions list on nuclear testing. Overall, five actions out of twenty-two⁷ on nuclear disarmament concerned the CTBT and the issue of nuclear weapon explosions.

Action 10 affirmed the expediency of ratification of the Treaty by nuclear weapon states, noting the positive impact of such a decision and the special responsibility on the part of NWS's to encourage Annex 2 states to sign or ratify. Moreover, in Action 11, it resolved that all states should refrain from nuclear testing or any nuclear weapon technologies that defeat the purpose of the Treaty and that all existing moratoriums should be maintained. Furthermore, Actions 12 and 13 recognized the contribution of the Conferences on Facilitating the Entry into Force of the Comprehensive Nuclear-Test-Ban Treaty and the measures adopted therein, and recalled the obligations under the Article XIV of the Treaty regarding the promotion and universalization of the accord at the national, regional and global levels. Finally, Action 14 encouraged the CTBTO to fully develop the verification regime of the Treaty, including early operationalization of the International Monitoring System.

⁵ Squassoni, S. (n.d.). Grading Progress on 13 Steps Toward Disarmament. <https://carnegieendowment.org/files/13_steps.pdf, accessed July 27, 2023>.

⁶ James Martin Center for Nonproliferation Studies. (n.d.). 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons Final Document. https://www.nonproliferation.org/wp-content/uploads/2015/04/2010_fd_part_i.pdf, accessed July 27, 2023>.

⁷ Mukhatzhanova, G. (2013). Implementation of the conclusions and recommendations for follow-on actions adopted at the 2010 NPT Review Conference disarmament actions 1-22. <https://www.nonproliferation.org/wp-content/uploads/2013/11/130405_2013_cns_npt_monitoring_report.pdf, accessed July 27, 2023>.

The two subsequent Review Conferences (2015 and 2020) failed to adopt a final document; however, it would be helpful to analyze the draft outcome documents in spite of this factor.

The 9th NPT RevCon (2015) failed to adopt a final document⁸ for a number of reasons, the most important being the failure to agree on the test regarding the WMD-Free-Zone in the Middle East. However, its draft included several identical provisions to the 2000 and 2010 RevCons. It welcomed the signing of the Treaty by more than 180 states, emphasized the responsibility of State Parties to promote the accord, and reaffirmed the vital role of the CTBT as an effective instrument/measure for nuclear disarmament and non-proliferation. It also deplored the nuclear tests carried out by DPRK and urged it to refrain from further nuclear testing, as required by the UNSC resolutions. Nevertheless, for the first time, it noted the operationalization of the provisional on-site inspection regime of the CTBTO, as demonstrated by the 2014 Integrated Field Exercise in Jordan, which simulated a final verification measure. In the final document, recommendation 15 reaffirmed Actions 10 to 14 of the 2010 Review Conference and called upon the eight remaining Annex 2 states to sign and ratify the Treaty without further delay and without waiting for any other states to do so. Like the 2000 and 2010 RevCons, it called upon states to cease and refrain from nuclear tests while adding clauses regarding the consequences of atomic testing for the environment and human health. As noted above, though, all these provisions were not adopted and can only be viewed as an indication of what was theoretically possible, and not as a formal agreement among states parties.

In September 2016, on the CTBT's twentieth anniversary of opening for signature, the UNSC adopted the first-ever CTBT-specific resolution (S/RES/2310). Among other things, the UNSC stressed the vital importance and urgency of achieving the early entry into force of the CTBT and urged all states that have either not signed or not ratified the Treaty, particularly the eight remaining Annex 2 States, to do so without further delay.

The next Review Conference after that was supposed to take place in 2020, but due to the COVID 19 pandemic, it was postponed several times before finally convening in August 2022. It also failed to adopt a final document due to irreconcilable differences on a number of issues. Its draft final document (not adopted) can still give an impression of where things stood with regard to the CTBT. The draft final document of the 2022 Review Conference⁹ had numerous similarities with previous RevCons' language. It also welcomed the new signatures and ratifications of the Treaty, reaffirmed the consequences of nuclear use and testing, and recognized the crucial role the CTBT plays as an effective measure for disarmament and non-proliferation in fulfillment of Article VI of NPT and paragraphs 3 and 4(c) of the second decision of the 1995 Extension Conference. Similarly, it emphasized the role of nuclear weapon states in enabling the earliest entry into force and the progress made to establish the CTBT verification regime, including on-site inspections. Likewise, it deplored six nuclear tests conducted by DPRK in the past two decades and stressed that it should refrain from further testing.

⁸ Reaching Critical Will. (n.d.). 2015 Review Conference of the Parties to the Treaty on the Non-Proliferation Draft Final Document. <<https://reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2015/documents/DraftFinalDocument.pdf>, accessed July 27, 2023>.

⁹ Reaching Critical Will. (n.d.). 2020 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons Draft Final Document. <https://reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2022/documents/CRPI_Rev2.pdf, accessed July 27, 2023>.

The 2022 draft final document primarily reiterated the provisions from previous RevCons and the special responsibility of nuclear weapon states. Furthermore, it encouraged all States to refrain from nuclear testing and reaffirmed that all existing moratoriums should be maintained. For the first time, however, it included a provision on the commitment of State Parties to educating youth and future generations on the consequences of nuclear use and testing.

RECOMMENDATIONS FOR THE 2026 REVCON AND CTBT 30TH-YEAR ANNIVERSARY

This section emphasizes that the relationship between the CTBT and the NPT could be more effective by crafting common strategic thinking that could ensure global peace while promoting a sense of responsibility among member-states.

There are also several propositions we would like to make in terms of the language on the CTBT in the final document of the 2026 Review Conference.

First of all, Action 10 of the 2010 Review Conference highlights the role of nuclear weapon states in CTBT's entry into force. Under the NPT, States Parties that have detonated a nuclear explosive device by January 1, 1967, are considered nuclear weapon states. The list includes China, France, Russia, the United Kingdom, and the United States. Among these, only two have not yet ratified the Treaty, which we consider essential to reflect in the 2026 RevCon. "The special expediency and urgency, for the remaining two nuclear weapon states under the NPT to ratify the CTBT, noting that positive decisions by all nuclear-weapon States would have the beneficial impact towards the entry into force and universalization of the Treaty...".

Furthermore, the authors noticed that the UNSC resolution 2310 is not mentioned in the draft final document of the 2022 RevCon, which is a regrettable omission, and suggest it be included in the paragraph concerning the eight remaining Annex 2 states.

In addition, comparing the response at the 2000 Review Conference to nuclear testing conducted by India/Pakistan in 1998 and the reaction to the atomic explosions of the DPRK during the 2022 RevCon could be beneficial. The 2000 Review Conference deplored nuclear tests by two South Asian countries; however, it noted their declared moratoriums on further testing and statements demonstrating their willingness to enter into legal commitments not to conduct any tests. However, unlike the 2000 RevCon, the 2022 Review Conference only addressed nuclear testing. It stressed that DPRK should refrain from further testing, while it neither specifically mentioned nor encouraged the maintenance of the DPRK's self-imposed moratorium¹⁰ announced in April 2018. It also did not note the DPRK's willingness to "join international disarmament efforts for a total ban on nuclear tests".¹¹ The general impression is that at the 2022 NPT Review Conference there was little readiness on the part of some interested states to engage the DPRK in a constructive search for mutually acceptable language. Furthermore, although in December 2019, DPRK proclaimed that its moratoria no

¹⁰ Qiyang Niu, Haeyoon Kim & Zhaniya Mukatay (2022) DPRK and the CTBT: What Could Come Next after the Moratorium?, *Journal for Peace and Nuclear Disarmament*, 5:2, 487-495, DOI: 10.1080/25751654.2022.2133335.<<https://www.tandfonline.com/doi/full/10.1080/25751654.2022.2133335>, accessed July 27, 2023>.

¹¹ Zerbo, L. (2018). The Nuclear Test Ban and the Verifiable Denuclearization of North Korea. *Arms Control Today*, 48(9), 6–9. <<https://www.jstor.org/stable/90025939>, accessed July 27, 2023>.

longer valid¹², it has not yet conducted nuclear testing post-statement. Therefore, assuming DPRK upholds the de-facto moratorium until the 2026 Review Conference, it might be relevant to rerun the 2000 scenario, which means remarking on their previous record while noting their current moratorium and willingness to enter into a legal commitment to the prohibition of nuclear testing.

Lastly, for the 30th anniversary of the CTBT's adoption, instead of the timeframe "as early as possible", efforts should be made to include concrete dates (not too stringent, perhaps) for the eight remaining states to sign/ratify the Treaty. This would be a huge achievement—there is precedent for this action in 1995 (although it was about the finalization of the treaty and not ratification) and we believe it could be tried again in 2026.

A final document, including an agreed forward-looking text on the CTBT, may be achievable if a constructive approach prevails.

The 2026 NPT Review Conference should renew its call for all NPT parties to sustain and preserve the test-free environment and to take all measures towards the entry into force of the CTBT.

The 2026 NPT RevCon should remind the NPT states parties that eight Annex 2 states are yet to ratify the CTBT and that the entry into force of the CTBT would significantly increase the sustainability of the nuclear non-proliferation regime.

The Review Conference might consider making a further step by recognizing the special political importance of CTBT ratification by the US and China – the two remaining NWSs parties to the NPT from Annex 2. While it would not resolve all the hurdles on the way to the CTBT entry into force, the mere fact that the treaty would be ratified by all NWSs and by all Permanent Members of the UNSC could generate a powerful political impact. Of course, a language could be devised, that would avoid mentioning the US and China by name, but still make it clear which countries are specifically called upon to ratify the treaty.

The Review Conference should also encourage all other NPT and non-NPT parties listed in Annex 2 to sign or ratify the Treaty. The continued efforts toward establishing the Weapons of Mass Destruction-Free Zone (WMDFZ) in the Middle East could play a constructive role here.

¹² Sang-hun, C. (2019, December 31). North Korea is no longer bound by nuclear test moratorium, Kim says. The New York Times. <<https://www.nytimes.com/2019/12/31/world/asia/north-korea-kim-speech.html>, accessed July 27, 2023>.

APPENDIX

Table 1. Comparison of the link of the CTBT and NPT

NPT Preamble	CTBT Preamble
<p>Recalling the determination expressed by the Parties to the 1963 Treaty banning nuclear weapons tests in the atmosphere, in outer space and under water in its Preamble to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time and to continue negotiations to this end.</p>	<p><u>Noting</u> the aspirations expressed by the Parties to the 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time.</p> <p><u>Affirming</u> the purpose of attracting the adherence of all States to this Treaty and its objective to contribute effectively to the prevention of the proliferation of nuclear weapons in all its aspects, to the process of nuclear disarmament and therefore to the enhancement of international peace and security.</p>

Table 2. References to the CTBT throughout NPT Review Conferences (1995-2020) and recommendations given afterwards

Review Conference	References to the CTBT	Recommendations after the Conference
<p>1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons</p>	<p><u>Decision 2:</u></p> <p>4. (a) The completion by the Conference on Disarmament of the negotiations on a universal and internationally effectively verifiable Comprehensive Nuclear-Test-Ban Treaty no later than 1996. Pending the entry into force of a Comprehensive Test-Ban Treaty, the nuclear-weapon States should exercise utmost restraint.</p>	<p>The Conference further agreed that Review Conferences should look forward as well as back. They should evaluate the results of the period they are reviewing, including the implementation of undertakings of the States parties under the Treaty, and identify the areas in which, and the means through which, further progress should be sought in the future. Review Conferences should also address specifically what might be done to strengthen the implementation of the Treaty and to achieve its universality.</p>
<p>2000 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapon</p>	<p><u>Article VI and eighth to twelfth preambular paragraphs:</u></p> <p>4. The Conference reaffirms that the cessation of all nuclear-weapon-test explosions or any other nuclear explosions will contribute to the non-proliferation of nuclear weapons in all its aspects, to the process of nucle-</p>	<p><u>13 practical steps for the systematic and progressive efforts to implement Article VI:</u></p> <p>The importance and urgency of signatures and ratifications, without delay and without conditions and in accordance with constitutional processes, to achieve the earliest entry into</p>

