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EMERGING
VOICES
NETWORK

BASIC

Strengthening the Humanitarian Impacts of Nuclear Weapons Agenda within the NPT

Based on a Policy Cycle by BASIC's Emerging Voices Network (EVN)

Edited by Anahita Parsa

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Emerging Voices Network

Launched in December 2020, the Emerging Voices Network (EVN) is a digital network of high-potential, next-generation leaders on nuclear issues who will inherit the responsibility to manage nuclear threats. In founding the EVN, BASIC's aim was to create a truly inclusive digital space wherein younger voices from marginalised communities around the world are heard on nuclear issues. The Network promotes collaboration, dialogue and bridge-building between next-generation leaders from the Global North and South, with diversity and inclusivity at the forefront of the Network's ethos and mission.

BASIC

BASIC is an independent, non-profit think tank working to safeguard humanity and Earth's ecosystem from nuclear risks and interconnected security threats, for generations to come. We have a global reputation for convening distinctive and empathic dialogues that help states overcome complex strategic and political differences. Our established networks and expertise, developed since 1987, enable us to get the right people in the room and facilitate effective, meaningful exchange between siloed and often hostile political communities.



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List of Acronyms

A/CPNM	Convention On The Physical Protection Of Nuclear Material (and its Amendment)
ABWR	Advanced Boiling Water Reactor
CINRAS Civil	Independent Nuclear Regulatory Authorities
CSO	Civil Society Organisation
CTBT	Comprehensive Nuclear Test Ban Treaty
DEI	Diversity, Equity, And Inclusion
DOD	Department of Defense
EPR	European Pressurised Reactor
ER	Emergency Response
EU	European Union
EWIPA	Explosive Weapons in Populated Areas
HI	Humanitarian Impacts
HINW	Humanitarian Impacts of Nuclear Weapons
IAEA	International Atomic Energy Agency
ICAN	International Campaign to Abolish Nuclear Weapons
ICRC	International Committee of the Red Cross
ICRP	International Commission on Radiological Protection
NARP	Nuclear Weapon Accident Response Procedures
NATO	North Atlantic Treaty Organisation
NGO	Non-Governmental Organisation
NISA	Nuclear and Industrial Safety Agency
NNWS	Non-Nuclear Weapon States
NPP	Nuclear Power Plants
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
NSA	Negative Security Assurance
NWFZ	Nuclear Weapon-Free Zone
NWS	Nuclear Weapon States

P5	Five Permanent Members of the UN Security Council
PrepCom	Preparatory Committee
PSR	Physicians for Social Responsibility
PWD	Persons With Disabilities
RECA	Radiation Exposure Compensation Act
REPPIR	Radiation Emergency Preparedness and Public Information Regulation
RevCon	Review Conference
SDGs	Sustainable Development Goals
SNF	Spent Nuclear Fuel
STEM	Science, Technology, Engineering and Mathematics Fields
TEPCO	Tokyo Electric Power Company
TPNW	Treaty on the Prohibition of Nuclear Weapons
UNDRIP	United Nations Declaration On The Rights Of Indigenous Peoples
UNGA	United Nations General Assembly
UNODA	UN Office for Disarmament Affairs
WHO	World Health Organization
WMD	Weapon of Mass Destruction
WPS	Women, Peace, And Security
YPS	Youth, Peace, And Security

Introduction

BASIC's Emerging Voices Network (EVN) seeks to reach, engage, and platform early career and young experts from communities, countries, and backgrounds that are under-represented in mainstream nuclear policy fora. The EVN is committed to helping these individuals overcome institutional barriers to ensure that these spaces are truly global and that the perspectives and expertise of communities that are often minoritised, yet impacted by nuclear weapons development and policy, are centred and integrated into mainstream nuclear dialogue.

In October 2023, the EVN launched a Policy Cycle focused on the Humanitarian Impacts of Nuclear Weapons (HINW). With generous support from the Ministry of Foreign Affairs of Norway, this EVN Policy Cycle explores the HINW agenda in the context of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), and efforts to strengthen it.

The issue of nuclear harms is gaining traction in the international community, with the entry into force of the Treaty on the Prohibition of Nuclear Weapons (TPNW) and advocacy efforts by international civil society on the medical and environmental impacts of nuclear weapons testing, use, and accidents. Concurrently, nuclear tensions are at their highest since the Cold War, and the nuclear policy community faces challenges around the siloed nature of those working on issues of nuclear risk, and so it is logical to reflect on the implications for the HINW agenda beyond the TPNW context – given that many TPNW signatories are also NPT member states. When considered within the wider context of the breakdown of key nuclear arms control agreements, the war in Ukraine, the role of emerging technologies in nuclear issues, and funding constraints for key stakeholders, bolstering the NPT must remain a key priority.

Work on HINW is fundamental to this, and there are a range of opportunities to better centre it within the NPT space. We felt it important to empower the next generation living with the ongoing threat of nuclear war to share their own insights and solutions to these nuclear harms and risks. On this basis, this policy cycle examines the intersection of HINW and the NPT, and asks, how can both be strengthened, in relation to one another?

The findings of these policy papers and their recommendations centre foremost on strengthening efforts around the HINW agenda within the NPT. They also explore the importance of de-siloing the nuclear field, identifying areas of complementarity between the NPT and TPNW, and reiterate the value of commitments to multilateralism and disarmament. Reflecting on, and addressing these issues plays a crucial role in informing both contemporary and future nuclear policy decisions in the best interests of peace and security – one which centres those most affected by nuclear risks and harms.

With this in mind, five EVN Working Groups, each led by two Co-Chairs, researched and drafted policy papers including a set of policy recommendations for the international community to consider and take forward. Their areas of focus span across the NPT community's key stakeholders and the treaty's three pillars (non-proliferation, peaceful uses, and disarmament), in order to build a holistic approach to reducing nuclear harms within this space.

The Working Groups focused on 5 key areas, in the context of strengthening the HINW agenda within the NPT:

- Engaging the P5
- The Role of Civil Society
- Nuclear Education and Knowledge
- Nuclear Safety and Security
- Diversity, Equity, and Inclusion

The resulting anthology provides valuable insights and innovative solutions from emerging researchers and young professionals in the nuclear policy field, and emphasises the importance of engaging with the humanitarian impacts of nuclear weapons within the mainstream international nuclear policy space. The community should also recognise the salience of these issues for the incoming generation of nuclear experts and consider their recommendations as part of a broader effort to make this field more accessible, representative, and inclusive of emerging and minoritised voices.

Engaging the P5 to Address the Humanitarian Impacts of Nuclear Weapons

Authors: Vivienne Zhang (Co-Chair), Elena Batani (Co-Chair), Mhairi McClafferty, Emma Scherer, Christian Steins, Lauren Cho, Syed Ali Zia Jaffery, Natalia Zhurina, Ian Fleming Zhou

Executive Summary

The nuclear policy and doctrines of P5 States are focused on national security, geopolitics, and deterrence, although they address the humanitarian impacts of nuclear weapons (HINW) indirectly via emergency response (ER) measures and frameworks while some have expressed interest in further understanding HINW. When engaging P5 States on initiatives to enhance HINW, stakeholders should consider the national and multilateral context in P5 States and the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) fora. This includes, for example, existing domestic interpretations or provisions of HINW, and participation at HINW conferences. To further the discussion on HINW, civil society and NPT States Parties should focus engagements with P5 States on exploring common understandings, research collaborations, and technical discussions on HINW. They should simultaneously call for nuclear risk reduction and negative security assurances (NSA). This allows stakeholders to challenge traditional arms control narratives by advancing HINW without disregarding the importance of nuclear risk reduction. State Parties should work with civil society to integrate HINW into existing collaborations and fora such as the P5 Young Professionals Network and regional organisations to address issues about HINW at the nexus of safety and security.

Introduction

Since the 2010 Review Conference (RevCon) of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), discussions surrounding the humanitarian impacts of nuclear weapons (HINW) have gained significant traction. This renewed interest in the devastating consequences of nuclear weapons has bolstered arguments against both the proliferation and retention of these weapons. The growing humanitarian agenda has particularly empowered disarmament advocates, leading to landmark developments such as the entry into force of the Treaty on the Prohibition of Nuclear Weapons (TPNW) on 22 January 2021. Despite this, recent years have witnessed nuclear modernisation, further erosion of arms control regimes and a widening trust deficit between Nuclear Weapons States (NWS) and Non-Nuclear Weapons States (NNWS). To rebuild trust and rethink nuclear priorities, this policy paper suggests avenues for the NWS, namely the five permanent members of the United Nations Security Council (P5), to engage more significantly with HINW in their national and multilateral settings, by providing an overview of the existing domestic initiatives and diplomatic stances related to HINW. The current analysis is also beneficial for State Parties, civil society, and other stakeholders interested in advancing HINW with P5 States bilaterally, at NPT RevCons, or in regional organisations, as it presents their preferred fora and national practices in addressing HINW-related issues. Tailored approaches to strategically galvanise P5 States to reduce HINW in any context strengthen the NPT. The analyses and recommendations presented herein seek not to exacerbate disagreements between NWS and NNWS. Rather, they propose another way of merging HINW into existing conventions so as to provide more attainable solutions to enhance undiminished security for all.

Analysis

China

National Setting

China's nuclear policy since its acquisition of nuclear weapons, is focused on achieving deterrence via retaliatory second-strike capabilities.¹ Chinese nuclear policy does not mention HINW. It addresses HINW-adjacent concerns through ER to nuclear accidents, a framework China has been increasingly developing in the past two decades. Key documents outlining China's efforts include the 2013 National Nuclear Emergency Preparedness Plan² and "China's Nuclear Emergency Response" 2016 White Paper³. The White Paper outlines major ER measures and the Plan conceptualises the tiered organisational structure of preparedness and coordination from national to local levels in case of nuclear accidents. The intergovernmental National Nuclear Emergency Coordination Committee has central command authority over ER in serious accidents and it is supported by an expert committee and 25 national-level specialised rescue teams of 1,300 people.⁴ The People's Liberation Army and the Chinese scientific community conduct exercises to build ER capacity. For example, a 320-people civil-military national nuclear ER team was formed in 2018 to develop expertise across disciplines.⁵ However, due to the sensitivity of the topic, there is little publicly accessible and credible information on the implications of nuclear war or weapons use scenarios beyond general statements and limited ER research. Nuclear war is alluded to in the 2013 Plan under subheadings such as "Taiwan Region Nuclear Accidents" although no open-access studies are found on the subject.⁶ Public awareness of HINW is also inadequate as few media and public communication articles transmit information on HINW. This alongside the lack of holistic assessments of HINW shows a gap in China's nuclear ER planning.

Multilateral Setting

Beijing has not discussed HINW in multilateral settings but has often linked humanitarian impacts (HI) with conventional capabilities such as landmines and cluster munitions.⁷ Some experts believe that China sees efforts focusing on HI as a means to build bridges with the Global South while not renouncing possession of nuclear weapons.⁸ China attended the Third Vienna Conference on the Humanitarian Impact of Nuclear Weapons in 2014 as an observer.⁹ While this fuels speculation of possible Chinese interests in developing its own HI framework to bolster global governance and leadership, China has rejected norms-based approaches to humanitarian responses as those supported by the TPNW.¹⁰ On nuclear risk reduction, China is reluctant to conduct arms control and risk reduction dialogue with the US given its nuclear triad modernisation, ongoing strategic competition, and the erosion of US-Russia arms control. It holds the fundamental belief that the US and Russia should first implement good faith arms control and disarmament regimes before the rest of the P5. Given China's interest in G77 and its growing bilateral ties with Global South States as a part of its Belt and Road Initiative, engaging China on HINW would require initiative from

1. Ministry of Foreign Affairs of the People's Republic of China, 'Foreign Ministry Spokesperson Mao Ning's Regular Press Conference on October 20, 2023', 20 October 2023, https://www.mfa.gov.cn/eng/xwfw_665399/s2510_665401/202310/t20231020_11165059.html [accessed 23 January 2024].
2. 国家核应急预案(National Nuclear Emergency Preparedness Plan).
3. Full text of China's Nuclear Emergency Preparedness_中华人民共和国国务院新闻办公室 http://www.scio.gov.cn/zfbps/ndhf/2016n/202207/t20220704_130465.html
4. The State Council of the People's Republic of China, 国家核应急预案(National Nuclear Emergency Preparedness Plan), 30 June 2013, https://www.gov.cn/gongbao/content/2013/content_2449468.htm; Pan Shanju, '中国组建核应急 救援“国家队”保障我国核安全 (China establishes nuclear emergency rescue "national team" to ensure nuclear safety)', People's Daily, 2016, <http://politics.people.com.cn/n1/2016/0525/c1001-28377144.html> [accessed 23 January 2024].
5. The State Council of the People's Republic of China, 国家核应急预案(National Nuclear Emergency Preparedness Plan), 30 June 2013, https://www.gov.cn/gongbao/content/2013/content_2449468.htm; Pan Shanju, '中国组建核应急 救援“国家队”保障我国核安全 (China establishes nuclear emergency rescue "national team" to ensure nuclear safety)', People's Daily, 2016, <http://politics.people.com.cn/n1/2016/0525/c1001-28377144.html> [accessed 23 January 2024].
6. 国家核应急预案(National Nuclear Emergency Preparedness Plan).
7. Ministry of Foreign Affairs of the People's Republic of China, 'China's Endeavours for Arms Control, Disarmament and Non-Proliferation', White Paper, 1 September 2005, https://www.mfa.gov.cn/mfa_eng/wjb_663304/zjzg_663340/jks_665232/jkxw_665234/200509/t20050901_599120.html.
8. Oliver Meier and Michael Staack, 'Engaging China on Multilateral Arms Control', Arms Control Association (December 2022), <https://www.armscontrol.org/act/2022-12/features/engaging-china-multilateral-arms-control#bio>.
9. Kukil Bora, 'China Sends Official Posing As 'Academic' To Attend Vienna Nuclear Conference: Report', International Business Times, 9 December 2014, <https://www.ibtimes.com/china-sends-official-posing-academic-attend-vienna-nuclear-conference-report-1744914>.
10. United Nations, 'First Committee, 25th plenary meeting - General Assembly, 77th session', 28 October 2022, UN Web TV, 03:18:36, <https://webtv.un.org/en/asset/k17/k17cgi5ihl?kalturaStartTime=3412> [accessed 24 January 2023].

Global South states focused on exploring interpretations and technical measures surrounding HINW.¹¹ This should take into consideration numerical and capability discrepancies between China and other NWS, as well as the nuclear weapon-free zone (NWFZ) regional approach which also appeals to China.¹²

France

National Setting

France's nuclear doctrine is based on 'deterrence by punishment' aiming to deter potential adversaries with a diversified but limited arsenal conceived of strict sufficiency for 'strictly defensive' measures.¹³ France's desire for sovereignty and control over its nuclear arsenal is a fundamental element of its nuclear doctrine.¹⁴ In recent years, the European dimension of French vital interest has become more explicit as French President Emmanuel Macron seeks the "development of a strategic dialogue with our European partners."¹⁵ As a part of the dialogue, France commits to promoting a better understanding of its nuclear doctrine amongst its European partners. This occasion for France and European Union (EU) member states to openly discuss the role of France's nuclear weapons in European collective security provides an opportunity to also reflect on HINW. France could lead this discussion by further examining the HI of its nuclear testing and sharing the expertise it has acquired on the issue. For instance, the Morin Law – adopted by France in 2010 to compensate individuals suffering from nuclear testing-related illnesses in French Polynesia – is a legal basis for researching the HI of nuclear testing. Although some still consider transparency and accountability in the compensation process to be insufficient,¹⁶ wider research on the HI of nuclear testing can build French and EU capacity on HINW and strengthen France's image as a defender of human rights.

