Climate Protection and Nuclear Abolition:
Developments in Humanitarian Disarmament and Human Rights Since the Release of *The Climate-Nuclear Nexus*

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Introduction

The Foreword to *The Climate-Nuclear Nexus*,[2] first published by the World Future Council in 2015, begins:

> While humanity faces a range of interconnected transnational threats and crises in the 21st Century—including extreme poverty, hunger, pandemic disease and demographic change—climate change and the continued existence of nuclear weapons stand out as the two principal threats to the survival of humanity. On the long arc of human existence, both threats are relatively new to the scene, having only appeared over the last century. Both threaten the survival of life on earth as we know it and both are of our making.[3]

The challenges posed by climate change and nuclear weapons have only grown more formidable in ensuing years. Nuclear weapon possessors are modernizing their arsenals and in some cases increasing them. US-Russian nuclear arms control negotiations have stalled, and multilateral nuclear disarmament negotiations are non-existent. The Russian invasion of

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[2] *The Climate-Nuclear Nexus: Exploring the linkages between climate change and nuclear threats,* World Future Council (2015, revised edition 2016). Principal author: Jürgen Scheffran; contributing authors: John Burroughs (then LCNP Executive Director), Anna Leidreiter, Rob van Riet, and Alyn Ware.

[3] *Id*., p. 1.

Ukraine and the strong international reaction against it has severely disrupted already tenuous cooperation among major powers on matters of peace and disarmament. And, of course, climate change has grown impossible to ignore. A recent IPCC report cites an all-but-unavoidable increase in global temperatures, sparking worldwide climate disasters we are already seeing: raging fires, harsher hurricanes, flash flooding, and more.[4]

Climate change and nuclear weapons are inextricably linked:

- Climate change can be a cause of a deteriorating security environment,[5] in turn leading to armed conflict, which could involve use of nuclear arms.

- Lack of cooperation on addressing nuclear weapons can impair cooperation on addressing climate change. As David Steward and Jonathan Granoff observe: "Our future depends on intense cooperation to achieve human security in the face of climate change, global pandemics, and other serious threats. Yet nothing undermines cooperation more than the threat of nuclear weapons. We must build a future without them for humanity to have a future at all." [6]

- Resources spent on nuclear arsenals cannot be spent on climate protection and other socially beneficial ends, and production and deployment of nuclear arms requires energy consumption that generates greenhouse gases.[7]

- A major nuclear exchange would cause a dramatic drop in global temperatures—"nuclear winter," climate change in the opposite direction.[8]

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[4] Climate Change 2022: Impacts, Adaptation and Vulnerability, Working Group II, Intergovernmental Panel on Climate Change, 27 February 2022. See FAQ 1: What are the new insights on climate impacts, vulnerability and adaptation compared to former IPCC reports?

[5] See *The Climate-Nuclear Nexus, supra*, pp. 11-12.

[6] "Putin's nuclear risk: The stability that characterized the Cold War stand-off may no longer exist," The Hill, 30 March 2022.

[7] The misallocation of resources is true of military spending generally. Moreover, warfighting involves intensive use of fossil-fuel based energy and therefore greenhouse gas emissions. See Neta Crawford, "Pentagon Fuel Use, Climate Change, and the Costs of War," Watson Institute, Brown University, 12 June 2019; Angelika Claußen, "War Is a Climate Killer," International Politics and Society, 1 August 2022.

[8] See, e.g., Lili Xia Alan Robock, Kim Scherrer, Cheryl S. Harrison, Jonas Jägermeyr, Charles G. Bardeen, Owen B. Toon, and Ryan Heneghan, 2022: "Global food insecurity and famine from reduced crop, marine fishery and livestock production due to climate disruption from nuclear war soot injection," *Nature* Food; Alan Robock and Owen Brian Toon, 2012, "Self-Assured Destruction: The Climate Impacts of Nuclear War," Bulletin of the Atomic Scientists, 68(5), pp. 66-74; *The Climate-Nuclear Nexus, supra,* pp. 13-14.

Solutions in the climate and nuclear arenas are parallel in important respects. Climate protection and nuclear disarmament are both intrinsically global political and legal processes built on core treaties and raise similar issues of upholding the international rule of law. This paper first summarizes key observations and findings, followed by an overview of regime-creating climate and nuclear treaties. It then compares and assesses the treaty regimes in the two spheres, including the role of an agreement negotiated subsequent to the release of *The Climate-Nuclear Nexus*, the Treaty on the Prohibition of Nuclear Weapons. It goes on to describe relevant recent developments in human rights law and closes with a discussion of a recent proposal to establish an international crime of ecocide.

Key Observations and Findings

- Nuclear disarmament and climate protection each have treaty regimes aimed at implementation of general obligations, setting a framework for action contained in international legal agreements, the Nuclear Non-Proliferation Treaty (NPT), the UN Framework Convention on Climate Change, and the Paris Agreement on climate change.

- In both the climate and nuclear arenas, states are obligated to act in accordance with the fundamental legal principle *pacta sunt servanda*: a treaty is legally binding and must be performed in good faith.

- The NPT has played a significant role, possibly a crucial role, in preventing the spread of nuclear arms to additional countries. However, it has fallen far short of its objectives of cessation of nuclear arms racing and of elimination of nuclear arsenals.

- No nuclear-armed state has joined the Treaty on the Prohibition of Nuclear Weapons (TPNW) or seems likely to do so in the near future. Nonetheless, the TPNW has served to highlight what is supposed to be a "pillar" of the NPT, namely nuclear disarmament, and may over time stimulate progress on that pillar. Like the regional nuclear-weapon-free zone treaties, it also reinforces the NPT obligation of non-acquisition of nuclear weapons by non-possessor states. Importantly, it has for the first time focused global policy attention on the imperatives of victim assistance and environmental remediation.