	<p>ar disarmament leading to the complete elimination of nuclear weapons and, therefore, to the further enhancement of international peace and security.</p> <p>5. The Conference welcomes the adoption by the General Assembly and subsequent opening for signature of the Comprehensive Nuclear-Test-Ban Treaty in New York on 24 September 1996, and notes that 155 States have signed it and that 56 of them, including 28 whose ratification is necessary for its entry into force, have deposited their instruments of ratification. The Conference welcomes the ratifications by France and the United Kingdom of Great Britain and Northern Ireland and the recent decision by the State Duma of the Russian Federation to ratify the Treaty. The Conference calls upon all States, in particular on those 16 States whose ratification is a prerequisite for the entry into force of the Comprehensive Nuclear-Test-Ban Treaty, to continue their efforts to ensure the early entry into force of the Treaty;</p> <p>6. The Conference welcomes the final declaration adopted at the Conference on facilitating the entry into force of the Comprehensive Nuclear-Test-Ban Treaty, convened in Vienna in October 1999, in accordance with article XIV of the Treaty.</p> <p>The importance and urgency of signatures and ratifications, without delay and without conditions and in accordance with constitutional processes, to achieve the early entry into force of the Comprehensive Nuclear-Test-Ban Treaty.</p> <p>The Conference deplores the nuclear test explosions carried out by India and then by Pakistan in 1998. The Conference declares that such actions do not in any way confer a nuclear-weap-</p>	<p>force of the Comprehensive Nuclear Test Ban Treaty.</p> <p>A moratorium on nuclear weapon test explosions or any other nuclear explosions pending entry into force of that Treaty.</p>
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	<p>on-State status or any special status whatsoever. The Conference calls upon both States to undertake the measures set out in United Nations Security Council resolution 1172 (1998);</p> <p>The Conference notes that the two States concerned have declared moratoriums on further 3 NPT/CONF.2000/28 (Parts I and II) testing and their willingness to enter into legal commitments not to conduct any further nuclear tests by signing and ratifying the Comprehensive Nuclear Test-Ban Treaty. The Conference regrets that the signing and ratifying has not yet taken place despite their pledges to do so.</p>	
<p>2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons</p>	<p><u>Article V:</u></p> <p>78. The Conference affirms that the provisions of article V of the Treaty with regard to the peaceful applications of any nuclear explosions are to be interpreted in the light of the Comprehensive Nuclear-Test-Ban Treaty.</p> <p>83. The Conference reaffirms the essential role of the Comprehensive Nuclear Test-Ban Treaty within the nuclear disarmament and non-proliferation regime and that by achieving the cessation of all nuclear weapon test explosions and all other nuclear explosions, by constraining the development and qualitative improvement of nuclear weapons and ending the development of advanced new types of nuclear weapons, the Treaty combats both horizontal and vertical proliferation. The Conference calls on all States to refrain from any action that would defeat the object and purpose of the Comprehensive Nuclear-Test-Ban Treaty pending its entry into force, in particular with regards to the development of new types of nuclear weapons.</p>	<p><u>Conclusions and recommendations for follow-on actions:</u></p> <p>D. Nuclear testing:</p> <p>i. The Conference recognizes the cessation of all nuclear test explosions and all other nuclear explosions, by constraining the development and qualitative improvement of nuclear weapons and ending the development of advanced new types of nuclear weapons, constituting an effective measure of nuclear disarmament and non-proliferation in all its aspects.</p> <p>ii. The Conference reaffirms the vital importance of the entry into force of the Comprehensive Nuclear-Test-Ban Treaty as a core element of the international nuclear disarmament and non-proliferation regime, as well as the determination of the nuclear-weapon States to abide by their respective moratoriums on nuclear test explosions pending the entry into force of the Comprehensive Nuclear-Test-Ban Treaty.</p>

	<p>84. The Conference welcomes that 181 States have signed the Comprehensive Nuclear-Test-Ban Treaty and that 153 States, including 35 whose ratification is necessary for its entry into force, have deposited instruments of ratification. In this respect, the Conference welcomes the ratification by the Central African Republic and by Trinidad and Tobago during the Conference and welcomes the recent expressions by remaining States whose ratifications are necessary for the Treaty to enter into force of their intention to pursue and complete the ratification process, including by Indonesia and the United States of America. The Conference also welcomes the recent expressions by Iraq, Papua New Guinea and Thailand of their intentions to pursue and complete the ratification process.</p> <p>85. The Conference welcomes the high-level political support for the Treaty expressed during the Conference on Facilitating the Entry into Force of the Comprehensive Nuclear-Test-Ban Treaty, convened in New York in September 2009, in accordance with article XIV of the Comprehensive Nuclear-Test-Ban Treaty, where specific and practical measures to promote the entry into force of that Treaty were adopted. The Conference stresses the importance of the international monitoring system and commends the progress made by the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization towards its completion.</p> <p>108. The Conference deeply deplores the nuclear test explosions announced by the Democratic People's Republic of Korea and declares that the Democratic People's Republic of Korea cannot have the status of a nucle-</p>	<p><u>The Conference resolves that:</u></p> <ul style="list-style-type: none"> ■ Action 10: All nuclear-weapon States undertake to ratify the Comprehensive Nuclear-Test-Ban Treaty with all expediency, noting that positive decisions by nuclear-weapon States would have the beneficial impact towards the ratification of that Treaty, and that nuclear weapon States have the special responsibility to encourage Annex 2 countries, in particular those which have not acceded to the Treaty on the Non-Proliferation of Nuclear Weapons and continue to operate unsafeguarded nuclear facilities, to sign and ratify. ■ Action 11: Pending the entry into force of the Comprehensive Nuclear-Test-Ban Treaty, all States commit to refrain from nuclear-weapon test explosions or any other nuclear explosions, the use of new nuclear weapons technologies and from any action that would defeat the object and purpose of that Treaty, and all existing moratoriums on nuclear-weapon test explosions should be maintained. ■ Action 12: All States that have ratified the Comprehensive Nuclear-Test-Ban Treaty recognize the contribution of the conferences on facilitating the entry into force of that Treaty and of the measures adopted by consensus at the Sixth Conference on Facilitating the Entry into Force of the Comprehensive Nuclear-Test-Ban Treaty, held in September 2009, and commit to report at the 2011 Conference on progress made towards the urgent entry into force of that Treaty. ■ Action 13: All States that have ratified the Comprehensive Nuclear-Test-Ban Treaty undertake to promote the entry into force and implementation of
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	<p>ar-weapon State in accordance with the Treaty in any case. The Conference reaffirms the firm support for the Six-Party Talks, which is the effective mechanism for the verifiable denuclearization of the Korean Peninsula in a peaceful manner. The Conference calls for the resumption of the talks at an appropriate time in the future. The Conference recalls the importance of the implementation of the relevant resolutions of the United Nations Security Council, and urges the Democratic People's Republic of Korea to fulfil its commitments under the Six-Party Talks, in accordance with the September 2005 Joint Statement.</p>	<p>that Treaty at the national, regional and global levels.</p> <ul style="list-style-type: none"> ■ Action 14: The Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization is to be encouraged to fully develop the verification regime for the Comprehensive Nuclear-Test-Ban Treaty, including early completion and provisional operationalization of the international monitoring system in accordance with the mandate of the Preparatory Commission, which should, upon entry into force of that Treaty, serve as an effective, reliable, participatory and non-discriminatory verification system with global reach, and provide assurance of compliance with that Treaty.
<p>2015 Review Conference of the Parties I to the Treaty on the Non-Proliferation of Nuclear Weapons</p>	<p>147. The Conference welcomes that 183 States have signed the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and that 164 States, including: 36 whose ratification is necessary for its entry into force, have deposited instruments of ratification. In this respect, the Conference welcomes the ratification of the CTBT since the 2010 Review Conference by Angola, Brunei Darussalam, Chad, Congo, Ghana, Guatemala, Guinea, Guinea-Bissau, Indonesia, Iraq and Niue.</p> <p>148. The Conference reaffirms the importance of the entry into force of the CTBT at the earliest possible date, recalling the responsibility of the State signatories to promote that Treaty.</p> <p>149. The Conference further reaffirms the importance of the CTBT as a vital multilateral instrument for nuclear disarmament and nuclear non-proliferation. The Conference recognizes the importance to promote and achieve the entry into force of the CTBT and its universalization.</p>	<p><u>Recommendation 15:</u></p> <p>In reaffirming actions 10 to 14 agreed to at the 2010 Review Conference, the Conference calls upon the eight remaining States listed in Annex 2 of the Comprehensive Nuclear-Test-Ban Treaty to take individual initiatives to sign and ratify that Treaty without further delay and without waiting for any other State to do so. Pending the entry into force of that Treaty and against the backdrop of inter alia, widespread concerns regarding the impact on health and the environmental consequences resulting from nuclear tests and in particular, the effects on children's and women's health, all States commit to cease and refrain from nuclear-weapon test explosions or any other nuclear explosions, the use of new nuclear weapons technologies and from any action, including those at former nuclear test sites, that would defeat the object and purpose of that Treaty, and to maintain moratoriums on nuclear-weapon test explosions.</p>

	<p>'The Conference welcomes the efforts by the CTBTO Preparatory Commission toward the completion and provisional operationalization of the on-site 'inspection regime and encourages it to build upon the achievements at the Integrated Field Exercise 2014 in Jordan.</p> <p>161. The Conference strongly deplores the nuclear tests conducted by the Democratic People's Republic of Korea in 2006, 2009 and 2013, and urges the Democratic People's Republic of Korea to refrain from conducting further nuclear tests, as required by the relevant United Nations Security Council resolutions, and to renounce its policy of building its nuclear forces, which undermines the global nonproliferation regime.</p>	<p>The Conference recalls that the CTBT will provide an effective disarmament and nonproliferation measure by constraining the development and qualitative improvement of nuclear weapons.</p>
<p>2020 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons</p>	<p><u>Article V:</u></p> <p>101. The Conference affirms that the provisions of article V of the Treaty with regard to the peaceful applications of any nuclear explosions are to be interpreted in the light of the Comprehensive Nuclear-Test-Ban Treaty.</p> <p>136. The Conference reaffirms the importance of the entry into force of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) at the earliest possible date, recalling the responsibility of all States that have ratified the Treaty to promote the CTBT. The Conference welcomes the recent ratifications of the CTBT (Myanmar, 2016; Eswatini, 2016; Thailand, 2018; Zimbabwe, 2019; Comoros, 2021; Cuba, 2021; Dominica, 2022; Gambia, 2022; Timor-Leste, 2022; and Tuvalu, 2022) as a sign of the continuing salience of the Treaty in strengthening international security.</p> <p>137. The Conference recognizes that the entry into force of the CTBT is of the utmost urgen-</p>	<p><u>I. Nuclear Disarmament:</u></p> <p>22. States Parties commit to pursue the urgent entry into force of the Comprehensive Nuclear-Test-Ban Treaty (CTBT), urge all States that have yet to ratify the CTBT to do so in all expediency, particularly the remaining eight States listed in its Annex 2 and recall the special responsibility of nuclear-weapon States in this regard as stipulated in Action 10 of the 2010 Action Plan.</p> <p>23. Pending the entry into force of the CTBT, all States commit to refrain from nuclear-weapon test explosions or any other nuclear explosions, the use of new nuclear weapons technologies and from any action that would defeat the object and purpose of that Treaty, and all existing moratoria on nuclear-weapon test explosions should be maintained.</p> <p>24. States Parties commit to assist the Preparatory Commission for the Comprehensive Nu-</p>

	<p>cy as it will provide the global community with a permanent, non-discriminatory, verifiable and legally binding commitment to end any nuclear weapon test explosion or any other nuclear explosion, as a means to constrain the development and qualitative improvement of nuclear weapons, which constitutes an effective measure of nuclear disarmament and nuclear non-proliferation.</p> <p>138. The Conference reaffirms the importance of the ratification of the CTBT by nuclear-weapon States which have yet to do so, with all expediency, noting that positive decisions by nuclear-weapon States would have a beneficial impact towards further ratifications of that Treaty, consistent with Action 10 of the conclusions and recommendations for follow-on actions adopted by the 2010 Review Conference.</p> <p>139. The Conference recognizes the need for all States to uphold the existing moratoria on nuclear-weapon test explosions or any other nuclear explosion and to continue efforts towards the long overdue entry into force of the CTBT, including through political, technical and financial efforts to further strengthen the International Monitoring System (IMS) and the Preparatory Commission for the Comprehensive Test Ban Treaty Organization (CTBTO).</p> <p>140. The Conference acknowledges the progress made to establish the CTBT verification regime, as evidenced by the work of the IMS and the International Data Centre (IDC) and by the experience gained through the development of the on-site inspection mechanism. The Conference acknowledges the importance of continued assistance by States parties to the Preparatory Commission for the</p>	<p>clear-Test-Ban Treaty Organization in its work in preparing for the entry into force of the Treaty. This includes the early completion, continued provisional operation and maintenance of the International Monitoring System, in accordance with the mandate of the Preparatory Commission.</p> <p>40. States Parties commit to educating and empowering individuals of all generations regarding the dangers of nuclear weapons and the imperatives to reach a world without nuclear weapons, including the risks and humanitarian consequences associated with nuclear weapons. States Parties commit to take concrete measures to raise awareness of the public, in particular of younger and future generations, as well as of leaders, disarmament experts and diplomats, on all topics relating to nuclear disarmament and non-proliferation, including through interactions with and directly sharing the experiences of the people and the communities affected by nuclear weapons use and testing in order to learn about their humanitarian and environmental impact.</p>
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	<p>CTBTO in its work in preparing for the entry into force of the Treaty. This includes the early completion, continued provisional operation and maintenance of the IMS, which has demonstrated that it is an effective, reliable, participatory and non-discriminatory element of the global verification and compliance aims of the CTBT.</p> <p>141. The Conference expresses its appreciation for the scientific and civil benefits provided by the data gathered by the CTBT verification regime and acknowledges the role that the Preparatory Commission for the CTBTO plays in disarmament and non-proliferation education.</p> <p>153. The Conference recognizes the vital importance of educating and empowering individuals of all generations regarding the dangers of nuclear weapons and the imperatives to reach a world without nuclear weapons, including the risks and humanitarian consequences associated with nuclear weapons. The Conference calls on States Parties to commit to take concrete measures to raise awareness of the public, in particular of younger and future generations, as well as of leaders, disarmament experts and diplomats, on all topics relating to nuclear disarmament and non-proliferation, including through interactions with and directly sharing the experiences of the peoples and the communities affected by nuclear weapons use and testing, to know their humanitarian and environmental impact. The NPT/CONF.2020/CRP.1/Rev.2 21/36 Conference calls on States Parties to commit to empower and enable youth to participate in formal and informal initiatives and discussions related to nuclear disarmament.</p> <p>174. The Conference, stressing that the DPRK must comply with</p>	
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	<p>its international obligations, and recalling relevant UNSC resolutions, condemns the six nuclear tests conducted by the DPRK and stresses that the DPRK must not conduct any further nuclear tests.</p>	
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Imagining the Day after the US Ratification of the CTBT

■ Samran Ali ■ Aayushi Sharma ■ Simon Yin

ABSTRACT

What if the US takes the leadership role among States that have so far failed to sign/ratify the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and ratifies the Treaty itself? Could this potentially inspire other “remaining” Annex 2 states to follow suit, thus ultimately facilitating the entry into force of the CTBT? The paper explores the possibility of a ‘domino effect’ resulting from the US ratification of the CTBT, particularly in the context of China, India, Pakistan, Egypt, and the DPRK. This is not an exhaustive list, but it provides insights into how the US ratification might influence the policies of other hesitant states in this context.