Multilateral Setting

France considers the NPT to be the only effective instrument to prevent nuclear war and the associated HI in rejection of the TPNW.¹⁷ To protect civilians from a nuclear war, France argues for a step-by-step approach to disarmament based on four principles: (1) undiminished security for all; (2) strict sufficiency; (3) progressive disarmament; (4) negative security assurances (NSA).¹⁸ Despite rejecting the TPNW, France has strongly defended international humanitarian law in other contexts such as the process leading to the political declaration on explosive weapons in populated areas (EWIPA).¹⁹ On the other hand, France does not believe that addressing HINW is appropriate or enough for advancing nuclear disarmament.²⁰ For France, the doctrine of deterrence is based on the ability to inflict unacceptable damage,²¹ and therefore by definition, it relies on the possibility of inflicting losses – even human losses – on the adversary. Thus, strategic and geopolitical considerations, not humanitarian ones, are what drives nuclear disarmament forward.²² Nonetheless, if deterrence relies on the capacity of the State to inflict "unacceptable damages," what is considered "unacceptable" is itself subject to change. For instance, the notion of "anti-city deterrence" disappeared in the 1990s from French nuclear doctrine, and since 2015 deterrence has only been aimed at "centres of power".²³ This evolution shows that humanitarian considerations impact the

11. Yuan Sha, 'G77+China to Play a Bigger Role in the Global South Agenda', China Institute of International Studies, 18 September 2023, https://www.ciis.org.cn/english/COMMENTARIES/202309/t20230918_9072.html.
12. Ministry of Foreign Affairs of the People's Republic of China, Working Paper on Nuclear Risk Reduction submitted by China to the Preparatory Committee for the 2026 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, 8 August 2013, www.mfa.gov.cn/eng/wjw_663304/zjzg_663340/jks_665232/kjfywj_665252/202308/t20230808_11123917.html.
13. Notion of 'strict sufficiency' reiterated by Macron in his discours sur la stratégie de défense et de dissuasion.
14. France has historically been adamant about maintaining full control and sovereignty over its nuclear arsenal. It has not been part of NATO's nuclear command structure and does not participate in consultations within the NATO Nuclear Planning Group (NPG) or in NATO nuclear exercises.
15. Discours du Président Emmanuel Macron sur la stratégie de défense et de dissuasion (7 February 2020), <https://www.elysee.fr/en/emmanuel-macron/2020/02/07/speech-of-the-president-of-the-republic-on-the-defense-and-deterrence-strategy>.
16. Out of the claims submitted over a 10-year period, more than 80 percent have been rejected. https://www.wilpf.org/wp-content/uploads/2023/10/WILPF-submission-CESCR-France_August-2023.pdf.
17. Discours du Président Emmanuel Macron sur la stratégie de défense et de dissuasion.
18. FranceTNP, 'Les principes généraux', <https://www.francetnp.gouv.fr/les-principes-generaux?lang=fr>.
19. Intervention de M. Yann Hwang, Protection des populations civiles lors d'opérations en milieu urbain, 18 November 2019, Geneva, Switzerland, <https://www.dfa.ie/media/dfa/ourrolepolicies/peaceandsecurity/ewipa/France-Written-Submission--18-November-2019.pdf>.
20. La dimension humanitaire: la voie pour relancer le débat à l'ONU sur le désarmement nucléaire? (20 January 2014), https://cd-geneve.delegfrance.org/IMG/pdf/Intervention_Colloque_20_01_2014.pdf?686/3d0b3d9d3cbfd2b7d28680130f198d55eafba6a8.
21. La dimension humanitaire: la voie pour relancer le débat à l'ONU sur le désarmement nucléaire? (20 January 2014), https://cd-geneve.delegfrance.org/IMG/pdf/Intervention_Colloque_20_01_2014.pdf?686/3d0b3d9d3cbfd2b7d28680130f198d55eafba6a8.
22. La dimension humanitaire: la voie pour relancer le débat à l'ONU sur le désarmement nucléaire? (20 January 2014), https://cd-geneve.delegfrance.org/IMG/pdf/Intervention_Colloque_20_01_2014.pdf?686/3d0b3d9d3cbfd2b7d28680130f198d55eafba6a8.
23. In Tertrais, Bruno; La France et la dissuasion nucléaire. Concept, moyen, avenir, coll. Questions de défense, Paris, La Documentation française, 2007

evolution of nuclear doctrines. As such, P5-level discussions on “unacceptable damage” would be useful to help formulate common understandings. NPT States Parties should encourage France to address the HI of its nuclear tests. France has set an example by transparently dismantling the nuclear test site in French Polynesia and can continue to lead transparent international research on HINW, which could encourage more advocacy for the Comprehensive Nuclear-Test-Ban Treaty (CTBT).²⁴

Russia

National Setting

Russia’s nuclear and military policy is outlined in three key official documents: Military Doctrine of the Russian Federation,²⁵ Foundations of the State Policy of the Russian Federation in the Field of Nuclear Deterrence,²⁶ and National Security Strategy of the Russian Federation.²⁷ The prevailing narrative in the various addresses by the President of the Russian Federation to the Federal Assembly has also focused on deterring potential adversaries and maintaining parity with other nuclear-armed states.²⁸ Both the Russian official documents and presidential statements place a strong emphasis on strategic deterrence, national security, and the perceived role of nuclear weapons in safeguarding Russia’s interests, lacking references to HINW. But other documents related to ER do have an interest in HINW. The “Basis of Russian Federation’s State Policy on the Ensuring of Nuclear and Radiological Safety for the Period Until 2025” specifically underlines the risk of nuclear emergencies to human health and safety, as well as prioritising the “liquidation of accumulated environmental damage” caused by nuclear accidents and radioactive waste.²⁹ Stakeholders looking to engage Russia on HINW should underscore its concern for nuclear safety on its territory and commitments to this doctrine when proposing HINW initiatives.

Multilateral Setting

Many of Russia’s recent statements and actions in multilateral fora show little regard for HINW. Its statements at the 2023 NPT Preparatory Committee (PrepCom) demonstrate a lack of interest in any future disarmament without sufficient “consideration of geopolitical and strategic realities when discussing the state of affairs on the nuclear disarmament track.”³⁰ Instead, Russia values the need to create an atmosphere of increased security. While Russia has been a part of the global effort to address nuclear weapons issues through arms control and non-proliferation agreements, it did not participate in HINW conferences. Since Russia’s nuclear sabre-rattling in its war in Ukraine destabilises international security by wielding potentially devastating HINW as a threat, it has the possibility of “validating the concept of nuclear coercion not only for Moscow but for other aggressive, assertive or rogue states around the world.”³¹ In order to better address the HINW, NPT States and stakeholders must first and foremost urge Russia to immediately end nuclear threats and adopt language conducive to cooperation. This initiative is more likely to be well-received if undertaken by non-western States as Russian delegates have accused the West of “politicising” the NPT.³² Moreover, given the avoidance of P5 States of HINW discussions in the TPNW context, HINW must be framed within international security and the broader disarmament community (i.e. the Conference on Disarmament)³³ and emphasise the nuclear weapon-free zones (NWFZ) since Russia is favourable towards them as an advocate.³⁴

24. FranceTNP, ‘Ce qu’a fait la France’, <https://www.francetnp.gouv.fr/ce-qu-a-fait-la-france>.

25. President of the Russian Federation, Military Doctrine of the Russian Federation (2020), https://thailand.mid.ru/en/o_rossii/vneshnyaya_politika/voennaya_doktrina_rf/.

26. President of the Russian Federation, Foundations of the State Policy of the Russian Federation in the Field of Nuclear Deterrence, 2 June 2020, <http://static.kremlin.ru/media/events/files/ru/lluTKhAiabLzOBjlfBSvu4q3bcl7AXd7.pdf>.

27. President of the Russian Federation, National Security Strategy of the Russian Federation, 2 July 2021, <http://publication.pravo.gov.ru/Document/View/0001202107030001>.

28. Послание Президента Федеральному Собранию (Address of the President to the Federal Assembly), 2023, <http://kremlin.ru/events/president/news/70565>.

29. Security Council of Russia, ‘The Basis of Russian Federation’s State Policy on the Ensuring of Nuclear and Radiological Safety for the Period Until 2025’, 1 March 2012, <http://www.scrf.gov.ru/security/military/document128/>.

30. Statement by the Head of the Delegation of the Russian Federation at the First Session of the Preparatory Committee for the 11th Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (Cluster 1: nuclear disarmament), 3 August 2023, https://reachingcriticalwill.org/images/documents/Disarmament-fora/npt/prepcom23/statements/3Aug_Russia.pdf.

31. Keir Giles, Russian Nuclear Intimidation: How Russia Uses Nuclear Threats to Shape Western Responses to Aggression (London: Chatham House, March 2023). <https://doi.org/10.55317/9781784135645>.

32. Statement by the Head of the Delegation of the Russian Federation at the First Session of the Preparatory Committee for the 11th Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (General debate), 1 August 2023, https://reachingcriticalwill.org/images/documents/Disarmament-fora/npt/prepcom23/statements/1Aug_Russia.pdf.

33. Andrea Berger, A Mexican Stand-Off: The P5 and the Humanitarian Impacts of Nuclear Weapons Initiative (European Leadership Network, April 2014), <http://www.jstor.org/stable/resrep06729>.

34. Russia advocates creation of nuclear-weapon-free zone in Middle East – envoy, TASS, 16 November 2022, <https://tass.com/politics/1537907>.

United Kingdom

National Setting

The United Kingdom's nuclear doctrine is centred on maintaining nuclear deterrence for national security.³⁵ It is based on the logic that the UK's commitment to nuclear weapons acts as a deterrent to potential aggression and safeguards national and NATO security.³⁶ It addresses HINW nationally via the Radiation Emergency Preparedness and Public Information Regulation (REPPPIR), which focuses on protecting public health, ensuring clear communication, coordinating support services, and planning for long-term recovery in the event of a nuclear incident to mitigate humanitarian impacts.³⁷ Furthermore, in the case of international nuclear incidents, the UK collaborates with international organisations and other states via data sharing and coordinating aid to minimise cross-border impacts. For instance, in the event of nuclear accidents, the Agreement for cooperation on the safe and useful use of nuclear energy between the EU and the UK allows for early notification and data sharing to coordinate rapid responses to nuclear emergencies.³⁸ Notwithstanding the UK's commitment to a world without nuclear weapons and stance on the consistency of its nuclear posture with legal obligations under international law underlying the NPT,³⁹ in its latest Integrated Review, the UK has announced an increase of its nuclear weapons stockpile cap as well as of nuclear spending to modernise the country's defence capabilities,⁴⁰ and that it will no longer provide public figures on its number of operational warheads, deployed warheads or deployed missiles.⁴¹ The UK government's decision to increase its nuclear stockpile cap could be perceived as legitimating the use of nuclear weapons and potentially encourage other nations to follow suit, thereby risking an arms race with severe implications for global security.⁴² It could, therefore, be argued that the UK government's decision to increase its nuclear warheads cap is inconsistent with its obligations under Article VI of the NPT, to pursue negotiations in good faith relating to nuclear disarmament and the cessation of the nuclear arms race.⁴³

Multilateral Setting

The United Kingdom has acknowledged the importance of HINW. Despite initial reluctance to engage with the initiative, the UK attended the Third Vienna Conference on HINW in 2014 after the United States decided to attend.⁴⁴ This signalled the UK's willingness to participate in discussions surrounding HINW insofar that they integrate security considerations.⁴⁵ The UK has since then highlighted the importance of HINW in NPT settings. While acknowledging the devastating consequences resulting from nuclear use, however, the UK government has maintained its stance on deterrence.⁴⁶ By emphasising its reliance on deterrence, the UK undermines its stance on the HINW. While advocating against humanitarian consequences, maintaining a nuclear deterrent implies an acceptance of the potential use and ensuing devastation of nuclear weapons

35. UK Government, Integrated Review Refresh 2023: Responding to a more volatile world (March 2023), p.33. https://assets.publishing.service.gov.uk/media/641d72f45155a2000c6ad5d5/11857435_NS_IR_Refresh_2023_Supply_AllPages_Revision_7_WEB_PDF.pdf.
36. UK Government, Integrated Review Refresh 2023, p.33.
37. UK Government, Nuclear emergencies: information for the public, updated 25 May 2022, <https://www.gov.uk/government/publications/nuclear-emergencies-information-for-the-public/nuclear-emergencies-information-for-the-public>.
38. The EU-UK Agreement for cooperation on the safe and peaceful uses of nuclear energy (adopted 1 May 2021), https://commission.europa.eu/strategy-and-policy/relations-non-eu-countries/relations-united-kingdom/eu-uk-trade-and-cooperation-agreement/eu-uk-agreement-cooperation-safe-and-peaceful-uses-nuclear-energy_en.
39. UK Government, The UK's nuclear deterrent: what you need to know, updated 16 March 2023, <https://www.gov.uk/government/publications/uk-nuclear-deterrence-factsheet/uk-nuclear-deterrence-what-you-need-to-know>.
40. UK Government, Global Britain in a competitive age: The Integrated Review of Security, Defence, Development and Foreign Policy (March 2021), p.76. https://assets.publishing.service.gov.uk/media/60644e4bd3bf7f0c91eababd/Global_Britain_in_a_Competitive_Age_the_Integrated_Review_of_Security_Defence_Development_and_Foreign_Policy.pdf [accessed 16 January 2024].
41. UK Government, Global Britain in a competitive age, p.77.
42. Nicola Banks, Support for Fragile Conflict-Affected Settings: An analysis of the UK's Integrated Review 2023 (Action for Humanity, May 2023), p.15. <https://actionforhumanity.org/media/16838945988833425/Support%20for%20Fragile%20and%20Conflict-%20Affected%20Settings%20AN%20ANALYSIS%20OF%20THE%20UK'S%20INTEGRATED%20REVIEW%202023.pdf>.
43. Christine Chinkin and Louise Arimatsu, 'Legality under International Law of the United Kingdom's Nuclear Policy as set out in the 2021 Integrated Review', (London School of Economics and Political Science, April 2021), p.39. <https://www.lse.ac.uk/women-peace-security/assets/documents/2021/CND-opinion-28.04.21.pdf>.
44. Elizabeth Minor, 'Changing discourse on nuclear weapons: The humanitarian initiative', International Review of the Red Cross, 97(899) (2015): 711-739, pp.718-719, https://international-review.icrc.org/sites/default/files/irc97_12.pdf.
45. Statement by Susan le Jeune d'Allegrehecque, UK Intervention at the Vienna Conference on the Humanitarian Impacts of Nuclear Weapons, 9 December 2014, Vienna, Austria, <https://www.gov.uk/government/news/uk-intervention-at-the-vienna-conference-on-the-humanitarian-impact-of-nuclear-weapons>.
46. See: Statement by the United Kingdom, General Debate, Third Preparatory Committee of the 2015 Review Conference of the Treaty on the Non-Proliferation of Nuclear Weapons, 28 April 2014, https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/prepcom14/statements/29April_UK.pdf; Statement by the United Kingdom, General Debate, 2015 Review Conference of the Treaty on the Non-Proliferation of Nuclear Weapons, 27 April - 22 May 2015, https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2015/statements/27April_UK.pdf; Statement by the United Kingdom, Main Committee I, 2015 Review Conference on the Treaty on the Non-Proliferation of Nuclear Weapons, 15 May 2015, https://reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2015/statements/15May_UK.pdf.

as a result of their use. Since 2017, however, there has been a noticeable decrease in explicit references to HINW by the United Kingdom at NPT conferences. This shift suggests a potential reevaluation of the UK's position, which might be in line with recent changes in the UK's Integrated Review outlined above. Given the UK's past engagement with HINW, it remains well-positioned to call for greater integration of humanitarian considerations into multilateral regimes like the NPT as it hosts numerous subject matter experts and civil society organisations (i.e. VERTIC, Chatham House, Wilton Park etc.) who can provide options for policy formulation and implementation. They can also deepen the understanding of HINW via joint research and technical discussions in the P5 and NPT settings.

United States

National Setting

The United States' (US) nuclear weapons policy is described in its Nuclear Posture Review in the National Defense Strategy. The Congressional Commission on the Strategic Posture of the United States also concludes more political assessments of nuclear weapons and their role in military strategy. The fundamental purpose of US nuclear weapons in national defence is to strengthen deterrence.⁴⁷ Despite lacking direct mentions of humanitarian impacts, the United States is increasingly addressing the importance of protecting civilians in nuclear incidents. The new Department of Defense (DoD) public affairs guidance released in 2023 assigns responsibilities for emergency response (ER) in the event of a nuclear incident,⁴⁸ supplementing the department-wide response plan outlined in DoD Directive 3150.08,⁴⁹ and the Nuclear Weapon Accident Response Procedures (NARP)⁵⁰. Additionally, substantial interdepartmental planning on ER coordination in the event of a nuclear disaster involving, inter alia, the Federal Emergency Management Agency,⁵¹ Homeland Security,⁵² Centers for Disease Control and Prevention⁵³ yields valuable research on the effects of nuclear emergencies and protective measures. Yet public awareness of the risk of HINW and responses to broader HI such as victim assistance, migration, and the environment remains unclear. Growing civil society research and advocacy on HINW should focus on and address such gaps in ER governance and nuclear policy.