- With its emphasis on the catastrophic environmental as well as humanitarian consequences of nuclear weapons, as well as its obligation of environmental remediation, the TPNW creates visible linkages between humanitarian nuclear disarmament and climate and environmental protection.

- How well the Paris Agreement is working in terms of the bottom line of averting climate change is open to question. It is far from clear whether some countries, including the United States, will be able to meet their nationally determined targets. Moreover, those targets taken together are not sufficient to meet the goal of 1.5°C average global increase in temperature.

- The nuclear and climate regimes face daunting challenges. The nuclear regime is hampered by lack of cooperation and trust arising out of its unequal two-tier structure and the continued reliance on nuclear arms in global power politics. The climate regime appears to have buy-in in principle from most countries, including large ones. Further, climate protection is conducted in a constructive, problem-solving mode. On the other hand, changing economies in order to meet climate protection goals is an inherently difficult task.

- The human rights basis for nuclear disarmament and climate protection has been bolstered in recent years by three developments: the negotiation of the TPNW, which protects the human rights of victims of testing and use of nuclear arms; a UN Human Rights Committee finding that threat or use of nuclear weapons is incompatible with respect for the right to life; and recognition of the right to a clean, healthy, and sustainable environment by the UN Human Rights Council and the UN General Assembly.

- Stop Ecocide International has proposed that a crime of ecocide be added to the Rome Statute of the International Criminal Court. This would be a fifth category of crimes under the Rome Statute, joining war crimes, crimes against humanity, genocide, and aggression. Experts have proposed defining ecocide as "unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts."

- A crime of ecocide would apply in times of peace as well as war. Establishment of an international crime of ecocide would contribute to future protection of the climate, and also perhaps to prevention of environmental harm arising from future production and testing of nuclear weapons. Yet amending the Rome Statute to add a crime of ecocide would not be a panacea, due in part to jurisdictional hurdles.

- Ecocide committed during the course of international armed conflict is already proscribed by existing international instruments, most importantly the Rome Statute and Protocol I to the Geneva Conventions.

- Whether or not the crime of ecocide is added to the Rome Statute in the near future, the concept of ecocide can and should serve as a strong linkage in popular consciousness and in policy deliberation between the twin imperatives of averting catastrophic climate change and averting catastrophic nuclear war.

Overview of Regime-Creating Climate and Nuclear Treaties

The 1992 United Nations Framework Convention on Climate Change (UNFCCC) sets out initial, general commitments to push states to adopt national policies to mitigate climate change, including limiting anthropogenic emissions of greenhouse gases and protecting greenhouse gas sinks and reservoirs. The 1997 Kyoto Protocol set a collective goal of a 5% reduction in global emissions of greenhouse gases by 2010 compared to the year 1990 (the United States never ratified this agreement). Over a decade later, the 2009 Copenhagen Accord saw broad consensus that limiting global temperature rise to less than 2°C is essential, but the agreement failed to outline steps to ensure that outcome. The 2015 Paris Agreement seeks to limit global average warming to below 2°C, with the goal of limiting it to 1.5°C. Since then, there has developed a critical mass of agreement that action is imperative to limit warming of the planet to no more than 1.5°C; even that level, a near-inevitability at this point, would have severe repercussions for human security throughout the world.

In the last year, climate scientists have issued the direst warnings yet. A 2021 IPCC report highlights the seriousness of the climate crisis, noting that human activity has warmed the climate at a rate that is unprecedented in at least the last 2000 years.[9] This report draws attention to rapid and widespread changes in the atmosphere, ocean, cryosphere, and biosphere, and reaffirms past findings that there is a linear relationship between "cumulative anthropogenic CO2 emissions and the global warming they cause."[10]

The cornerstone of the current legal framework for nuclear disarmament remains the Nuclear Non-Proliferation Treaty (NPT). While discriminating in its very structure between the vast majority of states parties obligated not to acquire nuclear weapons and the states acknowledged to possess them (US, UK, France, Russia, China), the NPT sets out an obligation to pursue negotiations on the elimination of nuclear weapons. The NPT also impacts global energy and environmental policy. Far from calling for limiting or eliminating reliance on nuclear energy, it promotes knowledge-sharing about and assistance in the use of nuclear power for "peaceful" purposes. In addition to this over-50-year-old treaty, other agreements, including regional nuclear-weapon-free zones, the new Treaty on the Prohibition

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[9] Summary for Policymakers, *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, p. 6, 2021.

[10] *Id.*, p. 28.

of Nuclear Weapons (TPNW), and New START, the US-Russian nuclear arms control agreement, shape the legal disarmament landscape.

Despite the NPT's prominent place in disarmament discussions, nuclear weapon states parties to the treaty have largely stalled, even regressed, in making any progress on their treaty obligations and on commitments made at the five-year review conferences to implement those obligations. The argument that the treaty-recognized nuclear weapon possessors have engaged in good faith negotiation to eliminate nuclear weapons is hard to maintain in the face of today's facts, including: modernization of weaponry, stagnation in US-Russian nuclear arms control, absence of any multilateral nuclear arms control/disarmament negotiations, an increase in size of at least China's arsenal, and reduction of transparency regarding stockpiles. Certainly, contrary to the International Court of Justice's unanimous holding in 1996, NPT states parties have not brought "to a conclusion negotiations leading to nuclear disarmament in all its aspects."[11]

In 2017, 122 states negotiated the TPNW under UN auspices. The treaty entered into force in January 2021. Notably for our purposes, the TPNW explicitly acknowledges the devastating environmental impacts of nuclear weapons and binds states parties to remediating the toxic effects of nuclear testing and use. However, no nuclear-armed state is currently party to the treaty. Below, we discuss the impact that the TPNW and its humanitarian disarmament approach may yet have on disarmament at large.

Comparison of Nuclear and Climate Treaty Regimes

Nuclear disarmament and climate protection each have treaty regimes aimed at implementation of general obligations, setting a framework for action contained in international legal agreements[12]—in particular, as set out above, the NPT, the UNFCCC, and the Paris Agreement on climate change.