THE U.S. RATIFICATION

The CTBT bans all nuclear explosions, whether for military or peaceful purposes. It comprises a preamble, 17 articles, two annexes, and a Protocol with its two annexes. Annex 2 of the Treaty lists 44 States whose ratification of the Treaty is necessary for its entry into force. Being the first State to have produced nuclear weapons, the only State that has used nuclear weapons against another State, and the one that has carried out the largest number of nuclear tests, the US plays a significant role as part of the Annex 2 States.

In 1999, the US Senate failed to give its “advice and consent” to the president for the ratification of the CTBT. In its Nuclear Posture Review, the Trump administration stated that the US would not seek the ratification of the Treaty, although in its Nuclear Posture Review, the Trump administration stated reversed somewhat the position taken by Trump and reinstated ratification as a goal. The US is seen by many as a leader and the primary architect of arms control initiatives. The burdens of leadership logically require the US to take even more responsibility, such as the ratification of the CTBT. Therefore, in a hypothetical event where the U.S. ratified the CTBT, this would certainly change the political dynamics around the Treaty. It would be a significant step in paving the way for the entry into the force of CTBT and reinforcing the arms control and disarmament framework. It might also spur other States to sign or ratify the Treaty. Nonetheless, it is important to emphasize that the decision to sign or ratify the CTBT remains a sovereign choice for each state, even following the US ratification.

While the U.S. ratification could look favorable for CTBT’s future and nuclear non-proliferation efforts, it could impact the role of nuclear weapons within the U.S., and the massive USD 1.3 trillion nuclear weapons modernization plan that was initiated in President Obama’s term and is slated to finish in 2030.¹

¹ Mandy Smithberger and William D. Hartung “Biden’s \$1.3 Trillion ‘National Security’ Budget Won’t Make Us Safer,” Foreign Policy in Focus, June 30, 2021, <<https://fpif.org/bidens-1-3-trillion-national-security-budget-wont-make-us-safer/>, accessed July 27, 2023>.

One of the significant events that need to take place in order for the U.S. to ratify the CTBT is a 2/3 majority approval from the U.S. Senate, and this would only happen when there is a solid political commitment from both sides of the political spectrum. Unfortunately, there are no indications that the US will ratify the CTBT. On the contrary, its investment in modernizing and integrating nuclear triad with space-based capability and its doctrinal commitments in the recent National Security Strategy, National Defense Strategy as well as Nuclear Posture and Missile Defense Reviews rule out the likelihood of CTBT ratification.

THE DAY AFTER

Will the day after American ratification be the new dawn when the remaining seven Annex 2 States decide to drop the ball and ratify the Treaty? The intricacy lies within the details, as seen with the US ratification of the CTBT, which is far from a straightforward affair. In this context, the process of signing and ratifying by the seven Annex 2 nations introduces even greater complexity due to a multitude of political and technical factors.

Even though States have in one way or another reiterated their commitment to a voluntary moratorium on nuclear weapons testing, it may be important to consider that formal ratification would impose legal responsibility on the States and they need to comply with all the provisions of the Treaty. It would also make the States accountable to the Treaty's verification mechanisms, including the well-equipped and comprehensive International Monitoring System (IMS).

Among the 44 Annex 2 States, all have signed with the exceptions of the DPRK, India, and Pakistan. In addition to the US, four states have signed but not ratified CTBT i.e., China, Egypt, Iran, and Israel. China and the U.S. are the only Nuclear Non-Proliferation Treaty (NPT) nuclear weapons States that have not ratified the CTBT.

While the signing and ratification of the CTBT by remaining Annex 2 states is obviously an important goal in itself, it is also very important for the NPT. CTBT is one of the key arms control steps that can pave the way for disarmament. Nuclear disarmament is the foremost pending agenda on the Conference on Disarmament (CD) table since the 1978 Special Session on Disarmament. In signing up for NPT the Non-Nuclear Weapons States hoped that N-5 (U.S., Russia, UK, France, and China) would go ahead with nuclear disarmament. They have not done so to this day. The frustration of 91 members of the NPT reached the point that they negotiated a treaty banning nuclear weapons – called the Treaty on Prohibition of Nuclear Weapons (TPNW).² The non-ratification of the CTBT by the US suggest that it is not confident about the reliability of its warheads stockpile and keeps its options open. Interestingly, Russia, the UK, and France felt confident in the reliability of their warhead designs and ratified CTBT. But major nuclear weapons modernization programs, like the already mentioned one in the U.S., especially if they progress in the absence of the CTBT in force, may trigger the erosion of this confidence. Even after known 1,054 nuclear weapons tests,³ besides the use of nuclear weapons in Japan, the U.S. is not sure about the reliability of 3600 nuclear warheads in its active stockpile.

² "Treaty on the prohibition of nuclear weapons," United Nations Office for Disarmament, <<https://disarmament.unoda.org/wmd/nuclear/tpnw/>>, accessed July 27, 2023>.

³ Daryl Kimball, "The Nuclear Testing Tally", Arms Control Association, August 2022, <<https://www.armscontrol.org/factsheets/nucleartesttally>>, accessed July 27, 2023>.

The US has the most advanced supercomputer simulation means available in its several laboratories to maintain the reliability of its stockpile with hot testing.⁴ Continuous reductions by the U.S. and Russia in their nuclear warheads and delivery capabilities to the level of China's holdings may clear a path for N-5 states to generate the desired momentum for nuclear disarmament and make other non-NPT nuclear powers confident in trailing them. For this to happen, the renewal of New START in 2026 and a verifiable American-Russian pledge to reduce the delivery systems and warheads closer to the levels of Beijing will be a big step.

ANNEX 2 STATES: A CASE-BY-CASE ANALYSIS

China

China is supportive of the CTBT implementation. It signed the Treaty in 1996 but refrained from ratifying it without the US ratification. Therefore, the U.S. ratification of the CTBT can lead to a similar decision by China if its ratification is only conditional on the U.S. and doesn't have other imperatives.

The U.S. and China are the only remaining NPT Nuclear Weapon States that have not ratified the CTBT. China signed the Treaty in 1996.⁵ In its official position, China has reiterated its support for the goals of disarmament and prohibition of nuclear weapons testing. However, it has not ratified the treaty due to the security competition with the United States.⁶ China practically has no incentive to ratify before the United States. The supreme Chinese leaders, are taking the nuclear arms race very seriously. For a long time, there have been suggestions and calls to China to decide on whether to ratify the treaty or not, without waiting for the U.S.' ratification. However, in reality, this scenario where China ratifies before the United States seems very farfetched. In 1996 that China declared a voluntary moratorium on nuclear weapons testing.⁷ It also has a no-first-use policy on the use of nuclear weapons. The United States does not have this element in its nuclear weapons doctrine and considering the great power competition that China and the US are involved in, it becomes important for China to see the US ratify the treaty first and agree to a legal compliance to stop nuclear weapons testing. Therefore, the expected and realistic scenario is that, after the U.S. ratifies the CTBT, China will likely also follow suit.

India

In an event where the US ratify the CTBT, it would certainly send a powerful signal to India to change the strategic dynamics of the world. When we consider the impact on India, it is important to note that the country has remained an ideological custodian of a complete ban on nuclear weapons testing and has participated directly in the negotiations for the drafting of the Comprehensive Nuclear-Test-Ban Treaty (CTBT). However, the India of 2022, unlike that of 1954, is very much driven by strategic and security concerns. This is primarily

⁴ "U1a Complex," NNSS, <<https://www.nnss.gov/pages/facilities/U1aComplex.html>, accessed July 27, 2023>.

⁵ China's signature on Comprehensive Nuclear Test Ban Treaty. Ministry of Foreign Affairs of the People's Republic of China, <https://www.fmprc.gov.cn/eng/ziliao_665539/3602_665543/3604_665547/200011/t20001117_697893.html, accessed July 27, 2023>.

⁶ Fitzpatrick, M (2020). Why China will wait on the Nuclear Test Ban ratification. Alarabiya News, <<https://english.alarabiya.net/views/news/world/2013/11/02/Why-China-will-wait-on-nuclear-test-ban-ratification>, accessed July 27, 2023>.

⁷ Text of Statement of the Government of the People's Republic of China (1996). International Atomic Energy Agency. <<https://www.iaea.org/sites/default/files/publications/documents/infcircs/1996/inf522.shtml#:~:text=On%2029%20July%201996%2C%20China,effective%20from%2030%20July%201996>, accessed July 27, 2023>.

the reason why the nuclear weapons programme of India saw a shift over time – namely, because of the strong perception that a strong nuclear weapons capability leads to greater security. India's nuclear weapons doctrine has always maintained two primary aspects – *The No first use policy and the voluntary moratorium on nuclear weapons testing*. In this case, it would be relevant to note that there might not be any significant changes in the Indian nuclear doctrine per se, except for the fact that India might be positively motivated to sign the CTBT, which in itself is going to be a step forward.

By taking into account the contemporary security scenario, the impact of a U.S. ratification of the CTBT may not be as direct on India. To understand this, there is a need to contextualize this event to the dynamics of South Asia. The impact on India would majorly be based on the reactions of the other major states, especially China in this regard as it is a direct concerning factor for Indian national security. Ratification by China would bring forth even greater reassurances of security, as compared to a ratification by the United States. In this case, it could be interesting to understand the impact on China. If the ratification of the CTBT by the United States, drives China forward to register its support for the treaty, it could have an impact on India's foreign and security policy. Since China and Pakistan are the two major security concerns for India, their positions in the context of the CTBT would have a greater influence on India's strategic decisions. Moreover, after the ratification by the United States, Pakistan may follow suit, leading India to rethink its decision to remain out of the CTBT. Considering India already has a voluntary moratorium on nuclear weapons testing, the country's ratification of the CTBT would hold a more symbolic value than a tangible one. It can be then said that the US ratification of the CTBT still remains prominent but the regional security dynamics of South Asia would still have an important role to play in influencing the decision-making of the regional powers.

Pakistan

Pakistan links its ratification to the ratification by India. Over the years, Pakistan's principled stance on the objectives of the Treaty has remained consistent. It actively contributed to the CTBT negotiations in the Conference on Disarmament and voted in its favor in 1996 at UNGA. Pakistan is an accredited observer state of the Preparatory Commission for the CTBTO. Its record and the overall support for the Treaty indicate that ratification by Pakistan will not be a hurdle – but with one provision: ratification by India.

Pakistan's commitment to the objectives of CTBT, non-proliferation, and disarmament is evident from its actions, some of which have been overtaken by time. Pakistan's past offers⁸ to India include the proposed joint Indo-Pak declaration renouncing the acquisition or manufacture of nuclear weapons in 1978; the South Asian Nuclear Weapons Free Zone in 1978; mutual inspections of each other's nuclear facilities in 1979; simultaneous adherence to the NPT in 1979; simultaneous acceptance of full-scope IAEA safeguards in 1979; and the proposal of a bilateral non-testing regime in South Asia in 1987. In August 2016, Pakistan again offered a bilateral agreement on nuclear testing to India. These examples show that Pakistan has always supported the non-testing norm. It was not the first country in the South Asia region to go nuclear and it maintains a voluntary moratorium on nuclear testing and has also pledged to be not the first country to resume nuclear testing.

⁸ A. H. Nayyar, "Nuclear Non-Proliferation: Pakistani Perspective," FES Briefing Paper, August 2008, <<https://library.fes.de/pdf-files/iez/global/05652.pdf>, accessed July 27, 2023>.

While Pakistan's position on the CTBT's ratification has been consistent over the years, it has expressed its reservations about the way global powers are pursuing arms control and disarmament. Pakistan considers that ending discriminatory non-proliferation practices in South Asia will facilitate the objectives of the global nonproliferation regime, including CTBT. Likewise, the regional strategic dynamics have also shaped Pakistan's policies and choices regarding the role of nuclear weapons in the maintenance of strategic stability in the region. India is undergoing a strategic build-up. Pakistan believes that unilateral ratification without India doing the same is detrimental to its security.

Pakistan sees that there are gaps in India's positions and actions regarding CTBT. It also believes that India is keeping the option of resuming nuclear testing open. The non-testing norm was broken by India in May 1998, and it may resume testing because there will be potentially lesser costs due to its increasing convergence of Western interests with India. In this regard, a report in 2022 tries to create grounds for India's nuclear testing in the future by justifying it with some 'supreme emergency' and China's nuclear expansion.⁹ Other voices in the Indian scientific community also call for resumed nuclear testing to achieve a reliable and proven thermonuclear arsenal.¹⁰ India tested a thermonuclear bomb in 1998 which its leading scientist later claimed to be a fizzle.¹¹ Meanwhile, India may have other technical reasons to test nuclear weapons as it is developing its nuclear triad and counterforce targeting capabilities that require new designs and more warheads. In addition, the political motive for India to test a thermonuclear bomb is status-driven like its entire nuclear weapons program.

Overall, Pakistan views Indian nuclear policy in the region as a direct threat. Therefore, Indian strategic developments, the role of big powers, and consequent regional security and the political situation may shape Pakistan's choices.

Egypt

While Egypt signed the CTBT in 1996, it has adopted a seemingly ambiguous stance vis-à-vis the treaty and consistently refused to take steps toward ratification. There are reasons to believe that, consistent with the Egyptian position on several other disarmament and arms control treaties, the main inhibiting factor must be the possession of nuclear weapons by Israel and the latter's reluctance to engage in any serious negotiations addressing this possession. Accordingly, assessing the direct impact of the US ratification of the CTBT vis-à-vis Egypt's stance is challenging.

Egypt's reluctance to ratify the CTBT largely results from factors unrelated to the US stance. The most important factor, as already mentioned, is the Israeli nuclear status. Another, probably less important, is the regional strategic competition with Iran. For more than two decades, as recalled during the 2022 NPT RevCon, Cairo has consistently conditioned its

⁹ Ashley J. Tellis, "Striking Asymmetries: Nuclear Transitions in Southern Asia," Carnegie Endowment for International Peace, July 18, 2022, <<https://carnegieendowment.org/2022/07/18/striking-asymmetries-nuclear-transitions-in-southern-asia-pub-87394>, accessed July 27, 2023>.