Multilateral Setting

The main focus of the US multilateral efforts on nuclear weapons has been on arms control and risk reduction rather than on HINW. At the 2023 Preparatory Committee Meeting (PrepCom) for the 2026 NPT RevCon, Ambassador Bruce Turner said that the US commitment to the NPT and its three pillars is based on "our national security interests and our understanding of the humanitarian impacts of the use of nuclear weapons."⁵⁴ Beyond this statement, however, the US government has not quoted HINW in multilateral settings. Instead, through participation at a past HINW conference in Vienna in 2014, it explores the study of humanitarian impacts and centres official responses⁵⁵ around "creating an enabling environment for nuclear disarmament".⁵⁶ This approach entails furthering the NPT by reducing nuclear stockpiles, de-alerting, de-targeting, and bolstering research and partnerships on verification and monitoring.⁵⁷ This arms control-

47. US Department of Defense, 2022 Nuclear Posture Fact Sheet: U.S. Deterrence Strategy and Policy (2022), <https://media.defense.gov/2022/Oct/27/2003103923/-1/-1/1/NUCLEAR-STRATEGY-AND-POLICY-NPR-FACTSHEET.PDF>.

48. US Department of Defense, DoD Instruction 523016 "Public Affairs Guidance for Nuclear Weapons and Radiological Material Incidents" (effective 24 October 2023), <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/523016p.pdf?ver=rRy4JdU9G6llxLQ6AUrVxg==>.

49. Department of Defense, DoD Directive 3150.08 "DoD Response to U.S. Nuclear Weapons and Radiological Material Incidents" (effective 27 November 2020) <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/315008p.pdf?ver=hy5h7iNjQT6WIU18nmb4A==>.

50. US Department of Defense, DoD 3150.8-M "Nuclear Weapon Accident Response Procedures (NARP)", <https://www.acq.osd.mil/ncbdp/narp/>.

51. Federal Emergency Management Agency (FEMA), Nuclear Detonation Response Guidance: Planning for the First 72 Hours (March 2023), https://www.fema.gov/sites/default/files/documents/fema_oet-72-hour-nuclear-detonation-response-guidance.pdf.

52. The National Academies and US Department of Homeland Security, News & Terrorism: Communicating in a Crisis: Nuclear Attack, updated 19 May 2022, https://www.dhs.gov/xlibrary/assets/prep_nuclear_fact_sheet.pdf.

53. Centers for Disease Control and Prevention, Information for Emergency Response, updated 7 November 2022, https://www.cdc.gov/nceh/radiation/emergencies/first_responders.htm.

54. Statement by Ambassador Bruce Turner.

55. Statement by Ambassador Adam Scheinman, US Statement during Discussion/General Debate, Vienna Humanitarian Impact of Nuclear Weapons Conference, 9 December 2014, Vienna, Austria, https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/vienna-2014/9Dec_USA.pdf.

56. Tariq Rauf, "The NPT at 50: Perish or Service?", Arms Control Association (March 2020), <https://www.armscontrol.org/act/2020-03/features/npt-50-perish-survive>.

57. Statement by Ambassador Adam Scheinman, US Statement during Discussion/General Debate, Vienna Humanitarian Impact of Nuclear Weapons Conference, 9 December 2014, Vienna, Austria, https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/vienna-2014/9Dec_USA.pdf.

centric approach lacks concrete commitments to HINW. Categorical statements on HINW, active participation at HINW conferences, and support for HINW research and discussion could boost US credibility in enhancing international security.

POLICY RECOMMENDATIONS

Nationally, the P5 should build capacity in understanding HINW by merging existing ER and crisis management measures into a comprehensive HINW policy that is currently lacking in each of the P5 States. This must take into account wider economic, social, political, and environmental factors associated with nuclear risks. Such a policy benefits the national interest of reducing security and diplomatic risks by alleviating strategic competition because nuclear safety measures are also confidence-building measures.

- The P5 should conduct comprehensive national assessments of potential HINW and reevaluate the allocation of resources for nuclear modernisation and national resilience.
- The P5 should formulate and communicate their respective interpretations and approaches to HINW. This is crucial for developing a common understanding of nuclear weapons issues.
- Substantial expertise can be drawn from robust civil society and academia in the P5 to facilitate this policy making process. Meaningful dialogue and collaborative inputs between government and civil society ensure a more inclusive approach and enhance the legitimacy of nuclear policy.

Multilaterally, the P5 should undertake research collaboration to share best practices, exchange information, and discuss common understandings of HINW related to nuclear weapons tests, explosions, accidents etc. They should, for example, create a technical forum within the P5 to address related topics (i.e. crisis coordination, emergency response, victims assistance) where international organisations (such as the CTBTO and IAEA) offer assistance and help facilitate proceedings.

- A dedicated project on HINW should be integrated into the P5 Young Professionals Network.
- Non-P5 States and members of regional organisations should leverage existing fora to build capacity on HINW. For instance, stakeholders can engage China through G77, France through the EU, and the UK and US through the North Atlantic Treaty Organisation (NATO) in addition to the NPT and UN fora.

The P5 should strengthen the NPT and integrate HINW in decision-making by adopting NSAs and risk reduction measures such as de-targeting cities and critical infrastructure. NPT States Parties should underscore the importance of NWFZs and the need to increase predictability when engaging the P5.


- NPT States Parties should explore ways to integrate nuclear safety and security with the HI agenda and the notion of “undiminished security for all”.⁵⁸ This could generate more actionable proposals to address unifying agenda items without reexamining divisive topics.

Conclusion

The P5's nuclear policies and doctrines revolving around national security, geopolitics, and strategic competition should be nuanced by human security (i.e. emphasising personal and communal safety).⁵⁹ The P5 benefits from possessing ever-evolving expertise and increased interest in developing national capacity in nuclear-related ER. The P5 should capitalise on this to holistically refine their nuclear policy to include HINW to reduce nuclear risks and build trust and confidence in the NPT. Non-P5 States Parties and civil society should engage the P5 by identifying suitable fora (i.e. G77, EU, NATO) and approaches (i.e. NWFZ, EWIPA) in exploring HINW topics via technical collaborations and discussions on common understanding. Future research should study regional and bilateral policy options on HINW involving the P5 since more actionable proposals of a limited scale can stimulate multilateral processes.

58. Andrea Berger, A Mexican Stand-Off: The P5 and the Humanitarian Impacts of Nuclear Weapons Initiative.

59. Rhianna Tyson, 'Reframing the Debate Against Nuclear Weapons', IAEA Bulletin, Vol. 46, No. 2, <https://www.iaea.org/sites/default/files/publications/magazines/bulletin/bull46-2/46203591619.pdf>.



Mediators, Champions of Transparency, and Educators: Identifying the Roles of Civil Society in Strengthening the HINW Agenda through the NPT

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Executive Summary

This paper navigates the historically overlooked, yet pivotal role of Civil Society Organisations (CSOs) in advancing the Humanitarian Impacts of Nuclear Weapons (HINW) agenda within the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) review process. Examining past successes, it underscores the tangible contributions of CSOs across four key roles: mediators and information providers, champions of transparency and accountability, and educators and awareness raisers.

Accepting that CSOs have made impactful contributions to both the NPT process and the humanitarian discourse on nuclear weapons, there exists a compelling need to unify these two spheres of success. Through its policy recommendations, this paper calls for greater collaborative efforts within the NPT process, and outside of it, to amplify and harness the roles of CSOs in furthering the HINW process.

Introduction

On April 20th 2010, the humanitarian impact of nuclear weapons (HINW) agenda was first set into action in a speech given by Jakob Kellenberger, then President of the International Committee of the Red Cross (ICRC).⁶⁰ Addressing the diplomatic community in Geneva, Switzerland, Kellenberger highlighted the role that the ICRC played in organising humanitarian aid following the bombing of Hiroshima, expressly noting the current insufficient capabilities to address humanitarian emergencies that would be caused by nuclear weapons use. Since the HINW agenda's inception, civil society organisations (CSOs) have been at the forefront, having "re-emerged, more energised, in the nuclear weapons debate, and [with] academia and experts from different fields... [showing] an increased focus on this dimension of the issue."⁶¹ However, despite the clear link between civil society and the successful development of the HINW agenda, CSOs are still largely under utilised within the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) review process.

60. Kmentt, "The development of the international initiative on the humanitarian impact of nuclear weapons and its effect on the nuclear weapons debate," *International Review of the Red Cross* (2015), 97 (899), 681–709. doi:10.1017/S1816383116000059

61. Kmentt, "The development of the international initiative on the humanitarian impact of nuclear weapons and its effect on the nuclear weapons debate," *International Review of the Red Cross* (2015), 97 (899), 682. doi:10.1017/S1816383116000059

The NPT review process would be well served to take lessons on how to best incorporate and utilise CSOs from their work on the HINW agenda. Policy recommendations regarding how best to reimagine and reinvigorate the role of CSOs in the NPT process as a whole are often fairly broad and fail to recognise the existing outsized role that civil society already plays in championing certain topics, such as the HINW agenda. Recent recommendations for bolstering civil society's impact within NPT processes have included further integration into, and more formalised participation in, the NPT Preparatory Committees (PrepComs) and Review Conference (RevCon), serving as monitors on the implementation of Article VI disarmament obligations,⁶² or for CSOs to be involved in reviewing national reports.⁶³ However, such policy recommendations – while essential – do not seek to harness existing civil society strengths, nor do they specifically address the HINW agenda. By analysing the ways in which CSOs have previously been employed to successfully champion the HINW agenda, more precise policy recommendations can be made on how to apply such efforts within the NPT framework.

Thus, the aim of this paper is to identify the most effective and urgent role(s) of civil society in supporting the humanitarian agenda within the NPT context, ensuring specific and operational policy recommendations based on current practices. The following sections briefly discuss the historical context of CSOs within the NPT process, followed by analysis on the current roles civil society fills in strengthening the humanitarian impact agenda within the NPT. This paper identifies and focuses on four main roles of civil society, namely as mediators and fact-finders, advocates for transparency and accountability, and as educators and campaigners for public awareness.

Analysis

The Historical Involvement of Civil Society in the NPT and the Development of the Humanitarian Initiative

Throughout the last three decades, civil society has played a dynamic role in promoting disarmament, nuclear transparency, and humanitarian issues. Prior to 1994, civil society participation in the NPT process largely took place through activism and grassroots campaigns. Successful campaigns, such as Greenpeace's Pacific Peace Odyssey – which led to the signing of the New Zealand Nuclear Free Zone, Disarmament and Arms Control Act in 1987 – were spearheaded by activists who used outreach and public awareness to achieve their objectives.⁶⁴ Activists met with government officials and visited schools and public venues to spread their message. Elsewhere, movements like the Freeze Campaign in the US successfully brought together diverse coalitions, including major religious institutions, national defence organisations, and labour unions to effect change.⁶⁵ These early initiatives by activists still hold important lessons for how to effectively mobilise civil society within the NPT. The success of these campaigns lent increased legitimacy to CSOs, and in the 1990s, NGOs and civil society were gradually welcomed into the inner circle of the NPT decision-making process.

Civil society actors have also played a prominent role in the development and popularity of the humanitarian impacts agenda itself. After the Australian government refused to endorse a 2013 joint statement on the humanitarian impact of nuclear weapons, the International Campaign to Abolish Nuclear Weapons (ICAN) obtained documents that revealed the Australian government's plans to actively campaign against a global ban on nuclear weapons, including by "undermin[ing] the efforts of 'progressive states' and 'their civil society partners.'"⁶⁶ The revelation was met with sharp criticism from across civil society sectors, including from former Australian foreign minister Gareth Evans and Australian Red Cross chief executive Robert Tickner. The latter's overture to the Australian government received a response from then-Foreign Minister Bob

62. The United Nations, The Treaty on the Non-Proliferation of Nuclear Weapons (NPT), 2005 Review Conference, May 2005, <https://www.un.org/en/conf/npt/2005/npptreaty.html>

63. Markram and Mukhatzhanova, "Further Strengthening the NPT Review Process: Reflections and Recommendations," Vienna Center for Disarmament and Non-Proliferation, May 2023, <https://vcdnp.org/wp-content/uploads/2023/06/NPT-SRP-paper-full-with-covers.pdf>

64. Greenpeace, "Nuclear Campaign in Aotearoa," Greenpeace History, <https://history.greenpeace.org/aotearoa/nuclear/>

65. Arms Control Association, "Looking Back: Five Decades of Proliferation Analysis," Arms Control Today, December 2010, https://www.armscontrol.org/act/2010_12/LookingBack

66. Tim Wright, "Australia's opposition to a ban on nuclear weapons," International Campaign to Abolish Nuclear Weapons, August 28, 2013, <https://icanw.org.au/wp-content/uploads/2013-August-ICAN-analysis-of-FOI.pdf>

Carr.⁶⁷ This instance highlights the influence of CSOs within the HINW agenda and touches on each of the main roles of CSOs. ICAN was able to act as a fact-finder, revealing the plans of the Australian government, and subsequently mount a public campaign for transparency and accountability. The documents themselves also acknowledge the influence of CSOs as partners of states in nuclear non-proliferation and disarmament efforts. Today, civil society is more involved in the NPT process than ever but still faces significant challenges. NPT RevCons and PrepComs regularly hear from civil society actors, whether through the testimony of nuclear weapons survivors, non-proliferation advocacy groups, or otherwise. However, civil society actors face barriers to participation; they are only allowed to attend open sessions and have little opportunity to provide input on negotiations or the draft language of statements.⁶⁸ Much of the work of civil society is relegated to the intersessional period between these important conferences. Nevertheless, its role remains an important one in the NPT process and could be improved through lessons on civil society's successful work on the HINW agenda.

The Roles of Civil Society in the NPT Process

Mediation and Information Provision

Civil society can serve an important role by mediating between governments and the public, particularly communities impacted by nuclear weapons. Impacted communities are often disenfranchised or disempowered in the political process, while CSOs often possess more resources and political access. The representation of impacted communities in debates and discussions within the NPT process provides a unique combination of living scientific evidence and an injection of human empathy into a political arena where conversations are often abstract. In the words of Elizabeth Minor, "the inclusion of survivors in a way that does not exploit or objectify their experience but gives agency and empowerment has a logical centrality to the development of a humanitarian discourse."⁶⁹ Civil society has an imperative to act as a mediator to further this development.

Examples of governments marginalising impacted communities abound. US deceit surrounding the contents and viability of the Runit Dome,⁷⁰ the French government's 40-year abrogation of responsibility in Polynesia,⁷¹ and the global lack of compensation for victims of nuclear testing are but a few examples of how victims of nuclear colonialism have continually been exploited and marginalised. Civil society has the potential to change this. For example, the Radiation Exposure Compensation Act (RECA) Working Group, an informal coalition of nonprofit organisations, activists, and impacted community members, pooled their resources to fly impacted community members from New Mexico and the Marshall Islands to Washington DC to speak with legislators.⁷² The national press coverage received from their campaign to extend and expand RECA resulted in the passage of the bill in the Senate on 7th March 2024.⁷³ Yet, such examples are rare. Without exploiting their testimonies, civil society must do more to amplify the voices of impacted communities and foster dialogue between communities and governments.

To this end, CSOs also act as a source of research, information, and context on the impacts of nuclear weapons to provide factual support for the human stories central to the humanitarian initiative. Delegitimising nuclear weapons as acceptable instruments of statecraft is a fundamental part of the HINW, and progress will be strengthened as supportive research.⁷⁴ Through research, civil society can highlight the tension between traditional conversations about strategic utility and deterrence with the catastrophic

67. Philip Dorling, "ALP nuclear backflip linked to US defence," *The Age*, October 2, 2013, <https://www.theage.com.au/politics/federal/alp-nuclear-backflip-linked-to-us-defence-20131001-2uqtq.html>

68. Anna Hood, "Roadblocks to Disarmament in the Nuclear Non-Proliferation Treaty System," *Journal of Conflict and Security Law* 28, no. 3 (Winter 2023): 593–614, <https://doi.org/10.1093/jcsl/krad011>

69. Elizabeth Minor, "Changing the Discourse on Nuclear Weapons: The Humanitarian Initiative," *International Review of the Red Cross* 97, no. 899 (2015): 717, <https://doi.org/10.1017/s181638311600014x>.