NPT Article VI requires states parties to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament. The NPT preamble refers to the "devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war;" declares an intention "to achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament;" and declares the

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[11] *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion of the International Court of Justice ("Nuclear Weapons Advisory Opinion"), 8 July 1996, ICJ Reports (1996) 226, ¶ 2F, dispositif.

[12] On the concept of treaty regimes, see John Burroughs, "Treaty Regimes and International Law," Section 1.1, *Nuclear Disorder or Cooperative Security?* (2007).

desire to strengthen trust and cooperation among states to facilitate "the elimination from national arsenals of nuclear weapons and the means of their delivery pursuant to a Treaty on general and complete disarmament." In its 1996 Advisory Opinion, the International Court of Justice authoritatively interpreted Article VI, together with other international law, as "an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control."[13]

The UNFCCC, Article 2, sets as the "ultimate objective" the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic [human-caused] interference with the climate system." It sets out general obligations, including the Article 4(2)(a) requirement that each developed state party "shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs." It also envisages further cooperative action, including, pursuant to Article 17, the adoption of additional agreements, of which the Paris Agreement is the most important and is now the operational framework for climate protection.

Characteristics of the regimes

As is true of other multilateral treaties, the climate and nuclear regimes feature regular meetings of states parties at which they discuss progress or lack thereof in meeting treaty objectives and make further commitments to implement treaty obligations. Non-governmental organizations advocate in relation to the meetings and attend them, in significant numbers—in the hundreds at NPT meetings, and in the many thousands at UNFCCC meetings.

A characteristic of a fully-developed treaty regime is an international organization or body charged with monitoring implementation of treaty obligations—for example, the Organization for the Prohibition of Chemical Weapons in the case of the Chemical Weapons Convention. In the nuclear regime, the International Atomic Energy Agency (IAEA), which predates the NPT and has its own statute, is responsible for verifying the obligation of non-nuclear weapon states not to acquire nuclear weapons. It does so through the system for safeguarding nuclear fuel for reactors. In other words, the IAEA monitors compliance with the non-proliferation obligation, including in principle with respect to the Democratic People's Republic of Korea (DPRK), which withdrew from the NPT and acquired nuclear arms. The UN Security Council has mandated that the DPRK denuclearize, and the 2010 NPT Review Conference urged that the DPRK return to the NPT. There is, however, no international organization or other body responsible for verifying disarmament of nuclear

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[13] Nuclear Weapons Advisory Opinion, *supra*.

arsenals held by the acknowledged NPT nuclear weapon states pursuant to NPT Article VI, or by nuclear-armed states outside the NPT other than the DPRK (India, Israel, Pakistan).

The UN Security Council is effectively part of the nuclear regime because of its active role in addressing the potential or actual acquisition of nuclear arms by new states. Another element of the regime is an international organization that actively monitors nuclear explosive testing. It is formally called the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), preparatory because the treaty has yet to enter into force.

There is no international organization comparable to the IAEA or CTBTO in the climate regime, though the Intergovernmental Panel on Climate Change (IPCC) plays a very important independent role through its science-based assessment of the state of climate, and the UN Environmental Programme performs valuable functions such as public education and providing assistance to states. The Paris Agreement, in Article 13(7), references the IPCC as a source of good methodology. As explained below, provisions relating to setting national targets for reducing greenhouse gas emissions, and actions to achieve those targets, are not legally binding under the Paris Agreement, and there is no organization or body responsible for assessing whether targets are met. Nonetheless, given the annual conferences of states parties and the intense scrutiny of countries' performances by outside observers, considerable pressure is exerted to meet targets.

In terms of the wider institutional framework, the climate regime differs from the nuclear regime in two significant respects. First, while the UN Security Council has occasionally considered the topic of climate change in connection with its actual and potential effects on international peace and security, it has not pursued an action-oriented agenda, in contrast to its deep engagement with preventing the proliferation of nuclear weapons (though not with accomplishing nuclear disarmament). Second, the climate regime is buttressed by the inclusion of a goal of climate protection among the Sustainable Development Goals (SDGs) adopted by the UN General Assembly in 2015.[14] No such goal explicitly addresses disarmament of any kind.[15] Goal 13, entitled "Take urgent action to combat climate change and its impacts," calls for increasing national capacity on climate change mitigation and adaptation and for assistance to developing countries to that end in accordance with commitments made under the UNFCCC.[16] Like other SDGs, progress on Goal 13 is on

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[14] "Transforming our world: the 2030 Agenda for Sustainable Development," A/Res/70/1, 25 September 2015, Goal 13, p. 23.

[15] Goal 16, which addresses effective national governance delivering peace and justice, does call for reducing illicit arms flows. *Id*., pp. 25-26.

[16] The resolution adopting the SDGs acknowledges that the UNFCCC framework is the primary international forum for negotiating the global response to climate change. *Id.*, p. 23 (footnote).

occasion reviewed at the UN High-Level Political Forum on Sustainable Development held annually.[17]

In both arenas, in particular with respect to the NPT, the UNFCCC, and the Paris Agreement, states are obligated to act in accordance with the fundamental legal principle *pacta sunt servanda*: a treaty is legally binding and must be performed in good faith.[18] The International Court of Justice has elucidated the requirement, stating that the "principle of good faith obliges the Parties to apply [a treaty] in a reasonable way and in such a manner that its purpose can be realized."[19] According to a leading commentary on the United Nations Charter, "Good faith forbids contracting parties to behave in any way that is intended to frustrate the meaning and purpose of a treaty."[20] The requirement of good faith is hard to reconcile with nuclear-armed states' execution of plans to maintain their nuclear arsenals indefinitely while not engaging in multilateral nuclear disarmament negotiations; it is also hard to reconcile with many states' plans for ongoing reliance on fossil energy technologies causing large-scale damage to the climate.[21] In future nuclear and climate negotiations undertaken pursuant to existing obligations, good faith also requires, among other things, awareness of the interests of other parties; a persevering quest for an acceptable compromise, with a willingness to contemplate modification of one's own position; and no undue delay or prolongation of the process.[22]

Effectiveness of the regimes

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[17] The 2022 declaration of the High-Level Political Forum (advance copy) includes multiple paragraphs expressing urgency about the imperative of fulfilling Goal 13. At the outset, it states: "We reaffirm that climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development…. We urge the implementation of the Paris Agreement and the outcomes" of COP 26, the 26th session of the Conference of Parties to the UNFCCC, held in Glasgow, Scotland, in 2021.