¹⁰ Jay Desai, "SubscriberWrites: India must revive its nuclear testing programme if it is to offer China a credible deterrent," The Print, June 5, 2021, <<https://theprint.in/yourturn/subscriberwrites-india-must-revive-its-nuclear-testing-programme-if-it-is-to-offer-china-a-credible-deterrent/672454/>, accessed July 27, 2023>.

¹¹ K. Santhanam and Ashok Parthasarathi, "Pokhran-II thermonuclear test, a failure," The Hindu, September 17, 2009, <<https://www.thehindu.com/opinion/op-ed/Pokhran-II-thermonuclear-test-a-failure/article13736892.ece>, accessed July 27, 2023>.

ratification of the CTBT to Israel's accession to the NPT and the verification of Israeli and Iranian unchecked nuclear installations.

There is a possibility that the US ratification might impact Egypt's stance, however indirectly. Egypt's reservations regarding the ratification of the CTBT have been in the context of the regional neighbour, Israel.¹² If the United States chooses to ratify the CTBT, it could prompt Israel to take a step forward and enter into the conversation regarding the ban on nuclear testing. Israel and the United States have been long-standing security allies¹³ and the ratification of the CTBT by both these countries would significantly alter the nuclear threat perception in the Middle East. Cairo endorses a prominent disarmament and non-proliferation stance and frequently promotes the CTBT on the international scene: in its recent statement on behalf of the New Age Coalition¹⁴ at the 2022 NPT RevCon, Egypt notably supported the principles and goals of the relevant Treaty.

Considering that none of these regional security-related conditions have been met, the U.S. ratification of the CTBT is unlikely to have a direct influence on Egypt. Yet, the US ratification may help unlock regional dialogue in the Middle East on the issue of the CTBT, which would be the most adequate prescription to achieve Egyptian, Iranian and Israeli ratification of the CTBT.

Democratic People's Republic of Korea

DPRK is obviously a very difficult case in the CTBT context. It announced withdrawal from the NPT, obtained nuclear weapons and delivery vehicles, constantly improved its warheads and missiles and it is now close to becoming a direct nuclear threat to the US. It would be naive to suggest, that the U.S. ratification of the CTBT would produce an immediate impact on the DPRK's willingness to follow suit. As with several other cases addressed in this article, regional security considerations are playing a much more important role in this case. Furthermore, the regional security framework is rapidly deteriorating because of rising tensions in the Korean peninsula, but also because of the military tensions in the Pacific region.

Yet, one should not ignore the fact that in the context of earlier efforts and talks to defuse the situation on the Korean peninsula, the DPRK did accept a moratorium on nuclear testing. Although DPRK has withdrawn this commitment, the de-facto moratorium still stands and the DPRK has not conducted a new nuclear test. There may be some reason to suggest that the continuation of such a moratorium and even signature /ratification by the DPRK of the CTBT may become subject to discussion as steps are taken in some regional confidence and security-building processes. But for that to happen many conditions must be met, and among them – ratification of the CTBT by the US and China. Thus, indirectly, the U.S. ratification might play a positive role with respect to DPRK decisions, but clearly, it alone would not be sufficient to make a real difference.

¹² Egypt sets the terms for signing the CTBT (2005). Associated Press, <<https://www.arabnews.com/node/272123>, accessed July 27, 2023>.

¹³ Lewis, S.W. (1999) The United States and Israel: The evolution of an unwritten alliance. *The Middle East Journal*.

¹⁴ Statement by Egypt (2022) New Agenda Coalition. NPT Review Conference 2022, <https://estatemnts.unmeetings.org/estatemnts/14.0447/20220804/TEbL4TnUYGys/qqapxko09zAv_en.pdf, accessed July 27, 2023>.

CONCLUSION

The U.S. ratification of CTBT can be a powerful factor to generate some momentum for its entry into force. But instead of a straight domino effect on remaining States, regional dynamics will be at play, and at least in some cases they would predetermine the outcomes. Each respective region of Annex 2 State has fairly unique security and political dynamics. While remaining Annex 2 States may not be willing to sign/ratify the CTBT unless their concerns are addressed, the U.S. ratification will create much more favorable conditions for CTBT diplomacy, focused on the Treaty's entry into force.

Understanding Non-Annex 2 States: Factors which Impede Joining the CTBT

■ Alice Saltini ■ Ian Fleming Zhou

ABSTRACT

The Comprehensive Nuclear-Test-Ban Treaty (CTBT) faces challenges in achieving its entry into force due to the non-ratification of eight remaining Annex 2 States. To explore alternative strategies in order to regain momentum towards the Treaty's entry into force, understanding the obstacles to joining the CTBT for Non-Annex 2 States is crucial. This paper identifies internal and external factors impeding the signature or ratification by these states. Internal factors include regional complexities, political instability, civil unrest, and ongoing conflicts, diverting attention from the CTBT. External factors include perceived inequalities in disarmament efforts and limited engagement with Non-Annex 2 States. The influence of Annex 2 States, such as the US, on ratification progress is also significant. Limited economic, diplomatic, and legal capacity poses additional challenges for developing countries. However, recent positive developments demonstrate that some states have overcome these obstacles and joined the CTBT. The paper highlights the importance of addressing internal and external factors, promoting disarmament efforts, and enhancing engagement with Non-Annex 2 States. By understanding and addressing these obstacles, the CTBT can gain further momentum and work towards its universalization, leading to a nuclear-test-free world.

INTRODUCTION

After almost 27 years since the opening for signature of the CTBT, the Treaty's entry into force still faces major challenges. This is due to the fact that CTBT ratification by the eight remaining Annex 2 States (China, DPRK, Egypt, India, Iran, Israel, Pakistan, and the United States) is required for the Treaty to enter into force; however, none of these countries appears to be in a position to consider joining the CTBT.

While prospects for new signatures or ratifications by Annex 2 States in the near future are dim, the Preparatory Commission for the CTBTO has significantly concentrated its efforts towards achieving universal adherence to the Treaty: that is, ratifications by all States, including those not listed in Annex 2 of the Treaty. This is rooted in the understanding that every ratification bears a strong political message,¹ one that manifests the intention of the international community at large to see the Treaty enter into force and thus become a legally-binding norm against nuclear weapons testing.

With this in mind, a question rises, whether, in the absence of political will in some remaining Annex 2 States to proceed with the signature or ratification of the CTBT, a different strategy to further Treaty's entry into force could be explored. Acknowledging every country's concerns

¹ "High-Level Plenary Meeting of the United Nations General Assembly to Commemorate and Promote the International Day Against Nuclear Tests." Rappresentanza Permanente d'Italia ONU New York, September 7, 2022. <https://italyun.esteri.it/it/news/dalla_rappresentanza/2022/09/high-level-plenary-meeting-of-the/, accessed, 10 July, 2023>.

and positions, including those not deemed essential for the Treaty's entry into force, is essential to strengthening the momentum towards a nuclear-test-free world. To prove this, the numerous ratifications achieved by Non-Annex 2 States demonstrate a revival of a new political momentum towards the CTBT, with a view to overcoming the impasse of the Treaty's entry into force (thus, achieving further ratifications from Annex 2 States).

As of July 2023, out of a total of 196 States, the CTBT had been signed by 186 countries and ratified by 178. Between March 2022 and July 2023, eight countries successfully completed the Treaty's ratification, leaving only 18 countries before the Treaty's universalisation. Eight of these are Annex 2 States.

Factors that impede the signature or ratification of the CTBT by the remaining 10 Non-Annex 2 States have not been easy to determine, due to the lack of information on details of national positions towards the CTBT. In light of this, obstacles that impede ratifications by Non-Annex 2 States have been identified by conducting interviews with diplomats or by interviewing leading experts in the field. Obstacles to joining the Treaty can be broadly identified within two main baskets: internal and external factors. Both baskets are non-static, and reasons for States to not join the Treaty may swing depending on particular historical moments or specific political administrations.

INTERNAL FACTORS

Regional complexities

Political instability and civil unrest were identified as some of the main factors that impede the signature or ratification of the CTBT for some Non-Annex 2 countries. Civil wars, political turmoil, ongoing conflicts and territorial disputes, prevent the Treaty from becoming a priority on the countries' political agenda. In principle, this does not mean that these countries are opposed to the CTBT. However, their priorities largely focus on putting an end to ongoing conflicts or regaining political stability. This is an obstacle that is particularly difficult to tackle because the absence of national stability means that the CTBT does not represent a pressing issue for the country. Thus, these countries are unlikely to consider joining the Treaty after dealing with more pressing issues. This is the case for Yemen and Syria, for example.

Saudi Arabia has fuelled suspicions of a clandestine nuclear program through its military cooperation with states that have sought or possessed nuclear weapons.² Even though Saudi Arabia has denied any clandestine nuclear relations with Pakistan and allegations of non-peaceful intentions, officials from the United States and Europe have raised concerns that Pakistan's nuclear weapons program may have received financing from Saudi Arabian sources.³ It is argued by some that Saudi Arabia's nuclear ambitions are mostly motivated by the need to counter Iran's nuclear program: firstly, Iran's alleged capability to develop a nuclear weapon is considered the biggest threat to Saudi national security, because it would

² Noah Feldman, "Islam, Terror and the Second Nuclear Age", *The New York Times*, October 29, 2006. <<https://www.nytimes.com/2006/10/29/magazine/29islam.html?adxnnl=1&adxnnlx=1162227653-cobsSn56TpBw w3rFJbexdQ&pagewanted=all>, accessed July 10, 2023>.

³ Mark Hibbs, "Saudi Arabia's Nuclear Ambitions," *Carnegie Endowment for International Peace*, July 20, 2010, <<https://carnegieendowment.org/2010/07/20/saudi-arabia-s-nuclear-ambitions-pub-41243#4> 2011, accessed July 10, 2023>.

determine a radical shift in the regional balance of power⁴; secondly, Israel's possession of nuclear weapons and refusal to join the NPT is another factor that threatens Saudi security.⁵ Thus, Saudi Arabia's prospects of joining the CTBT in the near future appear slim. However, as strategic interests and regional balance evolve, recent regional developments, such as the restoration of diplomatic relations between Saudi Arabia and Iran⁶, might prompt Saudi Arabia to eventually re-evaluate its position towards the CTBT.

The case of Saudi Arabia is only one example of countries in the Middle East and South Asia (MESA) group that argue that such regional complexities prevent them from signing or ratifying the Treaty. Even though the above discussion has pointed out that countries with internal political disputes and ongoing conflicts have other urgent priorities prior to considering joining the CTBT, there are exceptions. For instance, despite major protests that took place in Colombo, Sri Lanka from March 2022,⁷ and its current focus on regaining economic stability, Sri Lanka deposited the instrument of ratification of the Treaty at the UN Headquarters in New York on 25 July 2023, becoming the 178th State to ratify the CTBT.⁸

Somalia is a country in dire conditions due to its state of war, the worst drought in history, and an impending famine.⁹ Yet Somalia's Speaker of Parliament called for the signing of the CTBT and acknowledged the importance of the Treaty and its benefits. At the CTBT Science and Technology Conference 2023, Mr Abshir Omar Jama, Minister of Foreign Affairs and International Cooperation of Somalia, stated that despite unique national circumstances, Somalia is going to sign the CTBT and pave the way to its ratification.¹⁰ At the same event, the Undersecretary of the Ministry of Foreign Affairs and International Cooperation of South Sudan, Mayen Dut Wol, also pledged to sign and ratify the Treaty in the near future. It is important to put this into perspective: while technically no longer in a state of civil war, South Sudan is still facing increasing intercommunal violence and an extremely dire humanitarian crisis due to famine and the effects of climate change.¹¹

⁴ Kingston Reif, "Saudi Arabia Threatens to Seek Nuclear Weapons." Arms Control Association, June 2018. <<https://www.armscontrol.org/act/2018-06/news/saudi-arabia-threatens-seek-nuclear-weapons>, accessed July 10, 2023>.

⁵ Saudi Arabia sees a nuclear-armed Iran as an existential threat. Some Saudi officials believe that if the country establishes its own nuclear power program, the Kingdom will enjoy greater influence over the region's nuclear development, including vis-à-vis Iran. See Mark Hibbs, "Saudi Arabia's Nuclear Ambitions".

⁶ "Joint Trilateral Statement by the Kingdom of Saudi Arabia, the Islamic Republic of Iran, and the People's Republic of China", March 10, 2023, <<https://www.spa.gov.sa/w1867376> accessed July 10, 2023>.

⁷ Devana Senanayake, "Where Does Sri Lanka's Protest Movement Go From Here?," April 21, 2023, <<https://thediplomat.com/2023/04/where-does-sri-lankas-protest-movement-go-from-here/>, accessed July 10, 2023>.

⁸ "Sri Lanka ratifies Comprehensive Nuclear Test-Ban Treaty", Sri Lanka Media Release, July 27, 2023, <<https://srilankaembassy.at/news/sri-lanka-media-release/sri-lanka-ratifies-comprehensive-nuclear-test-ban-treaty-ctbt/>, accessed July 10, 2023>.

⁹ "Crisis in Somalia: Catastrophic hunger amid drought and conflict", December 13, 2022, <<https://www.rescue.org/article/crisis-somalia-catastrophic-hunger-amid-drought-and-conflict#:~:text=Somalia%20is%20in%20the%20midst,country%20faces%20an%20impending%20famine>, accessed July 10, 2023>.

¹⁰ Statement by H.E. Mr Abshir Omar Jama, Minister of Foreign Affairs and International Cooperation of Somalia 1:12:40, <<https://www.youtube.com/watch?v=1r-f5wmcGw>, accessed July 10, 2023>

¹¹ "South Sudan: Hunger, conflict and climate crisis", International Rescue Committee, April 10, 2023, <<https://www.rescue.org/article/south-sudan-hunger-conflict-and-climate-crisis>, accessed July 10, 2023>.