70. Susanne Rust, "How the U.S. Betrayed the Marshall Islands, Kindling the Next Nuclear Disaster", *LA Times*, November 10, 2019, <https://www.latimes.com/projects/marshall-islands-nuclear-testing-sea-level-rise/>

71. INTERPRT et al, "The Moruroa Files," <https://moruroa-files.org/en/investigation/moruroa-files>

72. Zack Budryk, "Hawley, Lujan Call on House to Pass NDAA Amendment Expanding Radiation Compensation", *The Hill*, September 9 2023, <https://thehill.com/policy/energy-environment/4214711-hawley-lujan-call-on-house-to-pass-ndaa-amendment-expanding-radiation-compensation/>

73. Kyle Ann Sebastian, "Senate Passes Bill to Provide Cancer Screenings, Compensation for Victims of U.S. Nuclear Weapons Complex," *Union of Concerned Scientists*, March 7, 2024, <https://www.ucsusa.org/about/news/senate-passes-reca>

74. Nick Ritchie and Kjølvi Egeland, "The Diplomacy of Resistance: Power, Hegemony and Nuclear Disarmament," *Global Change, Peace & Security* 30, no. 2 (2018): 121–41, <https://doi.org/10.1080/14781158.2018.1467393>. Elizabeth Minor, "Changing the Discourse on Nuclear Weapons: The Humanitarian Initiative," *International Review of the Red Cross* 97, no. 899 (2015): 711–30, <https://doi.org/10.1017/s181638311600014x>.

impacts of nuclear weapons use, thereby changing the terms of the debate. The humanitarian initiative attempts to shift the burden of proof onto nuclear-armed countries to show the legitimacy of their position. Such methods have been fundamental to the advocacy of the past decade – the three humanitarian conferences of the 2010s facilitated detailed elaboration of scientific research and historic testimony on the harms caused by nuclear weapons, and in turn developed the momentum towards the Treaty on the Prohibition of Nuclear Weapons (TPNW).⁷⁵

New research is needed to provide continual evidence of the risks and consequences of nuclear weapons. Recent research on the effects of nuclear war on the global environment and food security, which expanded the breadth of knowledge surrounding the idea of ‘nuclear famine,’ was supported by CSOs and serves to demonstrate the power of civil society research initiatives.⁷⁶

Transparency and Accountability

Transparency has proven instrumental to the effectiveness of international agreements and is a confidence-building measure, especially with highly sensitive and carefully negotiated agreements such as the NPT. The term refers both to the disclosure of information, as well as the accessibility and reliability of it. With increased transparency about nuclear weapons, there is “greater predictability with regard to the intentions and capabilities of states, thus facilitating mutual understanding, easing tensions, and reducing misperceptions.”⁷⁷ The NPT prescribes transparency in different ways, requiring non-nuclear weapons states to submit to IAEA safeguards in order to fulfil their non-proliferation obligations. Article VI, however, does not require transparency measures such as IAEA inspections or even self-reporting to assess nuclear weapons states’ progress on their disarmament commitments. Consequently, there have been increased calls for greater transparency on disarmament actions and nuclear expansion programmes, highlighting an important role for CSOs.⁷⁸

CSOs can promote transparency in several ways. Primarily, they can pressure governments to release information on decisions and actions taken so such actions would be available for public scrutiny. With that, they can publicly expose areas where transparency is lacking and hold leaders accountable to explain their actions.⁷⁹ Moreover, CSOs can collect and provide important information on verification and compliance to the NPT. Developments in science and technology have significantly changed methods of data collection, allowing civil society actors to use open-source tools such as satellite imagery to monitor state compliance to disarmament agreements or ceasefires.⁸⁰ By requesting access to information held by the government, or even by gathering their own data, CSOs are able to uncover previously overlooked issues or introduce new information on existing problems. One such example is the Moruroa Files which used declassified government documents to uncover the fact that the French government deliberately tested nuclear weapons despite the fallout from the test being blown in the direction of nearby, populated islands.⁸¹ This type of data can be extremely valuable, for example, in discussing the impact of weapons production and maintenance on civilians.⁸² Therefore, promoting transparency around issues related to nuclear non-proliferation and disarmament can emphasise the humanitarian impacts of nuclear weapons.

75. Rebecca Davis Gibbons, “The humanitarian turn in nuclear disarmament and the Treaty on the Prohibition of Nuclear Weapons”, *The Nonproliferation Review*, 25:1-2 (2018), pp. 11-36, DOI: 10.1080/10736700.2018.1486960

76. L. Xia, et al., “Global food insecurity and famine from reduced crop, marine fishery and livestock production due to climate disruption from nuclear war soot injection.” *Nature Food* 3, (2022): 586–596. <https://doi.org/10.1038/s43016-022-00573-0>

77. Nicholas Zarimpas and Stockholm International Peace Research Institute, eds., *Transparency in Nuclear Warheads and Materials: The Political and Technical Dimensions* (Oxford ; New York: Oxford University Press, 2003).

78. Tim Caughley, “Transparency in the Nuclear Non-Proliferation Regime,” UNIDIR Resources, 2012; Jonas Siegel, “Expanding Nuclear Weapons State Transparency to Strengthen Nonproliferation” (Center for International & Security Studies, U. Maryland, 2015), <https://www.jstor.org/stable/resrep05006>.

79. David Armstrong Spini Valeria Bello, Julie Gilson, Debora, ed., *Civil Society and International Governance: The Role of Non-State Actors in Global and Regional Regulatory Frameworks* (London: Routledge, 2010), <https://doi.org/10.4324/9780203840054>.

80. Mirko Sossai, “Transparency as a Cornerstone of Disarmament and Non-Proliferation Regimes,” in *Transparency in International Law*, ed. Andrea Bianchi and Anne Peters (Cambridge: Cambridge University Press, 2013), 392–416, <https://doi.org/10.1017/CBO9781139108843.022>

81. Interprt. n.d. “Moruroa Files.” <https://moruroa-files.org/en/book#:~:text=Using%20an%20archive%20of%202000,French%20nuclear%20testing%20in%20the>.

82. Brian Rappert et al., “The Roles of Civil Society in the Development of Standards around New Weapons and Other Technologies of Warfare,” *International Review of the Red Cross* 94, no. 886 (June 2012): 765–85, <https://doi.org/10.1017/S1816383112000744>

Education and Public Awareness

Despite the threat of nuclear weapons being, as some experts argue,⁸³ at its highest since the Cold War, there is comparatively low public awareness of nuclear weapons risks today compared to previous decades. A major role of civil society is to build public understanding of nuclear weapons policies, helping to make nuclear weapons issues accessible to populations and interpret exclusionary technical language. The Nuclear Freeze campaign of the 1980s⁸⁴ is a successful example of how CSOs can galvanise public support through education and awareness. The campaign's demand to freeze the nuclear arms race attracted a diverse coalition of the American public and culminated in a rally of approximately one million people in New York City in 1982 in support of the Second United Nations Special Session. There is a public desire for these sorts of educational initiatives. In the US, for example, a majority of respondents to a 2023 survey said they were interested in learning more about nuclear weapons policy.⁸⁵

In addition to helping reshape narratives around nuclear weapons, civil society can also provide accessible ways for people to understand the linkages between nuclear weapons and other issues, such as climate change, social and racial justice, and militarism. However, while the linkages between issues are understood within the nuclear weapons expert community, nuclear weapons advocacy and activism in the public realm remains fairly insulated from other movements, limiting the ability for CSOs promoting action under the NPT to benefit from the support and learn from the successes and failures of other international movements.

Finally, civil society organisations provide educational support to the states and diplomats participating in the NPT process. Diplomats representing their countries at NPT fora typically do not have expertise in nuclear issues; they therefore rely on experts from civil society to provide expertise and resources to inform their deliberations. Some states bring CSO experts as part of their national delegations for this reason. To name just a few, William Potter from the Center for Nonproliferation Studies and Nick Ritchie from the University of York have advised the Austrian delegation, Cesar Jaramillo from Project Ploughshares has advised Canada, Nobumasa Akiyama from Hitotsubashi University has advised Japan, and Sahil Shah from the Council on Strategic Risks has advised Switzerland, among others. The inclusion of external, non-governmental advisors to national delegations directly reflects how civil society's knowledge and experiences impact the outcomes of the NPT meetings. In regard to the HINW, CSOs can play an important role specifically in educating the delegations from countries with fewer resources or who do not have any historical experiences with nuclear weapons.

POLICY RECOMMENDATIONS

Mediation and Information Provision

- CSOs should engage in further studies on topics related to the HINW and present these findings at NPT forums. To name a few:
 - Food supply and the impact of radiation on micronutrients
 - Predictive nuclear fallout patterns
 - The nuclear weapons and climate change nexus
 - Generational physical and psychological trauma of nuclear test and bombing victims
- CSOs should push for inclusion of HINW topics such as victim assistance, environmental remediation, and radiological weapons at future NPT RevCons via advocacy and lobbying efforts during the PrepComs. At RevCons, assist delegations in drafting formal statements on such topics.
- CSOs and states should uplift and centre the experiences, voices, and work of communities that have lived experiences with the HINW in NPT participation by giving impacted community members space on delegations, collaborating with impacted communities during the intersessional period to draft formal statements and working papers with their input, and providing them with financial and/or logistical support to organise side events during the conference.

83. Bill Chappell, "Why the U.N. chief says we are 'one miscalculation away from nuclear annihilation'," NPR, August 2, 2022, <https://www.npr.org/2022/08/02/1115160155/guterres-one-miscalculation-away-nuclear-annihilation#:~:text=U.N.-Secretary-General%20Ant%C3%B3nio%20Guterres%20says%20we%20are%20facing%20%22a%20time,Nations%20in%20New%20York%20City,Sarah%20Starkey,%20PRESS%20RELEASE%20Doomsday%20Clock%20remains%20at%2090%20seconds%20to%20midnight,Bulletin%20of%20the%20Atomic%20Scientists,January%2023,%202024>, <https://thebulletin.org/2024/01/press-release-doomsday-clock-remains-at-90-seconds-to-midnight/>

84. S Wittner, The Nuclear Freeze and its Impact, https://www.armscontrol.org/act/2010_12/LookingBack

85. Dina Smeltz, Craig Kafura, and Sharon K. Weiner, "Majority in US Want to Learn More about Nuclear Policy," The Chicago Council on Global Affairs, July 19, 2023, <https://globalaffairs.org/research/public-opinion-survey/majority-us-want-learn-more-about-nuclear-policy>

Transparency and Accountability

- The NPT President and member states should create a formal role for CSOs as monitors of NPT parties' actions related to the HINW agenda and create a formal process for them to report their findings and assessments at PrepComs and RevCons.

Education and Public Awareness

- The NPT President and member states should create a fund to provide financial support to civil society actors and members of impacted communities to attend and participate in NPT fora as nongovernmental delegations. Explore the creation of an official delegation for impacted community representatives, including representatives from the *hibakusha*, nuclear weapons test sites, etc.
- States should bring (or continue to bring) civil society experts as part of their delegations to PrepComs and RevCons to act as advisors.

Conclusion

There is a rich, decades-long history of civil society efforts to advance nuclear weapons issues. These efforts fall within four general roles of civil society: mediation and information provision, advocacy for transparency and accountability, education and campaigning for public awareness, and bridge builders among stakeholders. While CSOs have successfully contributed to both the NPT process and addressing humanitarian issues of nuclear weapons, there is a need to bring these two areas of success together, to advance civil society's role in supporting the HINW agenda specifically within the NPT process.



Strengthening the Humanitarian Impacts Agenda: Nuclear Education and Raising Nuclear Awareness Within the NPT'

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Executive Summary

This policy paper emphasises the need for comprehensive nuclear education to address gaps and biases in public understanding of nuclear weapons. The first section defines key terms of nuclear knowledge and education and outlines the role of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) as a forum for, and of, nuclear education. The second section identifies blind spots in the nuclear education agenda, emphasising the need for an education that goes beyond technical aspects and includes ethical, moral, and social dimensions. The final section offers policy recommendations to enhance nuclear education, focusing on the humanitarian impacts of nuclear weapons. This policy paper underscores the vital role of inclusive and comprehensive nuclear education in achieving the objectives of the NPT and fostering a more informed and engaged global community on nuclear issues.

Introduction

As we stand in the 21st century, the world is witnessing a renewed interest in nuclear issues, spurred by global political shifts, technological advancements, rearmament and modernisation processes, and growing awareness of the humanitarian consequences of nuclear weapons. In this context, nuclear education emerges as a tool for disseminating knowledge, shaping public opinion, informing policy decisions, and fostering a culture of peace and disarmament. Traditionally, strategic and technical considerations have dominated discussions around nuclear weapons, often overlooking the profound humanitarian consequences of their use, testing, and overall production. This gap in understanding and communication underscores the need for a comprehensive approach to nuclear education that transcends traditional boundaries, weaving together technical, ethical, historical, and human perspectives.

This analysis aims to explore the current state of nuclear education, identify gaps and biases in the existing educational frameworks, and propose strategies to enhance knowledge generation, dissemination, and application within the NPT framework. By doing so, it seeks to contribute to the ongoing efforts to mitigate the humanitarian risks associated with nuclear weapons and to pave the way towards a safer, more informed world free from the existential threat posed by them.

Importance of Nuclear Knowledge

Nuclear knowledge refers to the understanding of nuclear physics, its practical technological applications, and its relationship with international and physical security. The world should understand nuclear knowledge holistically and inclusively and thereby consider the political environment nuclear weapons exist in and which they shape. Each point in the nuclear fuel cycle and weapons production has humanitarian impacts and lasting environmental consequences: from workers and locations of uranium mining, milling, enrichment, power plants, and nuclear waste facilities to victims and survivors of nuclear catastrophes, testing and use.

Crucial to using nuclear knowledge for advancing peaceful uses of nuclear weapons is the understanding of the design, construction, operation, and decommissioning of nuclear power plants (NPPs).⁸⁶ Safe reactor operations require the development of, and adherence to, rigorous safety protocols and risk assessments with strict compliance rules.⁸⁷ In addition to power generation, nuclear knowledge has uses within medicine – both for research and for practical industrial applications like neutron activation analysis and radiography.⁸⁸ Nuclear medicine also relies on this knowledge to use radiopharmaceuticals to develop treatments and diagnostic tools for diseases such as cancer and heart conditions. According to the International Atomic Energy Agency (IAEA), “[m]ore than 100 radiopharmaceuticals have been developed, using radioisotopes that were either produced by nuclear research reactors or cyclotrons.”⁸⁹

Nuclear non-proliferation is another critical component of nuclear knowledge divided into technical and political areas. The technical area includes engineering and the safe use of nuclear facilities enabled by the work of the IAEA. The IAEA develops and manages the safeguards process, produces and disseminates information, and organises topical workshops and courses for nuclear specialists.⁹⁰ The political area focuses on enhancing global peace by discouraging weapons proliferation. This links to the disarmament pillar of the NPT, which promotes a security paradigm independent of nuclear arsenals. Across each of these pillars, nuclear knowledge is critical: knowledge about the development, production, possession, testing, strategic and political value ascribed to nuclear weapons and the development of strategies for disarmament are of interest here to create a paradigm for thinking about national and international security issues without reliance on nuclear arsenals.⁹¹

Nuclear Education and the NPT Process

The 2000 United Nations General Assembly (UNGA) Resolution 55/33 E paved the way for the international community to engage with disarmament and non-proliferation education as it clearly demanded action from the global community.⁹² As one of the main fora where nuclear issues are discussed, the NPT Meeting of States’ Parties first took note of the relevance of disarmament education at the 2002 PrepCom, where its importance was acknowledged by member states, particularly concerning future generations.⁹³ Since then, NPT member states have adopted various strategies for nuclear education, with differences in audience, actors, and goals. Official documents note regular support for educational efforts, and some states actively and regularly report on their specific activities.

Japan, the only nation to have experienced the devastating effects of nuclear weapons attacks, has been particularly active in promoting nuclear education. Since 2004, Japan’s national reports have included its educational efforts, while the issue has received a standalone working paper since 2005.⁹⁴ Together with

86. Alekseev, N. N., and Aleksey Vladimirovich Balastov. “Prospects of Nuclear Energy Research and Analysis of the Position of People on This Issue.” January 1, 2014). <https://core.ac.uk/download/53084396.pdf>.