[18] Article 26, Vienna Convention on the Law of Treaties: "Every treaty in force is binding upon the parties to it and must be performed by them in good faith."

[19] *Case Concerning the Gabčíkovo-Nagymaros Project (Hungary. v. Slovakia)*, 1997 I.C.J. p. 7, at p. 79, ¶ 142.

[20] "Article 2 (2)", ¶ 34, in Bruno Simma, et al, The *Charter of the United Nations A Commentary*, (Oxford University Press, 3rd ed. 2012). Cf. Antonio Cassese, The Israel-PLO Agreement and Self-Determination, 4 European Journal of International Law Vol. 564 (1993) at p. 567 (states subject to an obligation of negotiation "are not allowed … to accomplish acts which would defeat the object and purpose of the future treaty").

[21] A Fossil Fuel Non-Proliferation Treaty has been proposed. It would prevent the spread of fossil energy technology and phase it out where it already exists.

[22] See Charles J. Moxley, Jr., John Burroughs and Jonathan Granoff, Nuclear Weapons and Compliance with International Humanitarian Law and the Nuclear Non-Proliferation Treaty, Fordham International Law Journal (2011), p. 694; Elizabeth Shafer, "The Legal Imperative of Good Faith Negotiation on the Nuclear Disarmament Obligation of NPT Article VI," 2 April 2014; Cassese, *supra*.

How effective are the nuclear and climate treaty regimes? **In the case of the NPT-based regime, it has played a significant role, possibly a crucial role, in preventing the spread of nuclear arms to additional countries. However, it has fallen far short of its objectives of cessation of nuclear arms racing and of elimination of nuclear arsenals.** A strong though general set of commitments was adopted at five-year NPT conferences following the end of the US-Soviet "Cold War," in 1995, 2000, and 2010.[23] Those commitments, among them reducing the role of nuclear weapons in security policies, bringing the CTBT into force, negotiating a fissile material cut-off treaty, and engaging in reductions of nuclear arms leading to their elimination, have for the most part not been fulfilled.

Disturbingly, since the conclusion of negotiations on the CTBT in 1996 no multilateral negotiations involving nuclear-armed states on the cessation of nuclear arms racing and nuclear disarmament have taken place. Relatedly, at no time have numerical targets for reduction of nuclear arsenals been adopted and recognized multilaterally. This is a simple but instructive contrast with the climate regime, in which nationally set targets for reductions of greenhouse gas emissions play a central role under the Paris Agreement.

Further, the salience of nuclear weapons in global power politics is on the rise, notably with the exchange of nuclear threats between the United States and North Korea in 2017 and Russia's threat to resort to nuclear arms should NATO states intervene militarily in defense of Ukraine against the Russian invasion.[24] The worst case, short of actual use of the weapons, is that Russian reliance on nuclear threats in its war against a non-nuclear weapon state, Ukraine—which moreover had turned over a Soviet-era nuclear arsenal to Russia—and North Korea's defiant development and flaunting of a small nuclear arsenal, will cause some non-nuclear weapon states eventually to act to acquire nuclear arms.

Frustration with the lack of implementation of the commitments made at NPT meetings, and of the underlying disarmament obligations, propelled the negotiation of the Treaty on the Prohibition of Nuclear Weapons by 122 non-nuclear weapon states in 2017. The parties and proponents of the TPNW highlight the power of this treaty to shift the discourse on nuclear weapons and strengthen the international legal norm against these weapons of mass destruction. The TPNW serves as a beacon of light in the humanitarian disarmament movement—a movement that seeks to center the security of people rather than the security of states in its pursuit of arms control and, essential in the case of nuclear weapons, abolition.

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[23] The most recent conference, held in 2022, did not result in a consensus outcome document, but there was general agreement on the continuing importance of commitments made at the 1995, 2000, and 2010 conferences. See 2022 NPT Review Conference: Nuclear Abolition not on the Agenda, Lawyers Committee on Nuclear Policy, 8 September 2022.

[24] See Threats to Use Nuclear Weapons: Unacceptable and Illegal, Working Paper submitted by International Association of Lawyers Against Nuclear Arms to the First Meeting of States Parties to the Treaty on the Prohibition of Nuclear Weapons, June 2022.

Importantly, the TPNW obligates nuclear-armed states or states hosting nuclear weapons to disarm in a specific, time-bound manner upon joining the treaty, if they have not already disarmed, and otherwise subjects parties to the same prohibitions and obligations. While it necessarily treats such states differentially, it is not discriminatory in an invidious sense, unlike the NPT, which acknowledges nuclear-armed parties, imposes different obligations on them, for example relating to safeguards, and only subjects them to a general obligation of negotiation of nuclear disarmament, with no explicit timeframe.

The TPNW entered into force in 2021 and had its first meeting of states parties in 2022. It has some features of a treaty regime. It seeks implementation of norms proclaimed to be universal; involves regular meetings of states parties; and is bolstered by a dynamic civil society organization, the International Campaign to Abolish Nuclear Weapons. Further, with respect to the treaty obligations of assistance to victims of nuclear testing and use and remediation of environmental damage caused by such testing and use, it requires additional practical implementation that will be shaped and monitored by states parties at regular meetings and through a working group. Whether the disarmament-related provisions of the treaty will be invoked based on nuclear-armed and nuclear weapon-hosting states joining the treaty remains to be seen.