These statements represent a remarkable step towards advancing the Treaty from countries deemed to have little to no chance to consider joining the CTBT due to their internal circumstances. This sets a positive example that should not be overlooked. With the same logic, the CTBTO should continue to conduct outreach activities with countries that are perceived to have limited prospects of signing or ratifying the Treaty. Thus, there is room for Syria, Saudi Arabia, and Yemen (the latter a long-standing supporter of the CTBT in spite of its domestic conflict) to continue being reminded of the significance of the CTBT.

Perceived inequalities and the issue of disarmament

Additionally, some countries accused the Treaty of a perceived lack of meaningful commitment to bring about nuclear disarmament and of allowing some countries to continue their nuclear weapons-related research and development activities using non-explosive technologies.¹² For instance, in 1996, the draft Treaty was presented to the UN General Assembly as a national paper by the Australian government and co-sponsored by 126 other countries. India, a non-signatory Annex 2 State, proposed the inclusion of a paragraph in the preamble stating that the CTBT is seen as an “integral part of the commitment of the international community to achieve a complete elimination of all nuclear weapons within a time-bound framework”.¹³ However, the nuclear-weapons states (NWS) were averse to any such commitment, and the final Treaty fell far short of most countries’ expectations, which led some Non-Annex 2 countries like Bhutan to vote against the resolution. Reportedly, there was already dissatisfaction from Bhutan with the Treaty itself around the issue of disarmament; however, the country’s decision not to sign the Treaty could also be influenced by its amicable ties with India. Nevertheless, Bhutan is a case on its own. Other factors might impede its ratification, as explored further in this paper.

As a result of these perceived inequalities, the CTBT has been blamed for perpetuating the existing discriminatory status quo.¹⁴ This was one of the stated problems that India had with the Treaty at its inception in 1996. Bhutan supported India’s position also because of the divide between nuclear powers and non-nuclear-weapon states (NNWS). The suspicion of different treatment and certain rules applying to others and not the minority with nuclear arsenals needs to be addressed. This could mean installing more faith in the Treaty’s stance on disarmament. It can be suggested that the Treaty’s supposed imbalances are outweighed by its technical contributions to nonproliferation through limiting weapons programs. Opponents believe that a strong nuclear deterrent is essential for nonproliferation and that nonproliferation and disarmament are unrelated.¹⁵ Thus, some NNWS, particularly Non-Annex 2 States, might feel distrustful of the Treaty, and the distrust could influence their decisions to not ratify or sign the Treaty.

In the past, distrust was common among some of the CTBT’s Non-Annex 2 states based on the perceived inability of the Treaty to bring about effective, verifiable disarmament

¹² Manpreet Sethi, “Indian signature on the CTBT: What’s the hurry?”, April 25, 2008, <<https://www.tandfonline.com/doi/abs/10.1080/09700160008455163?journalCode=rsan20>>. accessed July 10, 2023>.

¹³ Manpreet Sethi, “CTBT and India’s Options.” Strategic Analysis 24, no. 6, September, 2000: 1077–89, <<https://doi.org/10.1080/09700160008455270>>, accessed July 10, 2023>.

¹⁴ “Statement by the Minister of External Affairs Shri I.K. Gujral”, September 11, 1996, https://eparlib.nic.in/bitstream/123456789/65888/1/11_II_11091996_p206_p207_T302.pdf, accessed July 10, 2023>

¹⁵ “US Official Reiterates White House Support for Comprehensive Nuclear-Test-Ban Treaty.” Physics Today, June 14, 2016, <<https://doi.org/10.1063/pt.5.029896>>, accessed July 10, 2023>.

measures. Nuclear nonproliferation and arms control treaties have been prone to be violated¹⁶. The Middle East's historical experiences with treaty violations and a lack of faith in nuclear and arms control agreements have contributed to a regional atmosphere of skepticism and caution, possibly influencing Non-Annex 2 states' decisions regarding participation in such agreements¹⁷. For instance Syria's failure to sign the CTBT serves as a case in point. The decision can be attributed not only to the complex regional dynamics but also to a broader lack of confidence in the efficacy of international agreements¹⁸. The internal political turmoil within Syria further compounds this skepticism, as the country navigates its own domestic challenges that impact its foreign policy decisions. A number of nonproliferation treaties and arrangements were violated by the countries of the region, while chemical weapons were used a few times in the region during the recent decades¹⁹.

Other reasons

The issue of Diego Garcia²⁰ is arguably the reason why Mauritius is not a party to the CTBT.²¹ Mauritius has been very vocal about how it wants to regain control of the Chagos Archipelago, which comprises Diego Garcia. According to statements from the Permanent Representative of Mauritius, Usha Dwarka-Canabady as well as from the League of Arab States during the CTBT Preparatory Commission, it can be inferred that the Island nation's refusal to sign the Treaty is arguably linked to the sovereignty of Diego Garcia.²²

EXTERNAL FACTORS

Limited engagement between the CTBTO and the Non-Annex 2 States

Throughout the years, the emphasis had been on directing the efforts towards securing additional ratifications from Annex 2 States. While this objective remains crucial, it inadvertently led to a decrease in the priority given to the CTBT among numerous Non-Annex 2 States. As a result, the commitment to pursue new ratifications began to wane.

Nevertheless, depending on countries' political structures, seeking the Treaty's legal ratification requires considerable time and effort. Therefore, if countries are not reminded of the urgency of the CTBT's entry into force and universalization, or if they do not believe the accession to the Treaty is in their best interests, they might simply not make the effort of seeking ratification. Until August 2021, the CTBTO's major focus on Non-Annex 2 states was one of the main factors that impeded many Non-Annex 2 States from joining the Treaty.

¹⁶ Richard L. Williamson Jr., «Hard Law, Soft Law, and Non-Law in Multilateral Arms Control: Some Compliance Hypotheses,» *Chicago Journal of International Law* 4, no. 1 (Spring 2003): 59-82

¹⁷ Patricia M. Lewis, "A Middle East Free of Nuclear Weapons: Possible, Probable or Pipe-Dream?" *International Affairs* 89, no. 2 (March 2013): 433–50. <<https://doi.org/10.1111/1468-2346.12026>, accessed July 10, 2023>

¹⁸ Maria Dubovikova, "International agreements on Syria will prove worthless." *Al Arabiya*, September 29, 2016, <<https://english.alarabiya.net/views/news/middle-east/2016/09/29/International-agreements-on-Syria-will-prove-useless>, accessed August 24, 2023>.

¹⁹ *Ibidem*.

²⁰ Diego Garcia is a remote US base that regularly hosts US nuclear-powered cruise missile submarines (SSGNs) and submarine tender ships. The UK leased the Island to the US and has been increasingly under pressure to cede it back to Mauritius. See Samuel Matthews Bashfield "Mauritian sovereignty over the Chagos Archipelago? Strategic implications for Diego Garcia from a UK-US perspective," *Journal of the Indian Ocean Region*, 2000, 16:2, pp.166-181.

²¹ Interview with a CTBT expert conducted under the Chatham House rules on 29 December 2023.

²² Statement of Usha Chandnee Dwarka-Canabady, Permanent Representative of Mauritius, 59th Session of the CTBTO Preparatory Commission, Vienna, 21-23 November 2022.

The current outreach and engagement strategy towards Non-Annex 2 States prompted a new wave of CTBT signatures and ratifications, which greatly contributed to building further momentum towards the Treaty's entry into force. Thus, this obstacle has largely been overcome for several Non-Annex 2 States, as proven by the numerous ratifications that occurred during the year of celebration of the CTBT's 25th anniversary. With the ratification by the Solomon Islands and the announcement by Papua New Guinea of its intention to speed ratification of the CTBT, the South-East Asia, Pacific, and Far East (SEAPFE) region is fast approaching universal adherence to the CTBT, leaving only Tonga outside of the equation. Tonga's reasons for not joining the CTBT are at present still unclear, yet, as a country located in a region that greatly suffered from the consequences of nuclear weapons tests, it should have enough incentives to sign the Treaty given its historical baggage. Considering that Tonga did not voice any particular concern about the CTBT, and considering its relatively stable state of internal affairs, it is reasonable to assume that the country does not have impending priorities that would slow down or impede its signature.

Limited economic, diplomatic and legal capacity

A vast majority of Non-Annex 2 States that have yet to sign or ratify the Treaty are small countries, sometimes with disputed territories and ongoing conflicts, and are generally developing countries or even part of the least developed countries.²³ As such, the economic availability of these countries is extremely limited. Although the economic contribution of each State Signatory in support of CTBT activities and verification regimes reflects the countries' GDP (in some cases, the contribution requested amounts to 0,001%), some countries may still see this as an obstacle to their signature, but possibly not the driving force.

Hesitance might occur when the honorary roll and the status of annual contributions lie in the public domain through an easily accessible database on the Preparatory Commission website.²⁴ CTBT member states are expected to contribute financially to support the organization's activities, including the establishment and maintenance of monitoring stations and equipment to detect nuclear explosions²⁵. These financial contributions are meant to ensure the effective functioning of the CTBTO's monitoring and verification systems. Should some state fail to contribute to its annual financial obligation on time, it will be reflected on the honorary roll. Firstly, it is important to note that this reason might only affect Non-Signatory States, as the others are already expected to submit their annual contribution to the CTBTO. However, even in the event that a State Signatory cannot submit its contribution for a particular reason, this will affect voting rights. Access to and use of the CTBT's International Monitoring System (IMS) related data will not be revoked. Although non-submission of countries' economic contributions is highly discouraged (a severe lack of funding would clearly limit CTBTO activities), it is worth understanding this point.

Some states with limited economic resources have also pointed out legal obstacles. Although the Commission provides legal support to countries in view of incoming signatures or ratifications, some countries find it difficult to locate lawyers with the necessary expertise to navigate the legal requirements for the signature or ratification of international treaties.

²³ "UN list of least developed countries", <<https://unctad.org/topic/least-developed-countries/list>, accessed July 10, 2023>.

²⁴ Interview by the authors with a former CTBTO official conducted on 5 January 2023.

²⁵ Fukui, Yasuhito. «CTBT: Legal Questions Arising from Its Non-Entry into Force Revisited.» *Journal of Conflict and Security Law* 22, no. 2 (2017): 183-200.

As a result of the limited economic capacity, some of the remaining Non-Annex 2 states have a limited amount of personnel and resources available within each diplomatic representation. Due to a lack of funds, some of the Permanent Missions or diplomatic representations are not located in Vienna, where the Organization's headquarters are. Frequently, these diplomatic representations have demonstrated limited responsiveness to emails and note verbale. During the interviews conducted for this paper, we found that some Permanent Missions in Vienna were not very responsive. However, it's also worth noting that some of these representations might have intentionally chosen not to respond. This category includes most of the hold-out Non-Annex 2 States, including those that have recently ratified the CTBT. In some cases, this overlaps with regional complexities and the political environment, however, we have discovered that each country has its own specific case, and a generalization is thus fairly inaccurate. Each country needs its own individual evaluation in light of potential incoming ratifications.

The influence and the special role of Annex 2 States

Ratification by the US is often characterized as the key to progress on signature and ratification as a whole. However, it should be noted that CTBT non-ratification by the US primarily affects Annex 2 states at a deeper level than Non-Annex 2 states. It is generally argued that the US ratification is necessary to trigger a wave of successive ratifications or accessions.²⁶ The failure of a nuclear-weapon state like the US to ratify the Treaty might be discouraging to a state that already does not have nuclear weapons or power and thus feeds into the perceived inequalities felt by some states.²⁷ Furthermore, in an analysis of Non-Annex 2 States, one cannot fully separate Annex 2 and Non-Annex 2 states due to the influences that the two groups of states might have on each other. For instance, the stances of Annex 2 states, such as India, may have an impact, either voluntary or involuntary, on countries like Bhutan and Mauritius and influence their perspectives towards the CTBT.

RECOMMENDATIONS

The CTBT is a Treaty that offers great benefits to its members. Not only do new signatures further the nonproliferation and disarmament agenda, showing commitment to a legally binding norm against nuclear weapons tests, but they also provide access to data through the Treaty's verification system that allows states to monitor environmental impact as a result of climate change as well as issue public safety warnings. New ratifications show strong political commitment by state signatories to the ultimate goal of a world free of nuclear weapons tests.²⁸ The following recommendations aim at leveraging these benefits to further the CTBTO's agenda and achieve new signatures and ratifications.

Advance capacity building and highlight civil and scientific applications of IMS data to attract signatures from countries affected by natural disasters.

Investing in capacity building, particularly in scientific and technical fields, has the potential to be extremely beneficial in the advancement of CTBT universalization. In addition to

²⁶ Kaegan McGrath, "Verifiability, reliability and National Security." *The Nonproliferation Review* 16, no. 3, October 14, 2009, pp. 407-33.

²⁷ Thus, former British Prime Minister Tony Blair, former President Jacques Chirac and Chancellor Gerhard Schroeder voiced out in an op-ed that rejection of the Treaty in the Senate would remove the pressure from other states still hesitating about whether to ratify it. See Winston P. Nagan & Erin K. Slemmen "National Security Policy and Ratification of the Comprehensive Test Ban Treaty", 32 *Hous. J. Int'l L.* 1, 2009, p. 40.

²⁸ As already mentioned, state signatories can already access IMS data without necessarily ratifying the CTBT.

detecting nuclear weapons tests, the IMS generates data that is utilized for civil and scientific purposes, which range from issuing an early tsunami warning or tracking potentially harmful fallout from a nuclear accident to expanding our knowledge on Earth science and climate change effects.²⁹ As new applications for the IMS continue to be discovered and discussed at the annual symposia, it represents a promising area for young and talented scientists to explore. By opening the doors to young scientists from developing countries who are interested in the applications of IMS data, states that have yet to join the CTBT may be further incentivized to do so. To that end, the CTBT has been organizing training courses for technical experts from developing countries³⁰. Participants express interest in using this data for purposes particularly relevant in their country (for example monitoring dynamite fishing or illegal mining).³¹ This highlights the significance of ongoing and future efforts to offer opportunities to developing countries that could greatly benefit from utilizing IMS data. Additionally, providing opportunities for these scientists to compete for vacancies at the Provisional Technical Secretariat could be of further appeal to these countries.