87. “IAEA Safety Standards Series No. GSG-8: Radiation Protection of the Public and the Environment. General Safety Guide.” International Atomic Energy Agency (IAEA). Accessed January 12, 2024. https://www-pub.iaea.org/MTCD/Publications/PDF/PUB1781_web.pdf.

88. Artem Vlasov. “Studying and Preserving Cultural Heritage Using Nuclear Science and Technology.” IAEA. May 9, 2023. <https://www.iaea.org/newscenter/news/studying-and-preserving-cultural-heritage-using-nuclear-science-and-technology>.

89. “Radiopharmaceutical production.” IAEA. Accessed January 29, 2024. <https://www.iaea.org/nuclear-science/isotopes/radiopharmaceutical-production#:~:text=More%20than%20100%20radiopharmaceuticals%20have,radioactive%20substances%20and%20chemical%20processing>.

90. “Training courses.” IAEA. Accessed January 12, 2024. <https://www.iaea.org/services/education-and-training/training-courses>.

91. “Disarmament Education.” United Nations Office for Disarmament Affairs (UNODA). Accessed January 12, 2024. [education.unoda.org/](https://www.unoda.org/).

92. General Assembly. “General and complete disarmament.” A/RES/55/33. United Nations. January 12, 2001. documents.un.org/api/symbol/access?j=N0056137&t=pdf.

93. Preparatory Committee for the 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. “Report of the Preparatory Committee on Its 1st Session.” NPT /CONF.2005/PC.I/21/Corr.1. United Nations. May 17, 2002. digitallibrary.un.org/record/465256.

94. 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. “Japan’s Efforts in Disarmament and Non-Proliferation Education.” NPT /CONF.2005/WP.31. United Nations. May 10, 2005. www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2005/wp/WP31.pdf.

other countries, Japan has also continuously issued joint working papers on the topic.⁹⁵ These papers highlight the importance of educating the public about the dangers of nuclear weapons and the significance of education in identifying potential pathways to nuclear disarmament.⁹⁶ Mexico has focused its efforts on prioritising youth engagement and educational inclusion,⁹⁷ while New Zealand has established two national funds to support disarmament and non-proliferation researchers and educators.⁹⁸ Civil society organisations and academia are at the forefront of efforts to promote education within the NPT context, which makes them essential partners for states to fulfil their goals and obligations under the NPT.⁹⁹

As a result of these and other efforts, the 2010 Action Plan formally introduced education as a task for member states with Action 22, stating that “[a]ll States are encouraged to implement the recommendations contained in the UN Secretary-General report (A/57/124). This is the United Nations study on disarmament and non-proliferation education with the intent to advance the goals of the NPT in support of achieving a world without nuclear weapons.”¹⁰⁰ Since then, states – to different degrees – have included their efforts in their national reports. Subsequent conferences on the humanitarian impacts of nuclear weapons in Oslo, Nayarit, and Vienna have increased awareness of nuclear risks and the catastrophic impact of nuclear detonation.¹⁰¹ The discourse also shifted towards “further improving understanding and awareness of nuclear risks”¹⁰² as well as “the catastrophic impact of any nuclear detonation” through education.¹⁰³ Recent statements have highlighted the ongoing discourse in NPT meetings, emphasising the importance of raising awareness about the realities of nuclear weapon use through education.¹⁰⁴ While member states of the NPT regularly highlight the importance of nuclear education collectively and individually or collectively report on their activities in this regard, they have failed to collaboratively engage in a dialogue on how to streamline, strengthen, and widen the efforts on nuclear education through the NPT process.

Analysis

Gaps and Biases in the Nuclear Education Agenda

Public understanding of nuclear weapons has often been clouded by fear and exaggeration rather than logic, impacting discussions within related industries such as nuclear energy.¹⁰⁵ This has led to an over-reliance on a small cadre of experts and decision-makers, constraining public engagement in nuclear strategy debates. Thus, there is a need for education to demystify nuclear deterrence and its global costs, enabling the public to influence nuclear strategies meaningfully.

The abovementioned UNGA Resolution 55/33 E highlighted this need for a comprehensive educational approach,¹⁰⁶ and the subsequent UN study on disarmament and non-proliferation education (A/57/124) further emphasised the need for balanced, unbiased nuclear education.¹⁰⁷ However, to be effective, nuclear

95. 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. “Working paper on disarmament and non-proliferation education.” NPT /CONF.2005/WP30. United Nations. May 11, 2005. www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2005/wp/WP30.pdf.
96. “News & Views - Vol. 01, No. 07”. May 18, 1983. <https://core.ac.uk/download/229347839.pdf>.
97. 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. “National Report of Mexico on Measures Taken to Implement the United Nations Study on Disarmament and Non-Proliferation Education.” NPT /CONF.2005/34. United Nations. May 11, 2005. daccess-ods.un.org/access.nsf/Get?OpenAgent&DS=NPT/CONF.2005/34&Lang=E.
98. “Report Submitted by New Zealand.” NPT/CONF.2015/PC.I/8. United Nations. April 27, 2012. <https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/prepcom12/reports/8.pdf>.
99. “Cluster One; New Zealand Statement.” United Nations. <https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/prepcom07/statements/8mayNewZealand.pdf>.
100. 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. “Final Document.” NPT/CONF.2010/50. United Nations. <https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2010/FinalDocument.pdf>.
101. “Humanitarian Impact of Nuclear Weapons.” Reaching Critical Will. Accessed January 25, 2024. <https://www.reachingcriticalwill.org/disarmament-fora/hinw>.
102. 2020 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. “A Nuclear Risk Reduction Package.” NPT/CONF.2020/WP9. United Nations. May 14, 2021. <https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2022/documents/WP9.pdf>.
103. 2020 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. “Taking Forward Nuclear Disarmament.” NPT/CONF.2020/WP5. United Nations. November 11, 2021. <https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2022/documents/WP5.pdf>.
104. “Non-Proliferation and Disarmament Initiative Statement; 2023 Preparatory Committee to the 11 NPT Review Conference.” Non-Proliferation and Disarmament Initiative (NPDI). https://reachingcriticalwill.org/images/documents/Disarmament-fora/npt/prepcom23/statements/31July_NPDI.pdf.
105. Baron, J., and Herzog, S. 2020. “Public Opinion on Nuclear Energy and Nuclear Weapons: The Attitudinal Nexus in the United States.” Energy Research & Social Science, 68.
106. United Nations General Assembly. 2000. “Resolution 55/33 E, 20 November.” UNGA A/RES/5533/2000.
107. United Nations General Assembly. 2000. “Resolution 55/33 E, 20 November.” UNGA A/RES/5533/2000.

education must expand beyond its traditional focus on technical and policy aspects to include the ethical, moral, and human dimensions of nuclear weapons. Nuclear education should particularly expand on three interrelated key areas: demystifying nuclear deterrence, understanding nuclear terminology, and highlighting the humanitarian impact of nuclear weapons.

Many nuclear education programs often focus on dates, treaties, and the technical components of nuclear weapons, which could create a detached perspective, overlooking the profound humanitarian impact of nuclear issues.¹⁰⁸ It is also important to provide historical context and the strategic thinking behind nuclear deterrence to enhance public dialogue and allow and demand greater transparency from policymakers.

Nuclear education should be envisioned as fact-based, scientifically accurate, and historically informed, incorporating the experiences of communities impacted by the development and testing of nuclear weapons. Building on existing initiatives by some member states and civil society, an inclusive approach preserves historical memory and ensures a comprehensive understanding of nuclear knowledge. Highlighting the lived experiences of survivors, such as the Hibakusha, downwinders, and victims from the Marshall Islands and Kazakhstan, is vital for preserving their experiences for future generations. It allows for a deeper look into the long-lasting and severe consequences of nuclear weapons testing, use, and production¹⁰⁹. This illustrates the devastating environmental, health, and socio-economic effects of the nuclear weapons complex, offering a tangible perspective on the human costs involved. Incorporating these narratives leads to a fuller understanding of nuclear weapons' ethical, legal, and emotional aspects, which are particularly relevant to disarmament efforts under the NPT. Additionally, if stakeholders expand the understanding and practice of nuclear education to include the development, testing, and military (in addition to the political use) of nuclear weapons, critical analyses of nuclear policy, and a broader discussion on the nuclear order, it would provide a more comprehensive and engaging learning experience that is needed to reflect the complexity of the topic entirely.

Education should involve experts, decision-makers, politicians, and the general public, making it accessible regarding content and material availability.¹¹⁰ Nuclear education is often siloed, primarily confined to nuclear physics and political science. However, the topic of nuclear weapons extends far beyond these disciplines and should not be isolated to professionals in only a few directly related fields. Nuclear education urgently requires new, interdisciplinary talent, embracing diverse perspectives to challenge existing paradigms. This includes environmental science, sociology, psychology, Science, Technology, Engineering and Mathematics fields (STEM), international relations, and more. Fostering a deeper, more holistic understanding of nuclear weapons¹¹¹ can raise awareness¹¹² and facilitate public debate on how technical processes, policy decisions, and consequences are intertwined.¹¹³

Nuclear education is central to raising awareness at various levels, contributing to non-proliferation and disarmament and the pursuit of peaceful uses of nuclear technology – as envisioned by the NPT. Improving nuclear education and knowledge is crucial to enabling everyone affected by nuclear weapons to participate in meaningful discussions and decision-making processes. This must include addressing the complex humanitarian impacts of nuclear weapons.

Dimensions of Knowledge Generation and Dissemination on the Humanitarian Impacts of Nuclear Weapons

At a time when the threat of nuclear weapons remains a critical global issue, it is crucial to prioritise understanding these weapons and address their humanitarian consequences. To achieve this, a comprehensive and inclusive approach to knowledge generation, dissemination, and application is necessary, and the NPT member states should build on and expand existing initiatives along the following dimensions:

108. Cottingham, J. 1983. "The Nuclear Arms Race and the Science Curriculum." *Iowa Science Teachers Journal*.

109. Unal, B., Lewis, P., Sasan, A.. 2017. "The Humanitarian Impacts of Nuclear Testing." *International Security Department*. 1-38.

110. *United Nations Study on Non-Proliferation and Disarmament Education*.

111. To further deepen the topic: Johnson, J., Ritchie, N., Kupriyanov, M. 2023. "Understanding the Humanitarian Consequences and Risks of Nuclear Weapons: New Findings from Recent Scholarship." *Federal Ministry for European and International Affairs, Austria*. https://www.bmeia.gv.at/fileadmin/user_upload/Zentrale/Aussenpolitik/Abruestung/Understanding_the_Humanitarian_Consequences_and_Risks_of_Nuclear_Weapons.pdf

112. For further information: Sukhenko, I., Pál. V. 2021. 'Nuclear Awareness'. In *Situating Sustainability: A Handbook of Contexts and Concepts*, edited by C. P. Krieg and R. Toivanen, 105–118. Helsinki: Helsinki University Press, 105–118.

113. *Buddhist Leaders Welcome 50th Ratification of Nuclear Ban Treaty* - Buddhistdoor Global. <https://www.buddhistdoor.net/news/buddhist-leaders-welcome-50th-ratification-of-nuclear-ban-treaty/>

Knowledge Production: The production of knowledge on the humanitarian impacts of nuclear weapons is a collaborative effort. States, research institutions, and nuclear agencies contribute scientific data and policy analyses.¹¹⁴ International bodies like the UN Office for Disarmament Affairs (UNODA), the IAEA, NGOs such as the International Campaign to Abolish Nuclear Weapons (ICAN), Pugwash Conferences, and Physicians for Social Responsibility (PSR) all provide extensive research, publish awareness-raising reports, and organise campaigns to raise awareness about the human costs of nuclear weapons. Academia and individual experts contribute to the knowledge base through research, publications, and educational programs.¹¹⁵

Knowledge Sharing and Dissemination: Effective knowledge sharing and dissemination is crucial for achieving impact. International fora like the NPT Review Conferences and the UN General Assembly,¹¹⁶ but also governments, NGOs, think tanks, educational institutions, the media, and online platforms play crucial roles in this process.¹¹⁷ They promote dialogue, disseminate research findings, integrate nuclear knowledge into education curricula, raise public awareness, and foster informed debate about nuclear policy.¹¹⁸

Knowledge Application and Transfer: The goal is to apply nuclear knowledge for humanitarian purposes and inform national policies on disarmament, non-proliferation, and risk reduction. International efforts benefit from knowledge-based approaches to enhance nuclear risk reduction and promote a culture of peace. Civil society advocacy campaigns leverage knowledge to build a compelling case for nuclear disarmament and mobilise public support for the humanitarian agenda. Training programs and capacity-building initiatives assist states in implementing safety and security protocols, further minimising the risks associated with nuclear technology.¹¹⁹

The existing knowledge ecosystem faces challenges such as limited access to credible information in some states,¹²⁰ misinformation campaigns, and the gap between knowledge and policy action.¹²¹ Engaging diverse stakeholders, including youth and those directly affected by nuclear threats, is crucial to reshaping the structures to enable an inclusive and practical approach to nuclear education. This should not be an effort of only directly affected states but a joint effort by all NPT member states, particularly those that base their national security on nuclear weapons.

POLICY RECOMMENDATIONS

- **Develop a Comprehensive Nuclear Education Compendium:** NPT member states should create a compendium on nuclear education, incorporating lessons learned and activities undertaken in past decades, to enhance knowledge sharing and development while particularly taking into account the blindspots of existing endeavours, particularly on the humanitarian impacts of nuclear weapons.
- **Highlight and Expand Successful Initiatives:** NPT member states should showcase successful nuclear education initiatives by member states, groups of states, and civil society and broaden the scope of education to include all aspects of nuclear weapons, particularly their humanitarian impacts.
- **Enhance NPT-Related Education Events:** NPT member states should organise and promote diverse and inclusive nuclear education-focused side events at NPT meetings and establish collaborative working groups among all NPT Member States to develop and implement holistic nuclear education strategies.
- **Promote Parliamentary Discussions on Nuclear Issues:** NPT member states should regularly include nuclear weapon topics in parliamentary discussions to educate decision-makers and explore funding for research on alternative, non-nuclear deterrent strategies.

114. Norris, R. S., & Kristensen, H. M. 2018. "Nuclear Notebook: Worldwide Deployments of Nuclear Weapons, 2017." *Bulletin of the Atomic Scientists*, 74(5), 289-297.

115. See e.g. Smaldone, J. 2017. "Nuclear Arms Control, Nonproliferation, and Counterterrorism: The Impact of Education and Public Opinion." *Comparative Strategy*, 36(5), 438-454.; Tannenwald, N. 2018. "How Strong Is the Nuclear Taboo Today?" *The Nonproliferation Review*, 25(1-2), 43-54.

116. United Nations Office for Disarmament Affairs. 2020. "Youth, Disarmament and Non-Proliferation."

117. Cahn, M. 2012. *A Journal for the Nuclear Age: Citizen Witnessing in the Post-Cold War World*. University of California Press; Coombs, T. 2014. "Leveraging Social Media for Public Diplomacy on Nuclear Security." *The Annals of the American Academy of Political and Social Science*, 653(1), 222-240.

118. "Report of the Scientific Advisory Group on the Status and Developments Regarding Nuclear Weapons, Nuclear Weapon Risks, the Humanitarian Consequences of Nuclear Weapons, Nuclear Disarmament and Related Issues" TPNW/MSP/2023/8. <https://front.un-arm.org/publications/tpnw-sag-report.pdf>.