The TPNW has been received very coolly by the NPT nuclear-armed states, none of whom are likely in the near term to join the treaty. Nonetheless, Austria and other leading states parties to the TPNW insist, with reason, that the TPNW is fully compatible with the NPT, serving as one means at least of implementation of the Article VI disarmament obligation.[25] **Without question, the TPNW has served to highlight what is supposed to be a "pillar" of the NPT, namely disarmament, and may over time at least stimulate progress on that pillar. Like the regional nuclear-weapon-free zone treaties, it also reinforces the NPT obligation of non-acquisition of nuclear weapons by non-possessor states.** Importantly, it has for the first time focused global policy attention on the imperatives of victim assistance and environmental remediation, as discussed in the next section. Meeting those imperatives surely is the right thing to do and a necessity for ending the nuclear age in a responsible manner.

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[25] The declaration of the First Meeting of States Parties to the TPNW states: "We recognize the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) as the cornerstone of the disarmament and nonproliferation regime, and deplore threats or actions that risk undermining it. As fully committed states parties to the NPT, we reaffirm the complementarity of the Treaty with the NPT. We are pleased to have advanced the implementation of the NPT's Article VI by bringing into force a comprehensive legal prohibition of nuclear weapons, as a necessary and effective measure related to the cessation of the nuclear arms race and to nuclear disarmament. We urge all NPT States Parties to reinvigorate their efforts to fully implement the obligation of Article VI and the actions and commitments agreed at NPT review conferences. We reiterate our commitment to work constructively with all NPT States Parties to achieve our shared objectives." Draft Vienna Declaration of the 1st Meeting of States Parties of the Treaty on the Prohibition of Nuclear Weapons, 23 June 2022, ¶ 12.

Given all this, the TPNW may very well come to be crucial part of the overall nuclear disarmament and non-proliferation regime. **Also, with its emphasis on the catastrophic environmental as well as humanitarian consequences of nuclear weapons, as well as its obligation of environmental remediation, the TPNW creates visible linkages between nuclear disarmament and climate and environmental protection.**

As to the climate regime, it is undisputed that for the first two decades after adoption of the 1992 UNFCCC little progress was made on meeting the objective of stabilization of greenhouse gas concentrations at safe levels. The 2015 Paris Agreement aims to reverse that trend, seeking to limit global average warming to below 2°C, with the goal of limiting it to 1.5°C. The agreement is partly legally binding and partly voluntary. Countries are required to communicate "intended nationally determined contributions" (INDCs) to mitigation of and adaptation to climate change, which will be regularly reviewed. However, meeting the goals set in the INDCs is not legally required. Crucially, this means that targets set for national emissions reduction are not binding as a matter of international law and may not be binding as a matter of national law depending on how a state integrates targets into its policy. This approach was taken because the Obama administration wanted to be able to claim that, under US law, the Paris Agreement is an executive agreement, not a treaty subject to Senate approval of ratification. In addition, there are no penalties for non-compliance with the agreement.

How well the Paris Agreement is working in terms of the bottom line of averting climate change is open to question. It is far from clear whether some countries, including the United States, will be able to meet their nationally determined targets.[26] Moreover, those targets taken together are not sufficient to meet the goal of 1.5°C average global increase in temperature.[27] They are instead projected, if fulfilled, to limit the increase in warming to 2.7°C.[28] Frustratingly, some governments have been reluctant so far to strengthen their national targets though they committed to consider doing so.[29] There were no advances made on this front at COP 27, held in November 2022, to the considerable frustration of

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[26] In the case of the United States, the climate bill signed into law in August 2022 is estimated to help bring about a 40% reduction of the 2005 level of emissions by 2030; the US target is a 50% reduction by that year. Nadja Popovich and Brad Plumer, "How the New Climate Bill Would Reduce Emissions," *New York Times*, 12 August 2022. See also Alexandra Meise, "U.S. Climate Commitments in the Wake of West Virginia v. EPA," ASIL Insights, 16 August 2022.

[27] See Climate Change 2022: Mitigation of Climate Change, Working Group III Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, p. 18.

[28] See Sara Schonhardt, "Countries Back Away from Pledge to Update Climate Goals This Year," Scientific American, 1 February 2022 (citing report by UN Environmental Programme).

[29] *Id*.

climate activists and scientists. COP 27 did open the way for compensating countries for "loss and damage" caused by climate change.

The two regimes face daunting challenges. The nuclear regime is hampered by lack of cooperation and trust arising out of its unequal two-tier structure and the continued reliance on nuclear arms in global power politics. The climate regime appears to have buy-in in principle from most countries, including large ones. Further, climate protection is conducted in a constructive, problem-solving mode. On the other hand, changing economies in order to meet climate protection goals is an inherently difficult task. Arguably it is more difficult, certainly from a technical perspective, than ending reliance on and eliminating nuclear weapons, though the latter task is tangled up with national identity and competitive geopolitics in a way that climate protection is not.

Indeed, in contrast to the climate regime, despite efforts to make the NPT an engine for nuclear disarmament in the post-Cold War era, the NPT and the nuclear regime generally remains centrally one of denial of nuclear weapons to states that do not yet have them, not cooperation in creating a world free of nuclear weapons. The TPNW admirably seeks to change the paradigm to one of problem solving based on humanitarian values, aiming to address not only the existence of nuclear weapons but also the legacy of their testing and use.