To that end, one possible way ahead would be to launch scientific and technical cooperation initiatives with the Non-Annex 2 States that have yet to sign the Treaty with the goal of demonstrating how to benefit from IMS data. For instance, the Preparatory Commission could run simulations or exercises to demonstrate the efficacy of IMS in detecting earthquakes and tsunamis, among other things. This would highlight the invaluable asset of the CTBT verification regime and would likely place the Treaty's signature among their priorities. Such initiatives could take place under the auspices of the respective regional offices of the United Nations Office for Disaster Risk Reduction (UNDRR), and the United Nations Environment Programme (UNEP), respectively. Alternatively, the Preparatory Commission can invite countries to appoint scientists or technical experts of their choice for a tour of CTBTO's facilities in Vienna.

Advancing the CTBT by appealing to social and religious values

Another way to further CTBT ratification and signatures is to appeal directly to certain cultural and religious values. While the harmful effects of nuclear weapons tests are generally well recognized within countries, political reasons for not signing or ratifying the Treaty (if present) tend to gain the upper hand. However, some of the hold-out Non-Annex 2 States have strong social and religious values based on peace, tolerance, and environmental conservation, which adhere very well with the foundations and end goals of the CTBT. For instance, Bhutan is well known for its philosophy of promoting Gross National Happiness over Gross Domestic Product. The concept implies that sustainable development should give equal importance to non-economic aspects of well-being.³² Peace and environmental protection are at the forefront of Buddhist values, making environmental conservation one of the four pillars of Bhutan's Gross National Happiness (as mandated in its constitution, Bhutan preserves at all times 60 percent of its land under forest cover). This draws clear parallels with CTBT's foundational goals.

²⁹ "Civil and Scientific Applications", <<https://www.ctbto.org/our-work/civil-and-scientific-applications>, accessed July 10, 2023>.

³⁰ Capacity Building Course for Developing Countries, <<https://www.ctbto.org/news-and-events/news/capacity-building-course-developing-countries>, accessed July 10, 2023>.

³¹ Capacity Building Course for Developing Countries, <<https://www.ctbto.org/news-and-events/news/capacity-building-course-developing-countries>, accessed July 10, 2023>.

³² "Bhutan's National Gross Happiness Index", Oxford Poverty and Human Development Initiative, <<https://ophi.org.uk/policy/bhutan-gnh-index/>, accessed July 10, 2023>.

Nepal is also in a similar situation. Most of the Nepalese population professes Hinduism and with that the ideals of compassion, peace and non-violence. Even the principles of Muslim countries (like Saudi Arabia, Somalia, Syria and Yemen) invite its disciples to a peaceful life and coexistence. Therefore, it is reasonable to assume that appealing to social and religious values that align with CTBT goals can be an angle from which to implement support for further signatures or ratifications. Statements from highly-regarded public figures or religious leaders on the importance of the CTBT from a peace perspective and, more specifically, on the detrimental effects of nuclear tests, would have a strong impact on most of these countries. Although this may not be enough for all hold-out Non-Annex 2 States to ratify the Treaty, particularly those with severe ongoing conflicts or with strong political reasons against the CTBT, it can certainly help to shift the countries' mindset on the Treaty to one that will, eventually, unconditionally align with peace, disarmament and environmental conservation.

Civil society as a CTBT advocate

Another commonality between most of the Non-Annex 2 States is the lack of civil society dialogue surrounding CTBT issues. There is very limited regional (South East Asia and the Middle East) expertise in nuclear nonproliferation and disarmament in most of the hold-out Non-Annex 2 countries, with little to no think tank dedicated to nuclear nonproliferation and disarmament. Encouraging civil society dialogue would be a way to tackle the unresponsiveness. This could be facilitated by encouraging outreach programs by CTBTO and Friends of the CTBT. Tracks 1.5 and 2 initiatives could be used to continue engagement within the regions.

However, CTBTO's direct involvement with civil society organizations should be cautious: for instance, engagement with civil society activists that strongly call for unconditional nuclear disarmament can be a double-edged sword for the Organization.³³ The CTBTO should maintain a balanced approach towards all states without exception. With this in mind, engagement with civil society organizations can occur through other supporting networks, such as the CTBTO Youth Group. As an example, this group can partner with other youth organizations in order to promote CTBT-related dialogue in respective countries. In the same vein, the CTBTO can take advantage of its Group of Eminent Persons (GEM) members.

CONCLUSIONS

Only a few obstacles remain to achieve full adherence to the Treaty from Non-Annex 2 States. Once achieved, only signature or ratification from remaining Annex 2 States will be outstanding, leaving the burden of CTBT universalization and entry into force to just a handful of countries. In light of this, Non-Annex 2 States have a particularly crucial role to play in the wider scheme, and their individual national positions should be acknowledged and addressed accordingly.

Altogether, the CTBT can serve as a catalyst for renewed commitment among nuclear-weapon states. The nuclear non-proliferation regime should be strengthened on the basis of non-discrimination; address the legitimate concerns of all states; accommodate present realities and become a real and practical foundation for a world free of the threat of nuclear weapons. The CTBT should continue to play a leading role in limiting nuclear weapons developments, followed by a legally binding ban on nuclear testing and a move towards comprehensive global disarmament.

³³ This is a merely hypothetical example. Any reference is purely coincidental.

Additionally, the CTBT has the potential to be more than what was originally envisaged by many. The potential held by the CTBT is immense and not fully realized by all countries. The CTBT did, indeed, create the foundation of a strong taboo against nuclear tests, a milestone on a path towards nuclear disarmament. However, while the success of the CTBT is undeniable, it also provides ample reasons that can be used by countries, particularly Annex 2 States, to avoid feeling compelled to seriously seek the Treaty's ratification. If the Treaty achieved its intended meaning, this does not mean that it is secure: without the CTBT's entry into force, it is left open to greater risks in the future. The international community needs the CTBT to become a legally binding norm against nuclear weapons testing, particularly at a time when the polarization of the nuclear "haves" and the nuclear "have-nots" became so evident. We envisage the Treaty as a bridge builder between NWS that failed to take further steps towards disarmament, as per their obligations under Article VI of the NPT, and NNWS that rightfully demand these obligations to be met. If external conditions and the political climate do not allow for drastic disarmament measures, something still has to be done to show serious commitment towards the end goal of a nuclear-weapons-free world. The CTBT, after all, does not represent a drastic measure, and all states (both Annex 2 and not) have a much bigger interest in promoting the Treaty's entry into force than they possibly imagine.

IMS Stations in the Middle East as a Regional Confidence-Building Measure

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 ■ Youssef Hosny Mohamed ■ Queiroz E. Portorreal Alcántara

ABSTRACT

The purpose of this paper is to explore, whether (and in which way) some already existing elements of the future CTBT implementation infrastructure can be employed to help promote confidence building measures on a regional scale. In particular, the paper focuses on the International Monitoring System (IMS), together with its facilities, which constitute a key element of the Treaty's verification and compliance system, and much of which has already been built and is operational. The region selected is that of the Middle East¹, although it does not correspond to the regional algorithm incorporated in the CTBT (the so-called Annex 1 designed to facilitate agreement on the future composition of the Executive Council). The Middle East is a region that is politically very complex, with many dividing lines and rivalries, unsettled borders, internal and international conflicts and animosities, many of which have contributed to the fact that a number of regional states (including two Annex 2 states) have not signed or ratified the CTBT. Within this framework, the paper explores confidence building measures from two angles – that of facilitating the entry into force of the Treaty and that of building trust among regional states more generally.

The main conclusion of the paper is that the already existing elements of the IMS can play a certain role in both respects, and that it would be advisable for the Preparatory Commission for the CTBTO to pay a closer attention to their potential.

CTBT, IMS AND THE MIDDLE EAST

In 1996, the United Nations General Assembly adopted the Comprehensive Nuclear-Test-Ban Treaty (CTBT), which – once in force – would outlaw all nuclear test explosions. Of the CTBT's 186 signatories, 178 have ratified the Treaty, which constitutes an overwhelming majority of states in the world.² However, that is not sufficient for the CTBT to enter into force, because, according to the Treaty itself, this can happen only when all forty-four states whose participation is deemed to be critically important (the so-called Annex 2 states), are on board the Treaty – among them China, Egypt, Iran, Israel, and the United States, which have only signed the CTBT, while the DPRK, India, and Pakistan have not signed yet. As far as the region of our interest is concerned, the situation is as follows: from among Annex 2 states, Egypt, Iran and Israel have signed, but not ratified the Treaty. Among the non-Annex 2 states, Saudi Arabia, and the Syrian Arab Republic have not signed. All other Middle Eastern countries have signed and ratified.

¹ For the purposes of this article, we have defined the Middle East as the region, which includes Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates (UAE), Yemen, and Cyprus.

² Comprehensive Nuclear-Test-Ban Treaty (CTBT), Status of Signature and Ratification, <<https://www.ctbto.org/our-mission/states-signatories>, accessed 31 July, 2023>.

The CTBT envisages a highly elaborate verification system with a number of checks and balances, which includes exchange of information, consultations, clarifications and on-site inspections. These verification instruments are typical for many other global arms control treaties. What distinguishes the CTBT in this respect, is the extraordinarily important role, assigned by the Treaty to the technical means of verification. They consist primarily of the International Monitoring System (IMS) and the International Data Center (IDC), which will be supervised and coordinated by the Provisional Technical Secretariat (PTS) of the CTBTO.³ The IMS will comprise facilities for seismological monitoring, radionuclide monitoring, including certified laboratories, hydroacoustic monitoring, infrasound monitoring and respective means of communications and spread around the world.⁴ Each monitoring facility utilizes one of the key technologies capable of detecting signs and after-effects of a nuclear test, as determined in the course of decades of negotiations and scientific research preceding the conclusion of the CTBT.

This system is complex, and the authors of the CTBT realized it could not be built immediately. Therefore, it had to be designed in detail and put in place (at least to a significant degree) before the entry into force of the Treaty. Otherwise, the verification system would not be able to perform its functions adequately, once the Treaty is in force. The Preparatory Commission for the CTBTO and its Provisional Technical Secretariat have done, with the support of many member states, a remarkable job building the IMS, deploying its various segments and testing its functionality.

However, even though the CTBT's advanced technical verification system is functional, the Treaty is still not in force, and thus, the system cannot be utilized to verify compliance. In this context, a multitude of ideas has emerged regarding the potential utilization of the IMS and its stations for other objectives. In the view of the authors, while other uses may be technically feasible (monitoring of earthquakes, tsunamis, major chemical explosions, certain climatic phenomena and trends), this should not be seen as an alternative to the CTBT-related uses. However, it might be possible to identify some secondary benefits that the IMS and its stations may offer, while ensuring they remain aligned with the aims of the CTBT.

The Middle East has been taken as an exemplar for analysis. As noted above, this is not an area singled out in the Annex 1 of the Treaty itself; rather, it is a geopolitical region with a unique set of challenging circumstances that, in some cases, impede the entry into force of the CTBT. This area should be home to 19 IMS stations, many of which already exist, and the significant number has been certified. Table 1 and Table 2 provide details of the IMS stations across the Middle East (see the Annex).

Utilizing IMS stations to address some of the obstacles impeding the expeditious entry into force

1. IMS stations in the Middle East could become additional platforms in the region to promote connections among relevant scientists and officials in the course of events devoted to the operation of the IMS. That may serve two distinct, yet related purposes – dispelling

³ "The Comprehensive Test Ban Treaty (CTBT)," The Center for Arms Control and Non-Proliferation, April 2021, <<https://armscontrolcenter.org/fact-sheet-comprehensive-test-ban-treaty-ctbt/>, accessed 31 July, 2023>.

⁴ "Overview of the Verification Regime", CTBTO, n.d., <<https://www.ctbto.org/our-work/verification-regime>, accessed 31 July, 2023>.

still remaining prejudices about IMS (perceived risk of abuse for espionage purposes) and, more broadly, promoting the CTBT in this complex region. The possibility of inviting representatives (scientists and experts) from non-signatory states – Saudi Arabia, and Syria – should be explored, considering primarily the technical nature of such events rather than their political implications. Such events could also serve as valuable (but not key) secondary instruments in facilitating the recently activated process of regional dialogue and, where possible, reconciliation.

2. Representatives from the Technical Secretariat could use such events for more active promotion of the CTBT in signatory and non-signatory states alike and use the feedback for better planning and other promotional activities in the region and beyond.

3. To a limited degree, the IMS stations in the region could be used to foster greater interest in cooperation among scientific communities of regional states on scientifically borderline issues, such as earthquakes or climate monitoring. The expected outcome could be a wider exposure of the CTBT to scientific communities in the concerned countries.

4. There should be more efforts to introduce the IMS and its stations to the media and universities. An opportunity to organize media tours, including both local and national media outlets and regional media “giants”, can also be explored.

ANNEXTable 1. IMS Stations in the Middle East⁵

(Compiled by the authors from the CTBTO dataset)

Stations	Number of stations and their percentage from the total number of stations of the same type worldwide	States	Code	Status	
Primary seismic	4 (8%)	Iran, Saudi Arabia, Egypt, Tunisia	PS	Certified	2
				Planned	1
				Installed	1
Auxiliary seismic	9 (7.5%)	Egypt, Morocco, Israel, Jordan, Saudi Arabia, Oman, Iran	AS	Certified	5
				Planned	1
				Installed	3
Infrasound	2 (3.3%)	Iran, Tunisia	IS	Certified	1
				Planned	1
				Installed	-
Radionuclide	2 (2.5%)	Libya, Kuwait	RN	Certified	1
				Planned	1
				Installed	-
Radionuclide with noble gas	1 (2.5%)	Iran	RN	Certified	-
				Planned	1
				Installed	-
Radionuclide Laboratories	1 (6.25%)	Israel	RL	Certified	1
				Planned	-
				Installed	-

⁵ "International Monitoring System Map," CTBTO, August 2021, <<https://www.ctbto.org/our-work/ims-map>, accessed 31 July, 2023 >.