119. Blix, H. 2019. *Disarming Nuclear Ambitions: One Step at a Time*. Taylor & Francis.

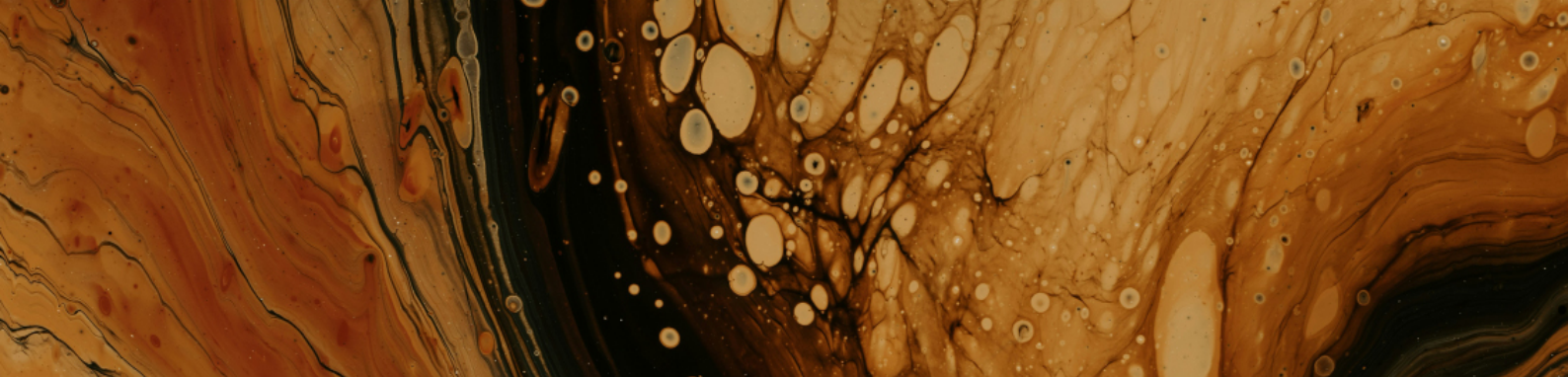
120. Christensen, C. M. 2019. "Knowledge Sharing and the NPT's Humanitarian Agenda: Challenges and Opportunities." In M. K. Bunn & K. M. Muttard (Eds.). *Rethinking Nuclear Weapons: A New Agenda for the 21st Century*. Routledge: New York. 247-260

121. See e.g. Fleurant, A. 2020. "Disinformation and the NPT's Humanitarian Agenda: Challenges and Opportunities." In P. T. Behera & V. A. S. Nadimpally (Eds.). *Nuclear Disarmament and Non-Proliferation in the 21st Century*. Springer, 53-68.

- **Integrate Nuclear Education at All Levels:** NPT member states should revisit educational guidelines to incorporate nuclear education across various academic levels, tailoring the depth and intensity of content to suit different age groups.
- **Support Nuclear Educators:** NPT member states should provide adequate funding and support to NGOs, grassroots initiatives, and other civil society actors involved in nuclear education, who often operate with limited resources.
- **Engage Youth in Nuclear Education:** NPT member states should invest in initiatives that stimulate the younger generation's engagement in nuclear education and knowledge, preparing them for future leadership and decision-making roles.
- **Incorporate Survivor Narratives and Ethical Considerations:** NPT member states should include first-hand accounts of nuclear weapons survivors and victims in educational activities and integrate ethical and moral considerations into nuclear education to provide a comprehensive understanding.
- **Utilise Diverse Educational Formats and Disciplines:** NPT member states and partner organisations should broaden the scope of nuclear education to encompass various disciplines and leverage diverse formats like social media, user-friendly digital platforms, and popular culture mediums to reach and engage a wider audience.
- **Harness Popular Culture for Awareness:** NPT member states should create dynamic and compelling outreach content to raise nuclear awareness, capitalising on the influential power of popular culture to educate and inform the public.

Conclusion

The NPT plays a pivotal role in curbing nuclear proliferation and promoting disarmament. To fully realise the goals of the NPT, there is an urgent need to enhance nuclear education, focusing mainly on the humanitarian impacts of nuclear weapons, as the global security environment is riddled with escalating nuclear rhetoric and implicit and explicit nuclear threats. By developing a comprehensive educational framework that includes diverse stakeholders – from governments and NGOs to academia and civil society – national and international communities can build broad, informed engagement on nuclear issues. This approach requires disseminating factual information and fostering critical thinking and understanding of nuclear technology's ethical, social, and environmental dimensions. Addressing misinformation, enhancing transparency, and linking education with policymaking are vital steps toward this goal. Such an enriched educational landscape will empower individuals and communities, enabling them to contribute more effectively to the global discourse on nuclear non-proliferation and disarmament and work collectively towards a safer world.



Advancing the Nuclear Safety and Security Culture Post-Fukushima: Strengthening the Broader Humanitarian Impacts Agenda

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Executive Summary

States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) can advance the nuclear safety and security standards within the NPT framework by examining the existing NPT states' nuclear safety standards, and their responsibilities within the International Atomic Energy Agency (IAEA) framework and providing policy options for advancing these standards. This policy paper discusses the challenges of nuclear accidents, unsafe nuclear trade, and their humanitarian impacts, alongside analysing the evolution of safety standards, particularly post-Fukushima. While discussing the impact of these standards on human security, the paper has comprehensive policy options on how to strengthen the broader Humanitarian Impacts of Nuclear Weapons (HINW) agenda through advancing nuclear safety and security standards within the IAEA framework. The paper proposes multiple policy options, including enhanced safety and security standards, legal clarifications in policies, capacity building and public awareness campaigns for fortifying nuclear governance globally and ensuring the safe development of nuclear energy. It also calls for urgent steps to be taken in order to advance global nuclear safety standards, addressing challenges such as technical errors in policies, emerging technologies, and nuclear accidents.

Introduction

Nuclear safety entails maintaining appropriate operational conditions, preventing accidents, and minimising their repercussions to safeguard workers, the populace, and the environment from excessive radiation hazards. Since the reactor meltdown at the Fukushima-Daiichi Nuclear power plant in 2011, where damage to backup generators from a tsunami led to runaway heating of the core, focus on nuclear safety has increased as calls for greater attention and a review of safety standards were raised¹²² by national authorities, civil society, and international organisations. This paper reviews the recent developments related to nuclear safety and the broader humanitarian agenda, and aims to explore policy options to develop and strengthen global safety standards to ensure a safe development of nuclear technologies and materials. The paper begins by exploring (I) Pre and Post-Fukushima nuclear safety standards and how they have evolved within the NPT, and subsequently reflects on (II) Japan-US cooperation after the disaster and the

122. Acton, J. M., & Hibbs, M. "Why Fukushima Was Preventable." Carnegie Endowment for International Peace. 6 March, 2012. <https://carnegieendowment.org/2012/03/06/why-fukushima-was-preventable-pub-47361> (accessed on 12 March, 2024)

cue for other countries to collaborate for crises management, and (III) The Humanitarian Impacts of Nuclear Accidents, Unsafe Trade, Programs, and Applications. In conclusion, it offers policy recommendations to respond to this analysis.

Analysis

Pre and Post-Fukushima Nuclear Safety Standards and How They Have Evolved within the NPT

On March 11, 2011, a 9.0 magnitude earthquake, followed by a 45-foot tsunami, led to loss of power, flooding of critical equipment, and reactor core damage at Japan's Fukushima Daiichi facility. The accident raised questions across the globe about nuclear safety given the radiation spilled into the environment and the evacuation of over 300,000 residents¹²³. These questions included reflections on whether nuclear facilities are intrinsically vulnerable, or simply vulnerable to rare external events such as earthquakes, and whether it is possible to foresee and mitigate such risks that can lead to extensive humanitarian impacts.

In response to the accident, the IAEA developed the Action Plan on Nuclear Safety. With support from IAEA Member States, the plan outlined actionable measures to strengthen safety in 12 key areas. These included a safety assessment of nuclear power plants; IAEA peer reviews; capacity building; and various national and international initiatives.¹²⁴

Most significantly the accident raised questions regarding emergency preparedness, response, and the need for review and revision of nuclear emergency safeguards. The accident was followed by nine international experts' meetings hosted by the IAEA to analyse technical aspects of the Fukushima-Daiichi accident. After these meetings, the IAEA published "The Fukushima Daiichi Accident Report", signed by the IAEA Director General and published along with five corresponding technical volumes.¹²⁵ European Union (EU) nuclear "stress tests";¹²⁶ and the adoption of the Vienna Declaration on Nuclear Safety in 2015 in accordance with the objectives of the Convention on Nuclear Safety.¹²⁷

In November 2021, the conference "A Decade of Progress after The Fukushima Daiichi NPP Accident – Building on Lessons Learned to Further Strengthen Nuclear Safety" was hosted by the IAEA. As the conference was intended to assess lessons learned and actions implemented since the disaster, topics for discussion included post-accident recovery and emergency preparedness and response (i.e. post-disaster responses), but also addressed prevention, including the safe generation of nuclear power, international cooperation, communication and trust-building, and international legal instruments for safety. Following the incident, safety culture issues came to light, such as a lack of cooperation between offsite centres, Tokyo Electric Power Company (TEPCO) and the Nuclear and Industrial Safety Agency (NISA). Their underperformance led to a failure in timely detection of tsunami threats, with the Japanese government forming committees to investigate these issues¹²⁸. The Fukushima accident was indeed preventable, highlighting failures on the part of TEPCO and NISA. These entities neglected international best practices and standards, which could have anticipated the risk of a massive tsunami hitting the plant. Both TEPCO and NISA overlooked evidence of large tsunamis occurring approximately once every thousand years in the region surrounding the Fukushima plant¹²⁹. Additionally, their computer modelling of the tsunami threat was inadequate,¹³⁰ with preliminary simulations in 2008 suggesting a serious underestimation of the tsunami risk, which went unaddressed until shortly before the 2011 disaster. NISA also failed to review TEPCO's

123. Fukushima Daiichi Accident, <https://world-nuclear.org/information-library/safety-and-security/safety-of-plants/fukushima-daiichi-accident.aspx>

124. IAEA. "IAEA Action Plan on Nuclear Safety". <https://www.iaea.org/topics/nuclear-safety-action-plan>.

125. IAEA. "The Fukushima Daiichi Accident." IAEA Non-serial Publications, 2015. <https://www.iaea.org/publications/10962/the-fukushima-daiichi-accident>]

126. Jamet, P. "European Union Response to Fukushima: European Stress Tests and Peer Review." IAEA. 38th MPA-Seminar. October 2012. https://inis.iaea.org/collection/NCLCollectionStore/_Public/46/001/46001477.pdf.

127. Vienna Declaration on Nuclear Safety." Diplomatic Conference on the Convention on Nuclear Safety. Vienna, 9 February 2015. https://www.iaea.org/sites/default/files/cns_viennadeclaration090215.pdf.

128. IAEA. "IAEA Report on Preparedness and Response for a Nuclear or Radiological Emergency in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant." IAEA Action Plan on Nuclear Safety Series, Vienna. 2013. <https://www.iaea.org/publications/10634/iaea-report-on-preparedness-and-response-for-a-nuclear-or-radiological-emergency-in-the-light-of-the-accident-at-the-fukushima-daiichi-nuclear-power-plant>.

129. Action, J. Hibbs, M. and Perkovich, G. "Was the Fukushima Accident Preventable?" Carnegie Endowment. 6 March 2012. <https://carnegieendowment.org/2012/03/06/was-fukushima-accident-preventable-pub-47411>.

130. Action, Hibbs & Perkovich. "Was the Fukushima Accident Preventable?"

simulations and encourage the development of appropriate modelling tools. In contrast, European countries significantly enhanced their nuclear plants' defences against extreme events following a flooding incident in France in 1999, highlighting a missed opportunity for TEPCO to learn from international experiences.

Steps to prevent a major accident,¹³¹ such as better protecting emergency power supplies and the seawater pumps could have been implemented. However, a lack of independence for NISA, a narrow focus on seismic safety within the Japanese nuclear industry, and bureaucratic barriers, hindered the adoption of these measures. Additionally, there were concerns that some professionals involved in these processes held the belief that a severe accident was impossible, leading to complacency. The accident had social and humanitarian impacts as well, such as concerns around contaminated food and water, the impacts of radiation, and outmoded government rules regarding radiation exposure. This also demonstrates the importance of transparency in policy solutions to address these concerns.

Japan-US Cooperation After the Disaster and the Cue for Other Countries to Collaborate for Crises Management:

The promptness of the preliminary American crisis management reaction during the Fukushima accident was notable. For example, a teleconferencing channel and a web-based communication system were established with the US embassy in Japan, particularly to help with crisis management after the nuclear accident.¹³² The US also allowed emergency deployment of its crisis management staff, specifically in the Asia Pacific region to travel to Japan to provide immediate assistance. Moreover, in terms of improving technology, the European Pressurised Reactor (EPR) and the Advanced Boiling Water Reactor (ABWR)¹³³ represent significant improvements in nuclear reactor technology, notably in response to the Fukushima accident.¹³⁴ Notable improvements include numerous redundant safety mechanisms in EPRs,¹³⁵ such as a core catcher to confine molten fuel, a double containment structure, and greater seismic protection. ABWRs have internal pumps and control rod drives, as well as passive safety features such as a passive containment cooling system, improved containment design, updated control systems, and increased seismic safety.¹³⁶ Transitioning to modern digital control systems improves monitoring, control, diagnostics, and cybersecurity. In summary, both EPRs and ABWRs overcome prior constraints in nuclear reactor technology by combining improved safety features, efficiency gains, and sturdy designs, notably in terms of safety and emergency readiness.¹³⁷ Nonetheless, their design, building, and licensing are extremely costly. This is in part due to the incorporation of advanced safety mechanisms, many of which address potential downstream repercussions, such as the need for a core catcher in the case of a meltdown. However, if the Fukushima power plant had ensured the backup generators could function in the event of an earthquake and tsunami of this scale (an upstream or preventative measure), a meltdown may have been avoided.

Humanitarian Impacts of Nuclear Accidents, Unsafe Trade, Programs, and Applications

The International Commission on Radiological Protection (ICRP) advises on dose limits to prevent individuals from being exposed to excessive levels of ionising radiation. These dose limits are a key element of radiation safety, and violating them contravenes radiation regulations in the majority of countries.¹³⁸ Following the Fukushima disaster, the World Health Organization (WHO) conducted an assessment which revealed that the average lifetime effective doses for adults in the Fukushima prefecture were estimated to be around 10 mSv or less. For 1 year old infants, the doses were about twice as high. Workers at the site

131. Action, Hibbs & Perkovich. "Was the Fukushima Accident Preventable?"

132. "The Fukushima Nuclear Accident and Crisis Management: Lessons for Japan-US Alliance Cooperation,"Sasakawa Peace Foundation, September 2012. <https://www.spf.org/jpus-insights/global-data/2022033015490055.pdf>.

133. "Issued Design Certification - Advanced Boiling-Water Reactor (ABWR)" NRC Web, 1997. <https://www.nrc.gov/reactors/new-reactors/large-lwr/design-cert/abwr.html>.

134. AEA. "Assessing and Improving the Safety of Pressurized Water Reactors in Europe, with IAEA Support." April 24, 2020) <https://www.iaea.org/newscenter/news/assessing-and-improving-the-safety-of-pressurized-water-reactors-in-europe-with-iaea-support>.

135. "First EPR Enters Commercial Operation : New Nuclear." World Nuclear News. <https://world-nuclear-news.org/Articles/First-EPR-enters-commercial-operation>.

136. Mason, R., Goodley, S. "Hinkley Point C Nuclear Power Station Gets Government Green Light." The Guardian. 15, September 2016, <https://www.theguardian.com/uk-news/2016/sep/15/hinkley-point-c-nuclear-power-station-gets-go-ahead>.

137. "Boiling Water Reactors and Nuclear Safety," Nuclear Energy Agency (NEA). https://www.oecd-nea.org/jcms/pl_24145/boiling-water-reactors-and-nuclear-safety.

138. International Commission on Radiological Protection (ICRP) Guidance for Occupational Exposure, "ICRP Guidance for Occupational Exposure - Radiation Emergency Medical Management." https://remm.hhs.gov/ICRP_guidelines.htm.

also faced significant exposure, with about 35% of the workforce receiving total doses of more than 10 mSv over 19 months post-accident¹³⁹. The most exposed workers received thyroid doses in the range of 2 to 12 Gy, predominantly from inhaling radioactive iodine.¹⁴⁰ These are significant numbers, considering the lifetime whole-body dosage limit for occupational exposure to radiation in an adult is between 20mSv¹⁴¹ to 50mSv¹⁴² (variations due mostly to geographical and geological differences between countries).