Developments in Human Rights Relating to Climate Protection and Nuclear Abolition

Since *The Climate-Nuclear Nexus* was first released in 2015, there have been several important developments relating to international human rights law. One was the 2017 negotiation of the Treaty on the Prohibition of Nuclear Weapons, already touched upon and further discussed below. Then, in 2018, the UN Human Rights Committee released General Comment No. 36 on the right to life[30] as inscribed in Article 6 of the International Convention on Civil and Political Rights (ICCPR). Finally, in 2021 the Human Rights Council adopted a resolution recognizing a "human right to a clean, healthy and sustainable environment,"[31] and in 2022 the General Assembly followed suit, adopting a resolution recognizing the right with no negative votes and few abstentions.[32]

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[30] Released 30 October 2018, final version CCPR/C/GC/36, 3 November 2019. For commentary, see in particular contributions of Professor Roger Clark and Dr. Daniel Rietiker in *Human Rights Versus Nuclear Weapons: New Dimensions*, Lawyers Committee on Nuclear Policy, January 2021.

[31] *The human right to a clean, healthy and sustainable environment*, A/HRC/RES/4813, adopted 8 October 2021. On 28 July 2022, in resolution A/76/300 (1 August 2022), by a vote of 161 to zero with eight abstentions, the General Assembly also recognized the right.

[32] Resolution A/76/300, adopted 28 July 2022 by a vote of 161 to zero with eight abstentions.

Concerning the first development, the TPNW relates specifically to the application of human rights law because one of its aims is essentially to uphold the human rights of victims of testing and use of nuclear weapons, as spelled out in Articles 6 and 7. Article 6 provides that each state party "shall, with respect to individuals under its jurisdiction who are affected by the use or testing of nuclear weapons, in accordance with applicable international humanitarian and *human rights law*, adequately provide age- and gender-sensitive assistance, without discrimination, including medical care, rehabilitation and psychological support, as well as provide for their social and economic inclusion." Also, the TPNW cites human rights law in its preamble, "[r]eaffirming the need for all States at all times to comply with applicable international law, including international humanitarian law and *international human rights law*." The TPNW's humanitarian perspective is similar to that underlying much of human rights law.

The TPNW also has significant elements relating to protection and restoration of the environment. TPNW Article 6 requires remediation of damage to the environment caused by nuclear testing and use; the preamble refers to the "grave implications" of nuclear weapons for the environment; and the preamble additionally notes that rules relating to protection of the environment are among the rules of international humanitarian law that must be observed in armed conflict. While not framed in human rights terms, those elements resonate with the human right to a clean, healthy, and sustainable environment.

In the second development, in 2018 the Human Rights Committee made strong findings with respect to nuclear weapons in General Comment No. 36. The Committee stated (para. 66):

> The threat or use of weapons of mass destruction, in particular nuclear weapons, which are indiscriminate in effect and are of a nature to cause destruction of human life on a catastrophic scale *is incompatible with respect for the right to life* and may amount to a crime under international law.

The Committee further found, *inter alia*, that states parties must respect

> their international obligations to pursue in good faith negotiations in order to achieve the aim of nuclear disarmament under strict and effective international control, and *to afford adequate reparation to victims whose right to life has been or is being adversely affected by the testing or use of weapons of mass destruction*, in accordance with principles of international responsibility.

The Committee also addressed environmental protection, including climate protection, stating (para. 62):

> Environmental degradation, *climate change* and unsustainable development constitute some of the most pressing and serious threats to the ability of present and future generations to enjoy the right to life…. Implementation of the obligation to respect and ensure the right to life, and in particular life with dignity, depends, inter alia, on measures taken by States parties to preserve the environment and protect it against harm, pollution and *climate change* caused by public and private actors.

The third development is that the 2021 Human Rights Council resolution "[r]ecognizes the right to a clean, healthy and sustainable environment as a human right that is important for the enjoyment of human rights." It also affirms that the promotion of the right "requires the full implementation of the multilateral environmental agreements under the principles of international environmental law." The preamble observes that climate change is among the causes of interference with the enjoyment of the right.[33] While the resolution does not refer to adverse environmental effects of nuclear weapons production, testing, or use, or other military-related activity, it nonetheless can be a resource for advocacy and action in that arena as well as the environmental sphere. The resolution is not itself legally binding, nor is the follow-up General Assembly resolution, but together they lay a possible foundation for interpretation of rights set out in existing international instruments to encompass the right to a clean, healthy, and sustainable environment, for the crystallization of a rule of customary international law, and/or for articulation of the right in a new treaty.

Adoption of the resolutions is potentially significant. The Human Rights Council was established by the General Assembly and its mandate is not restricted, like most human rights bodies, to implementation of one treaty. It thus is a political as well as legal body with a broad mandate, with more prominence in UN affairs than the treaty-related bodies. All of this has both positive and negative aspects. A positive aspect relevant here is the ability of the Council to influence wider political and policy discourse, which is also true of the General Assembly. Their recognition of the right to a clean, healthy, and sustainable environment will also provide additional arguments for climate protection advocates in litigation taking place

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[33] The full preambular paragraph reads: "*Recognizing* that, conversely, the impact of climate change, the unsustainable management and use of natural resources, the pollution of air, land and water, the unsound management of chemicals and waste, the resulting loss of biodiversity and the decline in services provided by ecosystems interfere with the enjoyment of a clean, healthy and sustainable environment, and that environmental damage has negative implications, both direct and indirect, for the effective enjoyment of all human rights."

in courts worldwide[34] and possibly in an effort to obtain an advisory opinion on climate protection from the International Court of Justice.[35]

Taken together, the TPNW, the Human Right Committee's General Comment, and the recognition of the right to a clean, healthy, and sustainable environment by the Human Rights Council and General Assembly may inject some energy into what has been over the decades a rather lackluster effort to apply human rights to nuclear weapons. In 1984, the Human Rights Committee had issued a strong statement in General Comment No. 14,[36] which begins: "It is evident that the designing, testing, manufacture, possession and deployment of nuclear weapons are among the greatest threats to the right to life which confront mankind today." However, little was heard in the human rights field on this subject in ensuing years and decades.