Table 2. Stations at each Middle Eastern country and their status⁶
(Compiled by the authors from the CTBTO dataset)

State	Type of station	Code	Status
Iran	Primary seismic	PS21	Certified
	Auxiliary seismic	AS046	Installed
		AS047	Installed
	Infrasound	IS29	Installed
	Radionuclide with noble gas	RN36	Planned
Kuwait	Radionuclide	RN40	Planned
Oman	Auxiliary seismic	AS074	Certified
Saudi Arabia	Primary seismic	PS38	Installed
	Auxiliary seismic	AS096	Installed
Jordan	Auxiliary seismic	AS056	Certified
Israel	Auxiliary seismic	AS048	Certified
		AS049	Certified
	Radionuclide laboratories	RL09	Certified
Egypt	Primary seismic	PS16	Planned
	Auxiliary seismic	AS029	Planned
Libya	Radionuclide	RN41	Planned
Tunisia	Primary seismic	PS42	Certified
	Infrasound	IS48	Certified
Morocco	Auxiliary seismic	AS066	Certified

⁶ Ibid.

Prospects for Engaging the DPRK on the CTBT: Potential Approaches

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ABSTRACT

Being one of the Annex 2 states which have not signed and ratified the CTBT, the DPRK also possess nuclear weapons. Today, practically all efforts to find a solution to the nuclear problem on the Koreana Peninsula are frozen, there is no dialogue going on. Could the CTBT assist in breaking the nuclear ice in the region? This paper explores how engaging the DPRK on the issue of the CTBT may help with advancing dialogue in a new format without destroying old ones.

CONTEMPORARY FRAMEWORK OF ENGAGEMENT BETWEEN THE DPRK AND INTERNATIONAL REGULATORY MECHANISMS

The DPRK's situation vis-a-vis the Comprehensive Nuclear-Test-Ban Treaty (CTBT) is rather unique. To start with, this country is included in the Annex 2 of the Treaty and thus has a veto power on the entry into force of that Treaty. Not alone, of course, but together with other Annex 2 states which have not signed and/or ratified the CTBT: China, Egypt, India, Iran, Israel, Pakistan, and the US. The DPRK has not even signed the Treaty – just like India and Pakistan, and, like them, possesses nuclear weapons.

The DPRK is the only country that used to be a party to the NPT (acceded in 1985), but announced withdrawal from it (in 2003) and conducted its first nuclear test in 2006. The DPRK is under heavy and crippling economic sanctions, imposed by the UNSC and even more severe national sanctions imposed by the US and a number of other countries. Its nuclear program had been the subject of various international negotiations – first between the DPRK and the US, and then the so-called six-party talks, which aimed at stopping and reversing that program and ensuring the non-nuclear status of the Korean Peninsula.

Those talks were not successful. Neither were the sanctions, which, despite their severity and a heavy toll on DPRK's economy and well-being of its population, could not prevent either the advancement of its nuclear program or the roll-out of more and more sophisticated missiles, which are now likely capable of delivering nuclear warheads to at least part of the Continental US.

Finally, the DPRK is formally still in the state of war, as the Korean Armistice of 1953 is still in effect and has not been replaced by a peace treaty.

The brief description above makes it easy to suggest that it would be extremely difficult to convince the DPRK to sign and then to ratify the CTBT. The authors do not question this assessment. However, they intend to challenge the traditional thinking and ask, whether it makes sense to engage the DPRK specifically on the issue of its becoming a party to the CTBT? The answer they are suggesting is cautiously positive.

WHY AN ALTERNATIVE APPROACH IS WORTH EXPLORING?

One of the reasons, why alternative approaches should be explored, is the obvious failure of traditional approach to dealing with the nuclear situation on the Korean Peninsula and in the DPRK in particular. That approach has been heavily adversarial, largely relying on sanctions, dehumanization of the DPRK and its leadership and isolation of the country as instruments of pressure to ensure its “complete and irreversible denuclearization”.

There had been exceptions, there were instances, when progress appeared achievable, but every moment of hope was quickly followed by complications related to some other areas, like human rights, or insistence on formulas, patently unacceptable to DPRK – and hopes gave way to new complications. It turned out to be next to impossible to wisely adapt the sanctions regime to changes on the diplomatic table. In the meantime, the DPRK’s nuclear weapons program went further and deeper, making a simple direct return to zero less and less possible. It is not by chance, that in the nuclear and non-proliferation academic communities ideas started to surface about gradual, step by step progress towards “denuclearization”, while addressing broader political and security concerns of the DPRK – such as a peace treaty, for example.

As a result, today, practically all efforts to find a solution to the nuclear problem are frozen, there is no dialogue going on, and some of the regional countries seem to be busier with looking for military responses, rather than for peaceful solutions. It is unsurprising that in some of the regional countries, the idea of going nuclear is again on the rise.

Another important reason to look for innovative approaches to nuclear situation on the Korean Peninsula is a more general deterioration of the security situation in the Western Pacific, where a huge new wave of the arms race is quickly becoming a reality; this arms race may soon start challenging nuclear non-proliferation norms and rules, which used to work well in the past. In this new environment, military steps, which may be conceived by certain regional countries as a response to risks emanating from the DPRK nuclear advancement, may easily be perceived as aggressive moves in the context of great powers’ competition – with massive negative fallout for regional and global security. This is another reason, why the current deadlock on ensuring non-nuclear status of the Korean Peninsula is becoming more and more worrisome.

CAN THE CTBT HELP IN BREAKING NUCLEAR ICE ON THE KOREAN PENINSULA?

When there is an intention to overcome an impasse on a certain international problem, there is a need for at least two things:

- Active dialogue and continuous contacts that can be kept sustainably productive.
- Widening the discourse or narrowing it down to one or more issues that may be deemed more promising and help warm up to later address more difficult ones.

Engaging the DPRK on the issue of the CTBT may be one such thing and help with advancing dialogue in a new format without destroying old ones.

A question obviously arises, whether a “rapprochement” with the CTBT can look acceptable to the DPRK. It is difficult to know the answer without trying, but there may be arguments in favour of doing so. The point is, that, apart from the modernization of nuclear warheads, nuclear testing at the initial stage of building a nuclear arsenal is needed to prove to one’s own country and to others the possession of nuclear weapons. The DPRK does not need nuclear tests to prove that any more. The reverse side of this coin is that agreeing to stop testing should not mean renunciation of the nuclear arsenal.

In this case as well, there can be a step-by-step approach: first non-committing engagement, then participation in some form in the work of the CTBTO Preparatory Commission, then signature, then at an appropriate moment, ratification. All steps must be explored through delicate diplomacy, which should also address related political incentives, including in the area of sanctions.

By gently separating the issue of DPRK joining CTBT from the traditional agenda of “denuclearisation”, DPRK will be offered a chance to have more confidence in the process. Similar groundbreaking effort can be initiated by instituting membership of academic institutions, technical research centers, and universities in the DPRK to send participants, practitioners and experts for activities initiated by the CTBTO. This confidence building mechanism serves as a favorable backdrop for future projects and fulfilment of basic prerequisites towards limiting and eventually imposing a moratorium on nuclear testing. The CTBTO Preparatory Commission can create a special academic and technical engagement with states that have not subscribed to the CTBT.

Such an engagement would also allow for more constructive interaction, which is an essential prerequisite for establishing confidence. Sharing IMS data would give more room for dialogue and discussion with experts and practitioners from the DPRK and other non-signatory states.

INCENTIVIZING THE DPRK: BENEFITS OF CTBT ENGAGEMENT

There are many benefits that the DPRK can gain from joining the CTBT. Not only do member states become part of an international norm against nuclear weapons testing (186 State Signatories and 178 Ratifying States), contributing to greater peace and security worldwide, but they also gain the benefit from the civil and scientific applications of the CTBT data.¹

Treaty membership allows Member States to have equal access to the immense amount of detailed scientific information available as part of the international verification regime. While this verification regime is in place primarily to monitor for nuclear weapons testing, its data also offers a range of civil and scientific benefits. The IMS uses advanced seismic, hydroacoustic, infrasound, and radionuclide technologies to supply data which can be accessed by scientists and researchers from across the globe via the virtual Data Exploitation Centre (vDEC). The potential uses for this information include, but are not limited to, tsunami early warning systems, contributing to nuclear emergency response systems, enhancing civil aviation, and advancing scientific research.

The first of these benefits is the state-of-the-art tsunami early warning system, comprising 164 seismic and hydroacoustic stations that use advanced technology to monitor underground and the oceans for any sign of potential seismic activity that may lead to a tsunami. These stations then transmit the data in near real-time to National Tsunami Warning Centres of Member States who are Treaty signatories to enable them to issue rapid public alerts, leading to a minimized loss of life and less damage overall. Most tsunamis occur in the Pacific Ocean and in its marginal seas, including the three bodies of water

¹ “Membership Benefits”, CTBTO website, <<https://www.ctbto.org/resources/for-member-states/membership-benefits#:~:text=Assisting%20Developing%20Countries&text=Participants%20are%20familiarized%20with%20the,of%20verification%20data%20and%20technologies>>, accessed July 27, 2023>.

surrounding the Korean Peninsula: the Yellow Sea, The Korea Strait, and the Sea of Japan.² The Korean Peninsula experiences many of the devastating effects of seismic activity³ and if the DPRK were to sign the CTBT, the data available from IMS could enable the DPRK to better prepare for and mitigate the effects of seismic activity and tsunamis in the country by providing them with the information needed to make important decisions related to public safety and protection.

As well as assisting in the response to natural disasters such as earthquakes and tsunamis, IMS data can be used by Member States to assist in the response to disasters with a human element, for example nuclear emergencies. This was seen in the case of the Daiichi and Fukushima nuclear power plant meltdowns following the March 2011 earthquake and tsunami in Eastern Japan. Due to the meltdown, the power plants began to emit radioactive particles and noble gases. These were picked up on the IMS radionuclide monitoring network, and using atmospheric transport modelling, the IMS were able to predict and map the plume of radioactive materials to provide information to Member States to enable them to instruct the public on any potential health and safety risks brought on by the materials emitted. Nuclear facilities in the DPRK are potentially at risk of man-made and natural-driven accidents such as those in Daiichi and Fukushima.

Moreover, the data provided from the IMS infrasound stations can be used to detect ultra-low frequency sound waves emitted prior to and during the occurrence of volcanic eruptions. This data can be used to enhance the safety of civil aviation, as plumes of volcanic ash and other materials emitted during the eruption can be hazardous as they can interfere with and even cause jet engines to stall. Because of this, real time information provided by the IMS in collaboration with several other international organizations, including the International Civil Aviation Organization and the World Meteorological Organization, is paramount in diminishing the potential for accidents caused by volcanic eruptions. IMS data has been used not only in the enhancement of civil aviation safety, but also in conducting search and rescue operations following crashes and other accidents. With infrasound stations picking up the sound of explosions in the atmosphere, seismic stations detecting the sound of any impact on the ground, and hydroacoustic stations being able to detect the sound of any impact or explosion in the ocean.

Alongside the civil and scientific applications of IMS data mentioned above, the data collected as part of the international verification regime, can be used for advancing scientific research. Such research has led to discoveries and an overall better understanding of the natural world, with advances made relating to a wide range of scientific fields such as climate change, marine life and even the impact of meteors falling to Earth. One example of such a discovery is the use of the international radionuclide network to detect beryllium-7 in the atmosphere. This information was then used to predict the onset of monsoon season in

² International Tsunami Information Centre (ITIC)/UNESCO Intergovernmental Oceanographic Commission (IOC), "Where and how frequently are tsunamis generated?" <http://itic.ioc-unesco.org/index.php?option=com_content&view=article&id=1163:where-and-how-frequently-are-tsunamis-generated&catid=1340&Itemid=2055#:~:text=Most%20tsunamis%20occur%20in%20the%20Pacific%20Ocean%20and%20its%20marginal%20seas, accessed July 27, 2023>.

³ Yoon Min-sik, "Is Korea a tsunami-free zone?", January 17, 2022, Korean Herald, <<https://www.koreaherald.com/view.php?ud=20220117000916>, accessed July 27, 2023>.

India⁴, enabling farmers in the country to plan their crop cultivation to harvest the greatest number of crops before the monsoons began. With the DPRK being heavily impacted by monsoons⁵, any such information which would enable them to greater predict the arrival and impact of these extreme weather phenomena would be of great importance for the DPRK, not least because of the heavy reliance on domestic agricultural production in the country.⁶

To enable this process, the Preparatory Commission has to authorize the Executive Secretary to begin exploratory consultations with non-signatory states (all of them, without singling out the DPRK).

⁴ Lucrezia Terzi, Martin Kalinowski, Michael Schoeppner, “How to predict seasonal weather and monsoons with radionuclide monitoring”, Scientific Reports, September 25, 2019, <<https://doi.org/10.1038/s41598-019-39664-7>, accessed July 27, 2023>.

⁵ Global Security.org – DPRK Climate <<https://www.globalsecurity.org/military/world/dprk/climate.htm#:~:text=The%20Southwest%20Monsoon%20blows%20in,the%20winter%2C%20bringing%20cold%20weather>, accessed July 27, 2023>

⁶ Hazel Smith, “Explaining Food Insecurity in North Korea: The Self-Sufficiency Fallacy”, Global Asia, September 2021, <https://www.globalasia.org/v16no3/cover/explaining-food-insecurity-in-north-korea-the-self-sufficiency-fallacy_hazel-smith, accessed July 27, 2023>.