The responses to the Fukushima disaster, such as evacuation and relocation, led to a range of social, economic, and public health consequences. This included a sharp increase in mortality among elderly people put in temporary housing, increased risk of non-communicable diseases like diabetes, and mental health problems. Psychological distress was also observed, with a higher occurrence of PTSD among evacuees and emotional and conduct disorders among evacuated children¹⁴³. From a broader view, the health risks directly related to radiation exposure were considered low in Japan and extremely low in neighbouring countries and the rest of the world. However, this assessment does not fully capture the scope of a nuclear accident, which includes soil and water contamination, displacement of lives, and a loss of confidence in government oversight.¹⁴⁴ Whilst healthcare facilities received minimal direct radiation exposure, major hospital malfunctions as a result of poorly-planned evacuations were the leading cause of health impacts to patients.¹⁴⁵ In addition to this, a study of ~1200 residents spread across seven elderly care facilities within a 50km range of the nuclear plant showed that the mortality rate of those evacuated was almost double that of those who sheltered in place after the incident.¹⁴⁶

Furthermore, due to “restrictions on playing outside” and the stress of prolonged stays in shelters, the BMI of children aged 5 to 7 years old increased nearly 20% in the three years following the disaster due to less physical activity and depression¹⁴⁷. Studies conducted after the Chernobyl incident showed that Swedish secondary school children born in areas of higher radiation exposure continually received lower scores than their peers on maths and Swedish national standardised tests.¹⁴⁸ Ten years after the Fukushima nuclear accident, young Japanese fir and red pine trees are showing irregular branching patterns that are “attributable primarily to external ionising radiation”. The number of the trees affected increases with the dose rates of the areas surveyed as morphological changes in these trees were caused by radionuclide contamination.¹⁴⁹ These cases underscore the complex and far-reaching implications of nuclear accidents on global health and healthcare systems, going beyond immediate radiation exposure to include long-term physical and mental health effects, socio-economic disruption, and the overwhelming of healthcare resources.¹⁵⁰

POLICY RECOMMENDATIONS

Regulating emerging nuclear technology: Effectiveness of international legal frameworks:

Regulatory frameworks must adapt to safely deploy advanced nuclear reactors, addressing emerging risks like digital instrumentation, while international legal frameworks evolve. Efforts to adapt safety regulations,

139. Kumagai, A., Tanigawa, K. “Current Status of the Fukushima Health Management Survey.” *Radiation Protection Dosimetry* 182, no. 1 (2018): 31–39.
140. Kumagai, A., Tanigawa, K. “Current Status of the Fukushima Health Management Survey.” *Radiation Protection Dosimetry* 182, no. 1 (2018): 31–39.
141. “Limit values in radiation protection.” Federal Office for Radiation Protection. https://www.bfs.de/EN/topics/ion/radiation-protection/limit-values/limit-values_node.html.
142. “Radiation, how much is considered safe for humans?” MIT News, Massachusetts Institute of Technology. <https://news.mit.edu/1994/safe-0105>.
143. “Global Health Impacts of the Fukushima Nuclear Disaster Calculated.” Stanford University. <https://phys.org/news/2012-07-global-health-impacts-fukushima-nuclear.html>.
144. “Global Health Impacts of the Fukushima Nuclear Disaster Calculated.” Stanford University. <https://phys.org/news/2012-07-global-health-impacts-fukushima-nuclear.html>.
145. Kumagai and Tanigawa, “Current Status of the Fukushima Health Management Survey.”
146. Masaharu M. et al., “Fukushima, Mental Health and Suicide.” *Journal of Epidemiology and Community Health* 70, no. 9 (November 2016): 843–44. <https://doi.org/10.1136/jech-2015-207086>.
147. Yamamura, E., “Impact of the Fukushima Nuclear Accident on Obesity of Children in Japan (2008–2014).” *Economics & Human Biology* 21 (14, January 2016): 110–21. <https://doi.org/10.1016/j.ehb.2016.01.001>.
148. Yamamura, E., “Impact of the Fukushima Nuclear Accident on Obesity of Children in Japan (2008–2014).” *Economics & Human Biology* 21 (14, January 2016): 110–21. <https://doi.org/10.1016/j.ehb.2016.01.001>.
149. Ludovici, G., Chierici, A., Oliveira, S., d’Errico, F., Iannotti, A., Malizia, A. “Effects of Ionizing Radiation on Flora Ten Years after the Fukushima Dai-ichi Disaster.” *Plants* 11, no. 2. 15, January 2022: 222–32. <https://doi.org/10.3390/plants11020222>.
150. Nomura, S. et al., “Post-Nuclear Disaster Evacuation and Survival amongst Elderly People in Fukushima: A Comparative Analysis between Evacuees and Non-Evacuees,” *Preventive Medicine* 82 (January 2016): 77–82, <https://doi.org/10.1016/j.yjmed.2015.11.014>.

and address challenges in digitisation and data security are underway. This paper therefore recommends the following:

- Collaborations between all the stakeholders, such as the IAEA, other organisations, states, civil societies and governments for capacity building and cybersecurity threat mitigation.
- Promotion of nuclear security through science diplomacy and dialogue.
- Standardising procedures for non-compliance with the provisions of the Non-Proliferation Treaty with states that do not respect the NPT and do not follow the IAEA regulations.
- Awareness campaigns on the long-term impacts of nuclear accidents.
- Leveraging nuclear justice initiatives to educate nuclear practitioners.
- Consider implementing public liability for damage resulting from nuclear activities.
- Education on nuclear science and technology is proposed to build workforce capacity, enhance public trust, and improve disaster preparedness.
- Bilateral measures between states party to the NPT for crisis response and improvements in decision-making processes are essential for effective nuclear collaborations.
- Develop international agreements on the protection of civil nuclear control, and communication systems against cyber threats.
- NPT states parties should make efforts at capacity building and dialogue with non-state parties, in order to support ongoing efforts to ensure compliance with international nuclear norms, safety and security standards through negotiations, incentives, sanctions, increased funding, technical support, and collaboration with other international bodies and states.

Promoting Universal Adherence to CPPNM and A/CPPNM

Universal adherence to the Convention on the Physical Protection of Nuclear Material (CPPNM) and its Amendment (A/CPPNM) is crucial for enhancing nuclear security culture. These agreements not only fortify the international legal framework for physical protection of nuclear material but also cultivate a culture of safety and security in nuclear operations. To advance this culture within the IAEA framework, this paper recommends:

- Diplomatic outreach to encourage ratification or accession to the agreements.
- Capacity-building to support implementation of agreement terms.
- Raising awareness among policymakers and the public of the need for adherence.
- Development of incentives for adherence.
- Strengthening monitoring and compliance mechanisms, such as expanding the role of the IAEA.

Diversifying Participation in Nuclear Security Dialogues to Strengthen Nuclear Security Culture

To strengthen nuclear security culture and enhance participation within the NPT framework, it is imperative to engage early career professionals and encourage greater representation in the IAEA's Nuclear Security Series, for example.¹⁵¹ By supporting meaningful inclusive participation – including by establishing a body of researchers and experts with diverse lived experiences – the nuclear security community can build confidence in its ability to comprehensively explore risks to human health, and its responsibilities in developing pre-emptive or remedial solutions. In comparison to TEPCO and NISA, the European nuclear industry provided a quicker response in the Fukushima accident. This suggests that the European nuclear industry had better preparedness and measures in place to mitigate risks from external events compared to TEPCO and NISA in Japan. One reason for this difference of response and management was the lack of a forward-looking approach leading to conservative assumptions and a narrow approach towards the safety and security matters. Diversifying participation in the IAEA's Nuclear Safety and Security Series can bridge the gap between different approaches towards safety and security matters which can strengthen the nuclear safety and security culture through providing diverse realistic solutions and approaches to cover all possible areas of nuclear safety and security issues. The following recommendations outline strategies to achieve these objectives and underscore their importance in advancing nuclear security culture:

- Establishing outreach and mentorship programs for early career professionals.
- Implementing gender-responsive policies to increase women's representation.
- Enhancing training and capacity building initiatives tailored to their needs.
- Creating a supportive environment and encouraging collaboration.
- Monitoring progress and fostering partnerships for sustained impact.

151. IAEA, "Nuclear Security Series," <https://www.iaea.org/resources/nuclear-security-series>.

Civil Independent Nuclear Regulatory Authority

All NPT signatories should establish Civil Independent Nuclear Regulatory Authorities (CINRAs) in their respective jurisdictions to improve nuclear safety standards. These regulatory bodies will work within the frameworks of the IAEA and the NPT, ensuring strong and impartial oversight of nuclear activities.

- **Legislative Mandate:** NPT signatories should enact legislation to establish CINRAs as independent entities with authority over nuclear safety and security.
- **Institutional Independence:** Ensure CINRAs are structurally and financially independent, enabling decisions based on technical expertise.
- **Expertise Building:** NPT signatories should provide training and resources to CINRA personnel in alignment with IAEA standards.
- **Collaboration with IAEA:** Foster close collaboration between CINRAs and the IAEA for information sharing and technical assistance.
- **Public Engagement:** Promote public awareness and transparency in nuclear safety through communication channels and consultations.
- **International Cooperation:** Encourage sharing of experiences and best practices among NPT signatories to enhance nuclear safety standards.

Implementing CINRAs enhances nuclear safety within the IAEA and NPT framework, advancing the humanitarian impacts agenda and ensuring safe nuclear technology use.

Conclusion

An advanced nuclear safety and security culture can be used to ensure that the peaceful uses of nuclear energy (a pillar of the NPT), are possible without their potential risks and harms to people and the environment. Strengthening the non-proliferation regime, the cornerstone of which is the NPT, therefore also strengthens both the NPT, and the HINW agenda. It is also necessary to bridge gaps between practitioners, researchers, and early career professionals, and to strengthen gender diversity within the field. This contributes to a diversity in thinking, expertise, and approaches, which in turn can build a much advanced nuclear safety and security culture around the world. It also ensures a diverse and inclusive approach to addressing some nuclear challenges, reinforcing a commitment to addressing humanitarian concerns. Moreover, by increasing transparency, and encouraging universal adherence to conventions like the CPPNM, an enhanced culture of safety and security in nuclear operations can be fostered, lowering risks to human health and the environment. Through these collaborative efforts, the nuclear policy community can uphold the NPT principle of safe and peaceful uses of nuclear energy whilst also protecting against nuclear risks, to better address the humanitarian impacts of nuclear weapons. Reducing risks to human health and the environment, particularly in the context of nuclear accidents, ultimately contributes to a safer and more secure future.



Forging a New Frontier: Strengthening the Humanitarian Impacts Agenda for Inclusive and Effective Non-Proliferation under the NPT

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Executive Summary

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT), pivotal in global nuclear disarmament and non-proliferation efforts, faces challenges due to pronounced limitations in diversity, equity, and inclusion (DEI) within its decision-making processes. A narrow span of representation which predominantly excludes women, wider marginalised communities, and experts from the Global South, critically undermines the treaty's capacity to address the spectrum of nuclear challenges. This policy brief proposes an ambitious DEI-centric strategy to revitalise the NPT's framework, advocating for integrating diverse perspectives essential for formulating effective, resilient policies by incorporating three fundamental objectives, centred around on strengthening the humanitarian impacts agenda. This initiative aims to transform the NPT into a more inclusive, equitable, and productive instrument in the global nuclear governance landscape, by implementing targeted funding mechanisms, reevaluating procedural frameworks for greater transparency, and introducing mandatory diversity quotas, thereby also better addressing humanitarian impacts.

To catalyse meaningful change, these recommendations emphasise the establishment of formalised platforms for youth participation, initiatives to bridge gender disparities, and the enhancement of scientific engagement underpinned by robust monitoring and evaluation mechanisms. Such a comprehensive approach addresses the immediate need for wider representation. It aligns with contemporary human rights principles, ensuring a rich tapestry informs the NPT's deliberations and outcomes of experiences and insights. This paper offers options to facilitate the NPT to move past its current limitations, embodying a commitment to inclusivity crucial for navigating the complexities of nuclear non-proliferation and disarmament. By adopting these strategic actions, the NPT community can forge a more secure, just, and nuclear weapon-free world, reflecting the diverse global community it serves.

Introduction

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) stands as a cornerstone in the global efforts to prevent nuclear proliferation, promote nuclear disarmament, and facilitate the peaceful use of nuclear energy. Yet, the efficacy of the NPT is compromised by gaps in diversity, equity, and inclusion (DEI) within its

decision-making processes.¹⁵² Current discussions under the NPT suffer from a pronounced lack of diversity, predominating a narrow range of perspectives. This limitation not only obstructs a comprehensive understanding of the humanitarian impacts of nuclear activities, but also stifles meaningful action to mitigate these impacts. In the wider disarmament context, for example, the representation of women in the First Committee, for instance, is a mere 32.4%, illustrating the gender imbalance prevalent in these discussions.¹⁵³ This underrepresentation extends beyond gender, affecting marginalised communities, individuals with disabilities, youth, rural residents, and the global hibakusha, among others. Such exclusions omit essential perspectives from NPT discourse and hinder the formulation of policies that adequately address the diverse implications of nuclear activities - particularly the humanitarian impacts of nuclear weapons.

To meet these challenges, this policy brief sets forth three main objectives centred on enhancing DEI within the nuclear sector. It aims to diminish disparities and cultivate an inclusive and equitable environment that reflects the myriad of voices and experiences pertinent to nuclear issues. By integrating DEI principles into the NPT framework, it aims not just to bridge identified gaps but to strengthen the Humanitarian Impacts of Nuclear Weapons (HINW) agenda, and efforts towards nuclear disarmament within the NPT. The proposed recommendations are crafted to advance these objectives, ensuring that diverse perspectives are heard, and instrumental in shaping a more secure and just nuclear future.

Integrating Diverse Backgrounds into the NPT

‘Accessibility at NPT Conference

Participation in NPT conferences, specifically the Review Conferences (RevCons) and Preparatory Committees (PrepComs), has historically been limited in its diversity. This bottleneck has often resulted in an echo chamber effect, where a narrow set of perspectives dominates, potentially compromising the treaty's capacity to address not only the nuanced challenges of nuclear disarmament, non-proliferation, and the peaceful use of nuclear energy effectively but also the HINW agenda.¹⁵⁴

During the 2023 NPT PrepCom, despite some representation from civil society, the predominant participation remained from state actors, thereby underscoring a systemic issue: a lack of meaningful and diverse participation to ensure DEI.¹⁵⁵ For the NPT to function as expected, it must pivot towards a framework that genuinely values and integrates a broad spectrum of insights and expertise.¹⁵⁶ The NPT community must commit to a more inclusive approach to achieve meaningful dialogue among stakeholders, acknowledging the indispensable value of varied expertise in crafting effective and enduring solutions. NPT processes involve structural barriers that impede inclusivity and equitable participation. A notable challenge is the constrained time frame allocated for delegations to comprehensively address agenda items.¹⁵⁷ This system disproportionately affects smaller delegations, such as New Zealand's, limiting their ability to engage across the spectrum of NPT committees in contrast to larger delegations from countries like the UK or Russian Federation. Such structural limitations not only stifle diverse voices but also restrict how the NPT can respond to the dynamic nature of nuclear threats.

Furthermore, despite not being specific to, or arising from the NPT system, the financial constraints experienced by some States Parties emerge as a critical bottleneck, particularly impacting the participation

152. DEI framework that allows organisations to assess existing structural biases contributing to the continued alienation of underrepresented and marginalised individuals and examine ways of redressing these imbalances. Diversity is about representation. Equity is about fairness in treating individuals. Inclusion is about embracing diverse individuals and making them heard and valued. For more information, see Sneha Nair's "Converging Goals: Examining the Intersection Between Diversity, Equity, and Inclusion and Nuclear Security Implementation," Nuclear Threat Initiative Global Dialogue on Nuclear Security Priorities, April 14-15, 2023, https://www.nti.org/wp-content/uploads/2023/07/GD-Paper_Converging-Goals-Examining-the-Intersection-Between-Diversity-Equity-and-Inclusion-and-Nuclear-Security-Implementation.pdf

153. Dalaqa, Renata Hessmann, Kjølve Egeland, and Torbjørn Graff Hugo. 2019. "Still Behind the Curve: Gender Balance in Arms Control, Non-Proliferation and Disarmament Diplomacy." UNIDIR. <https://unidir.org/files/publication/pdfs/still-behind-the-curve-en-770.pdf>

154. MacKerron, G., and Wynne, B. 2013. *Rationality and Ritual: Participation and Exclusion in Nuclear Decision-Making*. Routledge.

155. Preparatory Committee for the 2026 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. 2023. "Enhancing transparency for nuclear disarmament, non-proliferation and strengthening the review process for the Treaty on the Non-Proliferation of Nuclear Weapons." [https://docs-library.unoda.org/Treaty_on_the_Non-Proliferation_of_Nuclear_Weapons_-_Preparatory_Committee_for_the_Eleventh_Review_Conference/First_session_\(2023\)/NPT_CONF.2026_PC.L.06_-_06_FINAL.pdf](https://docs-library.unoda.org/Treaty_on_the_Non-Proliferation_of_Nuclear_Weapons_-_Preparatory_Committee_for_the_Eleventh_Review_Conference/First_session_(2023)/NPT_CONF.2026_PC.L.06_-_06_FINAL.pdf)

156. Preparatory Committee for the 2026 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. 2023. "Enhancing transparency for nuclear disarmament, non-proliferation and strengthening the review process for the Treaty on the Non-Proliferation of Nuclear Weapons."