In 2012, the Human Rights Committee asked France a question concerning compensation of victims of French nuclear testing in French Polynesia.[37] So far as we are aware, issues relating to nuclear weapons have not been directly addressed by other human rights bodies concerning, for example, the right to water under the International Covenant on Economic, Social and Cultural Rights (ICESCR), Article 12; the right to an adequate standard of living, including housing, ICESCR Article 11; the right to enjoyment of the highest attainable standard of physical and mental health, ICESCR Article 12; obligations under the Convention on the Elimination of All Forms of Racial Discrimination (CERD); and obligations under the Convention on the Elimination of Discrimination Against Women (CEDAW). The CEDAW Committee, however, acknowledged in a 2018 General recommendation that disasters affecting gender-related human rights include "hazards and risks…of all types of weapons," including nuclear weapons.[38] Notably in the context of CEDAW, advocacy should stress that the immediate and long-term health effects of nuclear testing and use disproportionately affect women and girls,[39] as also recognized by the TPNW and increasingly in other disarmament fora.

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[34] See Climate Change Litigation Databases - Sabin Center for Climate Change Law (climatecasechart.com).

[35] See World's Youth for Climate Justice.

[36] General Comment No. 14: Article 6, ICCPR (Right to Life), Nuclear Weapons and the Right to Life, adopted 9 November 1984. In General Comment No. 6: Article 6 (Right to Life), adopted 30 April 2982, the committee had referred to the "supreme duty" of states to make efforts "to avert the danger of war, especially thermonuclear war".

[37] For more about this episode, see "France, Nuclear Weapons Policy, and the Right to Life," Lawyers Committee on Nuclear Policy, Submission to the UN Human Rights Committee, 5 May 2021, pp. 11-12.

[38] General recommendation No. 37, CEDAW/C/GC/37, ¶13, 13 March 2018.

[39] A February 2021 submission made by the Basel Peace Office and other groups to the UN Committee on Elimination of Discrimination Against Women exemplifies this approach.

Lawyers Committee on Nuclear Policy and other groups in the years following the 2018 General Comment on the right to life have made submissions to the Human Rights Committee reviews of individual countries as well as to such reviews conducted by the Human Rights Council.[40] LCNP also invoked both the right to life and the non-discrimination obligations of CERD in a submission to the US Nuclear Regulatory Commission.[41] We are presently considering future submissions to the CEDAW Committee on the basis of the discriminatory effects of nuclear weapons' testing and use. Especially given all else that human rights bodies are dealing with, it remains to be seen whether they will make nuclear weapon-related issues an active part of their reviews. At a minimum, though, we are seeking through this means to build wider awareness of the human rights critique of nuclear weapons.

For two decades or more preceding the 2021 Human Rights Council resolution on the right to a clean, healthy, and sustainable environment, climate protection had been the subject of human rights-oriented commentary in various forums. For example, the UN Office of the High Commissioner for Human Rights (OHCHR) had made several interventions relating to climate protection. In 2010, OHCHR released a position paper by a special rapporteur, entitled "Climate Change and the Human Rights to Water and Sanitation."[42] In 2015, OHCHR submitted a paper, "Understanding Human Rights and Climate Change,"[43] to COP 21, which negotiated the Paris Agreement on climate change. The paper discussed human rights most affected by climate change, including the right to life, right to self-determination, right to development, right to food, right to water and sanitation, right to health, right to housing, right to education, right to meaningful and informed participation, rights of those most affected by climate change, and rights of future generations.

Also, the Human Rights Council adopted a series of resolutions on climate change and human rights from 2008 to 2021.[44] Like OHCHR, the Human Rights Council, for example in resolution 29/15 of 2015, recognizes that climate change adversely affects enjoyment of

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[40] In the Human Rights Committee: Russia, June 2020; Democratic People's Republic of Korea, January 2021; France, May 2021. In the Human Rights Council: United States, October 2019. All are available at www.lcnp.org/human-rights. For submissions made by the Basel Peace Office with other groups, see UK and Netherlands nuclear policies challenged in the Human Rights Council.

[41] Lawyers Committee on Nuclear Policy, Public Submission to the Nuclear Regulatory Commission, 21 October 2020.

[42] Office of the High Commissioner for Human Rights, Mandate of the Independent Expert on the Issue of Human Rights obligations related to access to safe drinking water and sanitation, "Climate Change and the Human Rights to Water and Sanitation," 2010.

[43] "Understanding Human Rights and Climate Change," Submission of the Office of the High Commissioner for Human Rights to the 21st Conference of Parties to the United Nations Framework Convention on Climate Change, 2015.

[44] See OHCHR | Human Rights Council resolutions on human rights and climate change.

numerous human rights. The Council has also placed emphasis in its resolutions on the vulnerability of certain groups such as the elderly and disabled.

The Paris Agreement includes a preambular paragraph stating that:

> Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity.[45]

This is consistent with the input of OHCHR and the Human Rights Council.

The Committee on the Elimination of Discrimination Against Women has recognized the importance of protecting the human rights of women and girls and ensuring they are free from discrimination related to climate change and ensuing disasters. The Committee's General recommendation No. 37 states that "women and girls [experience] greater risks, burdens and impacts" from climate change and notes obligations under Article 2 of CEDAW

> to take targeted and specific measures to guarantee equality between men and women, including the adoption of participatory and gender-responsive policies, strategies and programs relating to disaster risk reduction and climate change.[46]

A notable civil society contribution, the 2017 Declaration on Human Rights and Climate Change[47] developed by the Global Network for Human Rights and the Environment, states as one of its principles:

> All human beings have the right to active, free, and meaningful participation in planning and decision-making activities and processes that may have an impact on the climate. This particularly includes the rights of indigenous peoples, women and other under-represented groups to equality of meaningful participation.

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[45] The Report of the Special Rapporteur on the promotion and protection of human rights in the context of climate change, A/77/226, ¶ 3, 26 July 2022, highlights this paragraph.

[46] CEDAW/C/GC/37, ¶ 28, 13 March 2018.