Role of Civil Society in Promoting CTBT Entry into Force

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ABSTRACT

This paper outlines the key reasons why civil society has played an important role in banning nuclear testing, advancing nuclear disarmament, and raising awareness of disarmament objectives among governments and the public from a historical point of view. Up to this date, the contribution of different types of civil society actors to the history of the nuclear test ban is evident and needs to be further capitalized on. The primary aim of this paper is to investigate seven global conferences on nuclear nonproliferation and disarmament to see if the CTBT has been included on their agendas in the past decade. The results show the lack of narrowly focused plenary discussions on CTBT-related issues at some of the major conferences. In this context, several recommendations were given to facilitate the progress of the Treaty's entry into force.

WHY DOES CIVIL SOCIETY MATTER?

Civil society has been playing an important role in addressing global problems for decades. That includes arms control, disarmament and international security. However, with the fundamental changes the humanity is going through, this role is also evolving. Now civil society is much more in a position to influence the developing of agendas and priorities, establishing objectives and norms. They are also more effective in coordinating strategies among experts, activists, academia, and other non-government actors.¹ In reality, civil society actually played a very significant role in raising awareness of disarmament objectives among governments and the public at large, in cases ranging from prohibiting cluster munitions and anti-personnel mines to banning nuclear testing and advancing nuclear disarmament.² The role of the civil society in attaining the 1997 Convention on the prohibition of anti-personnel mines and the 2008 Cluster Munitions Convention is in fact well documented and broadly acknowledged.³ The same applies to the negotiations on and bringing into force of the 2017 Treaty on the Prohibition of Nuclear Weapons.

Civil society's engagement in nuclear disarmament and banning nuclear tests has a long history. Even before the first nuclear weapons were used, clear scientific opposition emerged against nuclear weapons and their use in war and testing. Scientists involved in the Manhattan Project raised ethical, political, and technical questions about controlling nuclear weapons, and in 1945, they founded the Bulletin of the Atomic Scientists. Later on, other similar groups were formed, such as the Pugwash Conferences on Science and

¹ Rebecca Johnson, "The Role of civil society in negotiating the CTBT," in Mordechai Melamud, Paul Meerts, I. William Zartman, eds., *Banning the Bang or the Bomb?* (Cambridge University Press, 2014), p. 96.

² Rebecca Johnson, "Experts, Advocates and Partners: Civil Society and the Conference on Disarmament," United Nations Institute for Disarmament Research, 2011, p. 1.

³ Bonnie Docherty and Alicia Sanders-Zakre, "The origins and influence of victim assistance: Contributions of the Mine Ban Treaty, Convention on the Rights of Persons with Disabilities and Convention on Cluster Munitions", Cambridge University Press, 2022.

World Affairs, etc., while already existing organizations, such as the Women's International League for Peace and Freedom, and the Quakers, became deeply engaged against nuclear weapons. During the 1950s and 1960s, as more states joined the nuclear club and started testing nuclear weapons, a campaign to end nuclear testing spread across the world and involved civil society, from doctors and scientists to women's groups and grassroots activities.

The history of the nuclear test ban – from the moment of the historical initiative by Jawaharlal Nehru⁴ in 1954 to the successful conclusion of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) in 1996 – saw the activity of different types of the civil society. Its contribution to the conclusion of the Partial Test Ban Treaty in 1963 is noteworthy. Later on, it continued to play a key role in keeping the total test ban a prominent issue on the international political agenda – not only by spreading awareness of negative effects of nuclear testing, but also by contributing to the development of scientifically sound approaches to verification aspects of the future prohibition. The important role of the civil society in this respect was recognized by the UN General Assembly in its December 2009 Resolution establishing the International Day against Nuclear Testing.⁵

In the South Pacific context, the destructive nature of nuclear tests generated widespread local and international opposition from civil society movements, which mounted public pressure campaigns advocating a ban on nuclear testing. These campaigns are often cited as one of the powerful factors that led to the development and adoption of several important elements of the global nuclear non-proliferation regime, including the Partial Test Ban Treaty, the Rarotonga Treaty, and the CTBT itself.⁶

When the CTBT was opened for signature in 1996, it was due not only to the political and diplomatic decisions of the negotiating governments but also to the activities and strategies of the civil society organizations, which, through their advocacy, helped create better conditions for negotiations.⁷ This did not go unnoticed, as at the opening of the CTBT for signature in New York, at UN headquarters, UN Secretary-General Boutros-Ghali saluted civil society and the citizens who had struggled so long for this Treaty.⁸ There is still an important role for civil society in making further efforts to help the Treaty enter into force.⁹ Civil society can mobilize consensus for international agreements by stimulating broad support for the agreement in the public and exerting pressure on veto players through open discussions and persuasion of others in favour of the agreements' adoption.¹⁰

CTBT at Global Nonproliferation Conferences.

Conferences on nuclear nonproliferation and disarmament have become an essential platform for experts, officials, executives, journalists, and students to come together to

⁴ Jawaharlal Nehru was the First Prime Minister of India (1947–1964) and Minister of External Affairs (1947–1964).

⁵ International Day against Nuclear Tests resolution, G.A. Res. 64/35, U.N. Doc. A/RES/64/35 (2 December 2009).

⁶ Antonios Eskander, Laura Varella and Laveen Safary, "How Public Opinion Affects CTBT Prospects," in CYG-CENESS Research Fellowship Program: A Collection of Fellowship Research Papers, 2022, pp. 63-69.

⁷ Rebecca Johnson, "Banning the bomb: From 1950s activism to the General Assembly via Greenham Common," in "Civil Society Engagement in Disarmament Processes: The Case for a Nuclear Weapons Ban", United Nations Office of Disarmament Affairs, 2016, p. 44.

⁸ Johnson, *Unfinished Business: The Negotiation of the CTBT and the End of Nuclear Testing*, p. 143.

⁹ *Ibid.*, p. 232.

¹⁰ Kai Oppermann and Dagmar Röttsches, "NGOs as catalysts for international arms control? The ratification of the Chemical Weapons Convention and the Comprehensive Test Ban Treaty in the United States," *Journal of International Relations and Development*, Vol. 13, Number 3 (2010), pp. 240, 244, 246.

debate and explore solutions to the most pressing issues in nonproliferation, disarmament, security, etc. Today, polarization in the international nonproliferation and disarmament community regarding a range of critical questions continues to grow. Experts are sharply divided over issues such as the meaning and role of nuclear deterrence, the necessary steps to prevent proliferation and use of nuclear weapons, etc. The stability of the nonproliferation regime is challenged (incidentally, the failure to ensure the entry into force of the CTBT is one of the most serious negative factors); thus, it is crucial to have regular events that would provide experts and, most importantly, representatives from states with a platform to build dialogue. It is also civil society's role to constantly reinforce the importance of the CTBT and advocate for the Treaty because it has yet to enter into force.

The primary aim of this paper was to investigate global conferences on nuclear nonproliferation and disarmament to see if the CTBT has been included to the agendas of plenary discussions in the past decade. Seven prominent conferences on nuclear nonproliferation were chosen, and their agendas were studied closely. The EU Non-proliferation and Disarmament Conference (Brussels, Belgium), the NEREC Conference on Nuclear Nonproliferation (Seoul, Republic Korea), the Wilton Park Nuclear Non-Proliferation Conference (the UK), as well as the WMD and Security Forum by ACSIS (Amman, Jordan) are annual events, except for 2020, when due to the pandemic some conferences were cancelled. Carnegie International Nuclear Policy Conference (Washington, D.C., USA), the Moscow Nonproliferation Conference (Russia), PIIC Beijing Seminar on International Security (China) are organized every 24-30 months.

Table. The CTBT in the agendas of international conferences

Conference	Country	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Carnegie International Nuclear Policy Conference	the USA	X		X		X		X		X		
EU Non-proliferation and Disarmament Conference	the EU											
Moscow Nonproliferation Conference	Russia				X			X		X	X	
NEREC Conference on Nuclear Nonproliferation	South Korea	X	X	X	X	X				X		
PIIC Beijing Seminar on International Security	China		X		X		X	X		X	X	X
Wilton Park Nuclear Non-Proliferation Conference	the UK									X		
WMD and Security Forum by Arab Institute for Security Studies (ASIS)	Jordan	X								X		

Legend: X – wasn't held; – included the CTBT; – didn't include the CTBT

The chart demonstrates the emphasis that conference organizers placed on highlighting the CTBT.

In the case of the *Carnegie Conference*, the CTBT was regularly mentioned in the official agendas, but since 2017 the topics for plenary sessions have become broader.

Although the *EU Non-proliferation and Disarmament Conference* usually invites representatives from the CTBTO, the organizers also form a very broad agenda and held a special plenary session dedicated to the CTBT only in 2015.

Taking into consideration the regional aspect, the *NEREC Conference on Nuclear Nonproliferation* usually takes notice of CTBT in a more general sense with a special focus on the DPRK nuclear program and paths to Korean Peninsula denuclearization. Overall, the CTBT is discussed, and high-level representatives are invited, but there are very few narrowly focused plenary discussions aimed at facilitating the entry into force of the Treaty.

On the other hand, the *Wilton Park Nuclear Non-Proliferation Conference*, the *WMD and Security Forum by ACSIS*, and the *Moscow Nonproliferation Conference* are consistent in this regard. Organizers of the three events propose agendas, which provide enough room to address CTBT-related issues.

As for *PIIC Beijing Seminar on International Security*, it is difficult to assess the current situation. The organizers used to regularly include the CTBT in agendas but since 2017 the lack of seminars have been noticed. The only one, which was held in 2019, does not mention a session on the CTBT in the official agenda although the representatives of the CTBTO were invited to speak on the topic dedicated to verification technology and nuclear forensic.

There are no regular nonproliferation and disarmament conferences or workshops organized in Africa or Latin America while think-tanks from other regions do occasionally host such events. For example, in 2018 Nuclear Threat Initiative (NTI) launched the Global Enterprise to Strengthen Nonproliferation and Disarmament (GE) – a multi-year initiative to facilitate dialogue in support of the NPT's goals. In 2019 Latin America Regional Workshop on Strengthening the NPT Regime did not comprise any CTBT-related issues in the agenda.¹¹ In 2020 African Center for Science and International Security (AFRICISIS) co-hosted an Africa Regional Workshop.¹² The CTBTO sponsored several next-generation technical and policy experts, besides, the fellows from the organization participated in the Inter-Generational Dialogue section of the workshop.

As a result, the relative generalization of agendas shifts attention of “high-status” actors of international relations from CTBT-related issues to broader topics or more “urgent” issues. Although such generalizations can be justified, still conferences on nuclear nonproliferation and disarmament should create access points for civil society, academic community and state representatives to further progress on the universalization and the entry into force of the CTBT, which is an essential part of nuclear disarmament.

¹¹ Strengthening the NPT regime: priorities for the 2020 NPT RevCon, December 3, 2019 <https://www.nti.org/wp-content/uploads/2021/09/NPT_Workshop_Rio_Dec_2019_Agenda_FINAL.pdf, accessed July 12, 2023>.

¹² James McKeon “NTI in Africa: Regional Workshop in Ghana Aims to Strengthen Nuclear Non-Proliferation Treaty,” March 20 2020 <<https://www.nti.org/atomic-pulse/nti-africa-regional-workshop-ghana-aims-strengthen-nuclear-non-proliferation-treaty/>, accessed July 12, 2023 >.

Moreover, creating platforms for dialogue in other regions of the world may facilitate bridging the gap between Nuclear Weapon States (NWS) and Non-nuclear Weapon States (NNWS), since they reveal different priorities for governments across regions. As a general trend in the US and Europe, the discussion usually focuses on specific arms control treaties, risk reduction measures, and the relationship between the global security environment and the future of nuclear disarmament. Meanwhile, in NNWS the discussions focus on fulfilling previous disarmament and nonproliferation commitments by the NWS, the advancement of nuclear energy programs, and ways to work together to reduce the risk of nuclear weapons and achieve nuclear disarmament.¹³

An additional factor to consider is the inclusion of climate change as a security issue in conference agendas. Climate change poses significant risks to international security, including through its impacts on resources availability, migration patterns, and the stability of states. Climate change can exacerbate existing conflicts and create new ones. There is a strong correlation between the CTBT and climate change, as both are concerned with the long-term consequences of human actions on the environment.

RECOMMENDATIONS

History shows that civil society played a significant role in framing agendas, establishing priorities and disarmament objectives, and raising awareness of issues among governments and the public as a whole. Conferences on nuclear nonproliferation and disarmament and their importance in promoting these priorities and objectives should be further capitalized on, especially when it comes to CTBT-related issues. The long-standing deadlock on ratification of the Treaty underscores the need to employ various resource tools to raise awareness about the CTBT, to draw governments' attention to its significance and further enhance its global relevance.

In this context, to facilitate the progress of ratification of the Treaty, first, it is crucial to identify key civil society fora which play a prominent role in addressing nonproliferation and disarmament issues and establish regular contacts with their organizers. In that sense, building sustainable partnerships and facilitating the inclusion of narrowly focused plenary discussions on the CTBT-related issues in the agendas of major conferences is important to keep the CTBT a regular topic for discussions in all convenient international fora.

Second, in regions where there are states that have not signed the CTBT or ratified it, it seems reasonable to stimulate the formation of dialogue there with focus on the Treaty itself. Civil society could raise awareness by organizing regional-specific workshops, round table discussions, and other similar events centered around the Treaty's importance. They could also team up on a cross-regional basis to stimulate and encourage the national authorities in a specific region to ratify the CTBT.

Third, civil society, could be encouraged to develop initiatives for global and regional meetings and conferences which can serve to highlight and explain the need for the entry into force of the CTBT and to press for inclusion of this appeal into eventual decisions or resolutions by various organisations – from the UN General Assembly to various regional organisations and mechanisms, including the mechanisms of Nuclear-Weapon-Free Zones.

13 Ibid.

Fourth, given the strong correlation between the CTBT and climate change, this link presents a great opportunity for the organization to promote the Treaty and its goals at one of the biggest climate change conferences/summits (UN Climate Change Conference, Sustainable Development Goals Summit, etc.), develop international cooperation in this sphere, and address pressing issues.