157. Hood, A. 2023. "Roadblocks to Disarmament in the Nuclear Non-Proliferation Treaty System." *Journal of Conflict and Security Law* 28, no. 3: 593–614. <https://doi.org/10.1093/jcsl/krad011>.

of non-nuclear weapon states and developing countries. The 10th RevCon highlighted this disparity, with a significant absence of these states, reflecting an imbalanced power structure in decision-making processes.¹⁵⁸ This financial barrier extends beyond attendance, curtailing the capacity to contribute effectively to the NPT's goals in non-proliferation and disarmament, areas that demand as much focus as the peaceful uses of nuclear energy.¹⁵⁹

Lack of Representation in NPT Processes

The NPT is pivotal in promoting international nuclear disarmament, preventing the spread of nuclear weapons, and facilitating peaceful uses of nuclear energy. Yet, notable gender and regional representation disparities compromise it. A lack of women, comprising only a third of participants in state delegations and CSOs, and underrepresented experts from the Global South limit variety in perspectives¹⁶⁰. This imbalance reflects demographic challenges and severely restricts the NPT's ability to develop comprehensive solutions to the complex challenges of nuclear governance. Addressing these disparities is essential to enhancing the treaty's capacity for resilient and inclusive policy formulation to strengthen the humanitarian impacts agenda.¹⁶¹ Yet, it is important to recognise that achieving substantive policy changes requires much more than just demographic representation.

The engagement and incorporation of both youth and the scientific community within the NPT is an area ripe for improvement.¹⁶² Currently, in relation to youth engagement, emphasis on educational outreach rather than meaningful involvement in policymaking misses the potential that the youth community offers in sharing new insights and innovative approaches to nuclear challenges.¹⁶³ The inclusion of these voices is crucial for the treaty's evolution and its ability to respond to future nuclear risks. Moreover, in regards to the scientific community, the integration of such expertise is necessary to ensure policies are both effective and reflective of advancements in nuclear technology and security.^{164 165}

Furthermore, the efforts to enhance inclusivity must also focus on creating an accessible and welcoming environment for all participants, particularly Persons with Disabilities (PWD). Increased accessibility for affected communities and hibakusha with possible disabilities would enable them to attend, deliver statements, and host side events, providing invaluable expertise and insight, thereby broadening considerations in discussions and decision-making processes. This involves more than adopting inclusive language; it requires the establishment of facilities and communication methods that are PWD-friendly.¹⁶⁶ Such initiatives are not merely ethical imperatives but essential for enriching the NPT's discussions with various experiences and insights. This approach reinforces the HINW agenda, ensuring that the broadest possible spectrum informs the treaty's deliberations and outcomes of stakeholder perspectives.¹⁶⁷

To strengthen the HINW in NPT processes, particularly RevCons and PrepComs, it is crucial to address and enhance inclusivity and accessibility, as mandated by Article X of the Treaty.¹⁶⁸ This commitment to DEI, is not just about adhering to ethical standards but is fundamentally linked to the effectiveness of policymaking

158. The countries recorded were based from the Non-Aligned Movement composed of 4 Asian states, 6 Pacific states, 8 Latin America states and 22 African states in which 20 of them are considered least developing states.

159. LaGraffe, D. 2022. "Nuclear security science." In the Handbook of Security Science, 795-827. Cham: Springer International Publishing.

160. Hamidi, S. 2020. "Law as discursive resource: the politics of the nuclear/non-nuclear distinction in the Non-Proliferation Treaty." *European Journal of International Relations* 26, no. 2: 545-568. <https://doi.org/10.1177/1354066119875999>.

161. Hamidi, S. 2020. "Law as discursive resource: the politics of the nuclear/non-nuclear distinction in the Non-Proliferation Treaty." *European Journal of International Relations* 26, no. 2: 545-568. <https://doi.org/10.1177/1354066119875999>.

162. Miyazaki, H., and Riles, A. 2022. "Theorizing Intergenerational Justice in International Law: The Case of the Treaty on the Prohibition of Nuclear Weapons." *UC Irvine J. Int'l Transnat'l & Comp. L.* 7: 122.

163. Programmes range from those hosted under UNODA including the Leaders for Tomorrow, the Leaders to the Future, the Youth Champions For Disarmament, the Youth Forum on Disarmament and Non-Proliferation to others such as youth-led networks like ICAN, Youth Fusion, and more.

164. 2020 Review Conference of the Parties to the NPT Strengthening the Review Process of the Treaty on the Non-Proliferation of Nuclear Weapons for the Tenth Review Conference of the Parties to the Treaty. "Strengthening the review process of the Treaty on the Non-Proliferation of Nuclear Weapons for the tenth Review Conference of the Parties to the Treaty." 2022.

165. Preparatory Committee for the 2026 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. "Enhancing transparency for nuclear disarmament, non-proliferation and strengthening the review process for the Treaty on the Non-Proliferation of Nuclear Weapons." 2023.

166. Hood, A. 2023. "Roadblocks to Disarmament in the Nuclear Non-Proliferation Treaty System." *Journal of Conflict and Security Law* 28, no. 3: 593-614. <https://doi.org/10.1093/jcsl/krad011>.

167. Abbasi, K., et al. 2023. "Reducing the Risks of Nuclear War: The Role of Health Professionals." *Public Health Ethics*. <https://doi.org/10.1093/phe/phad020>.

168. The efforts to strengthen the NPT have evolved over the decades. Submission of working papers have notably outlined more transparency and inclusionary recommendations to democratise such processes. For reference: <https://reachingcriticalwill.org/images/documents/Disarmament-fora/npt/prepcom23/documents/WP18.pdf>; <https://reachingcriticalwill.org/images/documents/Disarmament-fora/npt/revcon2022/documents/WP53.pdf>

within the NPT. By ensuring physical and communicative accessibility, there is acknowledgement of the lived experiences and unique perspectives which are often overlooked yet critical in the discourse on HINW. This holistic approach to inclusivity enriches dialogue, ensuring a broader range of issues and solutions are considered, thereby making the policymaking process more robust, comprehensive, and reflective of the diverse global community it serves.¹⁶⁹

Addressing Historical Inequalities in Nuclear Policy and Resource Allocation

Historically, nuclear policymaking has often favoured state-centric viewpoints, sidelining profound individual and community impacts of nuclear issues, particularly for those enduring the aftermath of nuclear legacies. The devastating bombings in Japan during World War II and the nuclear tests in Bikini Atoll from 1946 to 1958 serve as stark reminders of the need for a shift towards prioritising the lived experiences of affected individuals.^{170 171} This redirection is not only a matter of justice but aligns with human rights principles that advocate for the equal rights of everyone impacted by nuclear actions.¹⁷² The human rights impacts and concerns in Pacific communities underscore the urgency of reevaluating nuclear decision-making processes to ensure equitable resource distribution.¹⁷³

The call for inclusivity in nuclear governance is supported by international legal frameworks such as the Aarhus Convention and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)¹⁷⁴ ¹⁷⁵ These champion the inclusion of diverse perspectives, including those from local communities, NGOs, and nuclear security experts, into nuclear decision-making. Such a holistic approach would bolster nuclear security measures and foster a more equitable consideration of the diverse impacts of nuclear activities.

Drawing inspiration from the concept of environmental reparations and guided by the Sustainable Development Goals (SDGs), specifically Goal 16 on Peace, Justice, and Strong Institutions, it becomes imperative to reassess funding allocations within the nuclear field.¹⁷⁶ A reassessment would aim to rectify historical environmental harms and ensure that decision-making and resource allocation processes are inclusive, equitable, and capable of addressing the complex challenges posed by nuclear activities by enabling those impacted by nuclear weapons to participate and contribute in the discussions. By adopting this approach, the nuclear policymaking community can move towards developing a nuclear governance framework that adequately addresses past and potential humanitarian impacts, and is more effective in achieving the long-term goals of nuclear non-proliferation and disarmament.¹⁷⁷

Equity and Representation In The NPT - Amplifying Marginalised Voices

The 1945 atomic bombings in Hiroshima and Nagasaki inflicted severe humanitarian and environmental damage, and propelled the Japanese hibakusha into a long journey for justice. This historical event underscores a broader pattern where, since 1945, over 2,056 nuclear tests have disproportionately impacted traditionally marginalised communities, particularly in the Global South.¹⁷⁸ The voices from these regions have amplified calls for nuclear justice, advocating for therapeutic, corrective, and distributive actions. The Treaty on the Prohibition of Nuclear Weapons (TPNW), which entered into force in 2021, represents a significant step in addressing humanitarian impacts, yet there is much to be done. This necessitates enhanced inclusivity within nuclear decision-making spaces, including the NPT, to ensure the representation

169. Blaser, A. W. 2019. "Trumpian Normalcy, Global Disability, and World Peace." *Peace Review* 31, no. 4: 439-448. <https://doi.org/10.1080/10402659.2019.1800928>.

170. Heuser, Beatrice. *The Bomb: nuclear weapons in their historical, strategic and ethical context*. Routledge, 2014.

171. Baker, Nicole. "Bikini Atoll: A small remote atoll of global significance." *World Heritage in a Sea of Islands: Pacific 2009 Programme* (2012): 46-51.

172. International Campaign to Abolish Nuclear Weapons (ICAN). *The Humanitarian and Human Rights Impacts of Nuclear Weapons*. 2013. Accessed March 15, 2024. https://www.icanw.org/wp-content/uploads/2013/02/ICAN_Humanitarian-and-Human-Rights-FAQ.pdf

173. Pacific Community's Human Rights and Social Development Division. *Human Rights Situational Analysis Report 2016-2020*.

174. "Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters." *International Legal Materials* 38, no. 3 (May 1999): 517-33. <https://doi.org/10.1017/s0020782900019203>.

175. Duane Champagne. "UNDRIP (United Nations Declaration on the Rights of Indigenous Peoples): Human, Civil, and Indigenous Rights." *Wicazo Sa Review* 28, no. 1 (2013): 9. <https://doi.org/10.5749/wicazosareview.28.1.0009>.

176. Kong, Lingjie, and Yuqing Zhao. "Remedying the Environmental Impacts of War: Challenges and Perspectives for Full Reparation." *International Review of the Red Cross* 105, no. 924 (2023): 1441-62. <https://doi.org/10.1017/S1816383123000280>.

177. McDermott, Constance L., Emmanuel Acheampong, Seema Arora-Jonsson, Rebecca Asare, Wil de Jong, Mark Hirons, Kaysara Khatun et al. "SDG 16: peace, justice and strong institutions—a political ecology perspective." (2019): 510-540.

178. International Campaign to Abolish Nuclear Weapons, "The Human Cost of Nuclear Testing," ICAN, https://www.icanw.org/nuclear_tests.

of those historically marginalised.¹⁷⁹

Historically, NPT processes have been overshadowed by the influence of a select group of powerful states, sidelining wider perspectives, including those of communities directly impacted by nuclear activities. This is also spurred by these states' postures and commitments to nuclear deterrence policies. For meaningful progress, the NPT must evolve to incorporate fair representation from these regions, and to tackle the imbalance of power between the nuclear weapon and non-nuclear weapon states, ensuring minoritised voices are heard and influential in shaping nuclear policies and responses.

The need for a more inclusive approach within the NPT is underscored by the success of frameworks like the Women, Peace and Security (WPS) and Youth, Peace and Security (YPS) agendas, which prioritise women and youth perspectives within affected communities. These agendas, backed by UN Security Council Resolutions 1325 and 2250, illustrate the useful impact of integrating diverse viewpoints into policy discussions, and offer examples on how to do so. By adopting similar strategies, the NPT can foster a more equitable and effective framework for nuclear non-proliferation, drawing on the lived experiences of survivors and leveraging the innovative potential of younger generations.

To catalyse this progress within NPT processes and meetings, a commitment to expanding the treaty's inclusivity and fairness, guided by explicit indicators to track progress, is imperative. This involves transitioning from merely normative encouragements to actionable mandates that facilitate compensation, support for health and environmental programs, and the integration of survivor narratives into disarmament strategies. Such a comprehensive approach aligns with the HINW agenda and strengthens the global nuclear governance structure, ensuring it is responsive, just, and reflective of the diverse global community it aims to protect.

POLICY RECOMMENDATIONS

To invigorate the NPT's approach to DEI, a nuanced, actionable strategy tailored to the unique context of nuclear diplomacy is essential. These solutions should be realistic, in harmony with the nature of existing policy landscapes, ensuring feasibility while pursuing transformative change.

Strategic Funding for Inclusive Participation:

- A collaborative international fund, managed by a consortium of NPT states, civil society, and international financial institutions, to support participation from historically underrepresented regions transparent in its governance and application process, will specifically target experts from the Global South, covering travel, accommodation, and participation expenses. This initiative democratises access to NPT processes by reducing financial barriers and embodies a shared commitment to enriching the treaty's deliberations with a wider range of voices.

Bridging Gaps and Robust Monitoring:

- Addressing gender disparities and promoting interregional collaboration are central to this strategy. States should be encouraged to diversify their delegations. The creation of advisory committees will ensure the inclusion of diverse perspectives in the NPT's decision-making processes.
- Thoroughly reviewing language and conference facilities will address inclusivity and accessibility concerns, creating an environment where all participants feel welcomed and valued.
- A monitoring and evaluation system equipped with clear DEI metrics to track the progress of these initiatives, enabling ongoing refinement and ensuring that the NPT's approach to DEI is both effective and reflective of its commitment to global nuclear governance.

Mandatory Diversity Quotas and Empowering Youth:

- The introduction of mandatory diversity quotas for NPT delegations, i.e. a specific delegation for the youth, and advisory roles aims to secure representation from diverse demographics, including women, youth, indigenous communities, persons with disabilities, and experts from the Global South.

179. United Nations Office for Disarmament Affairs, "Treaty on the Prohibition of Nuclear Weapons," UNODA, <https://disarmament.unoda.org/wmd/nuclear/tpnw/>, and Norwegian People's Aid, "The Status of the TPNW," Nuclear Weapons Ban Monitor, <https://banmonitor.org/about>.

- To develop a formal youth participation platform for the NPT, facilitated by relevant UN agencies and funded through the international collaborative fund. This platform will offer support, including internships, mentorship programs, and youth forums, to ensure that the voices of future leaders are integral to shaping NPT-related nuclear policy.

Expert Exchange Programme:

An expert exchange programme to promote collaboration and knowledge-sharing among states, addressing expertise disparities, thereby encouraging diverse delegations and interregional collaboration facilitated by advisory committees. By fostering scientific collaboration, the programme enhances nuclear governance in line with the NPT's commitment to global cooperation while depoliticising some aspects of nuclear governance through scientific cooperation. This might even create momentum, thanks to which more political aspects of nuclear governance might be easier to manage.

The NPT can progress toward a truly inclusive, equitable, and effective framework by implementing these recommendations, thus ensuring that nuclear non-proliferation and disarmament efforts are more responsive to the diverse global community and its humanitarian concerns. This approach ensures that the treaty is better equipped to navigate the complexities of nuclear non-proliferation and disarmament in a way that is reflective of and responsive to the diverse global community it serves.

Conclusion

The NPT stands at a crossroads, with the potential to redefine its legacy through a concerted commitment to DEI. By establishing a collaborative funding mechanism, reforming procedural frameworks for greater transparency, introducing diversity metrics, and creating platforms for the meaningful participation of youth, the NPT community can move toward inclusivity. These strategic actions, coupled with initiatives to bridge gender disparities and enhance scientific engagement, lay the groundwork for a more equitable and effective treaty. Integrating diverse perspectives, especially from historically marginalised communities, into nuclear decision-making enriches the discourse and ensures that policies reflect the multifaceted nature of global nuclear challenges- in turn, better centering the humanitarian impacts of nuclear weapons, and facilitating proactive policymaking in consideration of these impacts. These recommendations align with contemporary human rights principles and strengthen the NPT's capacity to foster a secure, just, and nuclear-weapon-free world while reinforcing the HINW agenda. This approach, underpinned by robust monitoring and evaluation, works to elevate the NPT beyond its current limitations, ensuring it remains the cornerstone of global nuclear governance in the years to come.