[47] "Declaration on Human Rights and Climate Change," ¶ 13, The Global Network for Human Rights and the Environment.

These rights and related principles are also relevant to decision-making regarding nuclear weapons and could help to form common ground between non-governmental groups working in the two arenas.[48]

The Proposed Crime of Ecocide

Building on a rich history going back to the early 1970s,[49] Stop Ecocide International proposed that a crime of ecocide be added to the Rome Statute of the International Criminal Court. This would be a fifth category of crimes under the Rome Statute, joining war crimes, crimes against humanity, genocide, and aggression. **An Independent Expert Panel convened by the Stop Ecocide Foundation has proposed a definition of ecocide as "unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts."**[50] The campaign has attracted significant support.

A crime of ecocide would apply in times of peace as well as war. Establishment of an international crime of ecocide would contribute to future protection of the climate, and also perhaps to prevention of environmental harm arising from future production and testing of nuclear weapons. Yet amending the Rome Statute to add a crime of ecocide would not be a panacea, due in part to jurisdictional hurdles arising from current amendment rules.[51] In brief, absent a Security Council referral, prosecution of a crime of ecocide, similar to prosecution of the crime of aggression, likely would require that both the state causing the ecocide and the state where the harm occurs are parties to the Statute and have ratified the amendment. A number of major countries, including the United States, China, Russia, and India, are not parties to the Rome Statute, and a Security Council referral could be blocked by a veto of a permanent member (US, UK, France, Russia, China). Notwithstanding these hurdles, in addition to any prosecutions in the International Criminal Court, adding a crime of ecocide to the Rome Statute could reinforce national legislation and litigation relating to climate change and generally influence policy in ways now hard to foresee.

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[48] See Andrew Lichterman, "Humanitarian Law, Human Rights, and Nuclear Weapons: Social Movements and the Path of Legal Development," in *Human Rights Versus Nuclear Weapons: New Dimensions,* Lawyers Committee on Nuclear Policy (2021), p. 43. Lichterman's remarks were delivered at an LCNP-organized NPT side event, "Human Rights, Democracy, and Nuclear Weapons," held 1 May 2019.

[49] See "History," *Ecocide Law*, Stop Ecocide International and the Promise Institute for Human Rights at UCLA School of Law.

[50] "Legal Definition of Ecocide Commentary and Core Text," *Ecocide Law*, Stop Ecocide International and the Promise Institute for Human Rights at UCLA School of Law.

[51] In particular, the rule stated in the second sentence of Article 121(5) of the Rome Statute: "In respect of a State Party which has not accepted the amendment, the Court shall not exercise its jurisdiction regarding a crime covered by the amendment when committed by that State Party's nationals or on its territory."

Ecocide committed during the course of international armed conflict is already proscribed by existing international instruments, most importantly the Rome Statute and Protocol I to the Geneva Conventions. The relevant war crime in the Rome Statute is defined in Art. 8 (2)(b)(iv):

> Intentionally launching an attack in the knowledge that such attack will cause incidental loss of life or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated.

Unfortunately, this war crime is formulated conditionally in an application of the principle of proportionality; damage to the environment is balanced against anticipated military gain. There also remains the problem discussed above of some major states not being party to the Rome Statute.

The rules set out in Protocol I, by contrast, are framed categorically, not involving a proportionality test. Article 35(3) provides: "It is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment." Article 55(1) provides:

> Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.

Most but not all states are party to Protocol I; non-ratifiers include the United States. However, these rules have gained the status of customary international law binding all states.[52]

The Protocol I rules apply to "methods or means of warfare" such as types of weapons or the use of fire or water for combat, not to the "attack" addressed by the above-quoted provision of the Rome Statute. In certain respects, the proposed definition of ecocide is less restrictive than the Protocol I rules; notably it requires "severe and *either* widespread *or* long-term damage to the environment," not the presence of all three elements.

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[52] See Jean-Marie Henckaerts and Louise Doswald-Beck, International Committee of the Red Cross, *Customary International Humanitarian Law (*Cambridge University Press, 2005), vol. I, pp. 151-158. The United States, France, and the United Kingdom would have an argument that they have carved out an exception for use of nuclear weapons based on positions they have taken over the years. *Id.*, pp. 154-155.

The crime of ecocide would be an important addition to the Rome Statute. It would reinforce and broaden the existing prohibitions in the Statute, Protocol I, and other international law on actions during armed conflict causing widespread, long-term, and severe damage to the environment. It would also apply during non-international armed conflict. Further and importantly, it would apply to actions taken during peacetime. It would thus potentially cover (as proposed) severe and widespread or long-term damage to the environment caused by climate-warming industrial activity, such as fossil-fuel production and consumption, and by production of nuclear weapons.

The crime of ecocide accordingly would be a unifying concept for climate protection, on the one hand, and non-use and elimination of nuclear weapons on the other. That indeed is true of the concept of ecocide whether or not the crime is added to the Rome Statute in the near future. **The concept can and should serve as a strong linkage in popular consciousness and in policy deliberation between the twin imperatives of averting catastrophic climate change and averting catastrophic nuclear war.**

Since 2015, the existential risks of climate change and nuclear use have both grown at an alarming rate. The imperatives of climate change mitigation and adaptation as well as complete nuclear disarmament are inarguable if we wish to secure a thriving planet and humanity now and for generations to come. Humanitarian disarmament, human rights law, and the concept of ecocide are important components of a strategy to achieve those ends promised by the UNFCCC and the NPT. While the last seven years have seen some positive developments in humanitarian disarmament and climate protection measures, the international community must take concrete and time-bound measures immediately to reverse the hands of the Doomsday Clock[53] and protect human security.

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[53] "At doom's doorstep: It is 100 seconds to midnight," 2022 Doomsday Clock Statement, Science and Security Board Bulletin of the Atomic Scientists, 20 January 2022.