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Nuclear Weapons, the Main Threat to the Environment.

الأسلحة النووية، التهديد الرئيسي للبيئة .

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ABSTRACT:

Nowadays, environmental problems, ever more numerous and more complex, are linked to most other international issues. However, if international cooperation is strengthening, there is no reason to be pessimistic about the future of environmental protection .

It is therefore important to develop synergies, including in the context of the nuclear Non-Proliferation Treaty, and to explore the possibility of complementarity between the instruments, particularly with regard to providing assistance to victims and addressing the natural environment affected by the use or testing of nuclear weapons.

Keywords: *Environment protection , Environmental Treaties, the use of nuclear weapons, International Law, Environmental Remediation.*

ملخص باللغة العربية:

في الوقت الحاضر ترتبط المشكلات البيئية المتزايدة العدد والأكثر تعقيدًا بمعظم القضايا الدولية الأخرى ومع ذلك إذا تم تعزيز التعاون الدولي، فلا داعي للتشاؤم بشأن مستقبل حماية البيئة لذلك من المهم تطوير أوجه التآزر، بما في ذلك في سياق معاهدة عدم الانتشار النووي واستكشاف إمكانية التكامل بين الصكوك، لا سيما فيما يتعلق بتقديم المساعدة للضحايا ومعالجة البيئة الطبيعية المتأثرة بالاستخدام أو الاختبار من الأسلحة النووية.

كلمات مفتاحية: حماية البيئة؛ المعاهدات البيئية؛ استخدام الأسلحة النووية؛ القانون الدولي؛ المعالجة البيئية .

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Introduction:

The issue of environmental protection, which was one of the most significant issues in the 1970s, remains very important in this decade and will continue to be important in the decades to come. The rapid worsening of "global" pollution, as well as the terrible disasters that have multiplied in recent times, such as those of Seveso, Bhopal, Chernobyl and others, help to show whether this was still necessary, that despite increased investment in money and work in most countries, environmental issues are of vital importance and in some cases a matter of extreme urgency. every year that goes by adds to the list of problems that need attention in this area. It has been said and repeated that the protection of our environment is a matter of survival for humanity; it is therefore a matter of planetary scope and, as such, it can only be tackled on an international scale. It is also clear that, in order to cope with the various problems which arise, in order to truly protect the environment and achieve sustainable development, research must be intensified and better directed, and more rational management of the environment and all natural resources

The nature of the damage caused by nuclear weapons is wide-ranging and does not stop at the borders of the country in which the nuclear accident occurred. It affects humans, animals, plants, money and the environment.

From this point of view, nuclear weapons are considered means of killing, destruction and severe burns, and it has become the main concern of experts and scientists is nuclear safety, that is, between how to build or manufacture ultra-secure nuclear reactors and how to treat environments affected by radiation emitted from the illegal use of weapons nuclear.

According to that, the problem related to this study lies in: How effective are the international agreements related to regulating the use of nuclear weapons in combating radioactive

pollution that threatens the environment? And what are the environmental treatments provided for that? We will answer this problem according to the research plan as follows.

THE FIRST TOPIC :
The environmental dimension of the use of nuclear weapons

In this 1st topic we will address , Environment and nuclear weapons in the 1st requirement and nuclear war would ravage the planet's climate in 2nd requirement as follow:

First Requirement: Environment and nuclear weapons

The 21st conference of the parties to the United Nations convention on climate change - COP21 - scheduled for November 30 to December 11, 2015 at Le Bourget, will be "one of the biggest climate conferences ever organized, underline the organizers.

placed under the sign of environmental exemplarity, this conference aims to fight against climate change; the key issue is the financing of climate policies. The major objective is to reduce the emission of greenhouse gases, which is the main factor in global warming[1].

Unfortunately, everything suggests that the main threat to the environment, that of nuclear weapons, will not be taken into account. Any use of nuclear weapons would have absolutely dramatic consequences: it would devastate entire territories and cause permanent damage to the environment.

The explosion of nuclear weapons would not produce a warming but a cooling of the Earth's temperature. Dust from

1 The Paris Agreement united nation climate change, article in this website ***https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement*** last seen 01/08/2022 9am

mushroom clouds and smoke from fires, by absorbing sunlight, would reduce the amount of solar radiation reaching the earth's surface, causing darkening and cooling[1].

The 1970 nuclear Non-Proliferation Treaty is an important mechanism for halting the production of nuclear weapons and their resulting environmental impacts. The NPT, by constraining the continued development of nuclear weapons, can act as a means to prevent further radioactive contamination to the environment[2].

The production of nuclear weapons has created not only the threat of nuclear destruction on an immediate level through nuclear war, but also on a continual and protracted level through the creation of nuclear waste. The 'clean up' and environmental restoration of the US DOE's nuclear weapons complex (and other nuclear facilities worldwide) is regarded as one of the most costly and difficult projects ever undertaken. New technologies will need to be developed in order to retrieve radioactive materials which have been released into the environment either through accident or by design. The dumping of nuclear wastes into bodies of water as well as the burial of radioactive materials is particularly troubling[3].

In the United States, major water systems including the Columbia River, Savannah River and the Snake River aquifer have been contaminated. From 1945 until 1970, coolant waters from nuclear reactors at the Hanford Reservation in Washington

1 Nuclear weapons, the main threat to the environment , in this website ***https://translate.google.dz/?hl=fr&sl=fr&tl=en&text=L%27arme%20nucl%C3%A9aire%2C%20principale%20menace%20sur%20l%27environnement&op=translate*** last seen 01/08/2022 3pm

2 Reviewing the Nuclear Non-proliferation Treaty 1970

3 Environment and nuclear weapons in this website: ***https://www.reachingcriticalwill.org/resources/fact-sheets/critical-issues/4734-environment-and-nuclear-weapons*** Last seen 02/08/2022 10pm

State were routinely discharged into the Columbia River. In 1991, the General Accounting Office published a document which stated that 444 billion gallons of liquid radioactive wastes, from coolant waters to radioactive liquids, were discharged into the environment from the Hanford site alone[1].

Hanford is also host to the infamous 'tank farm' where millions of gallons of highly radioactive and toxic waste are contained in 177 tanks. Approximately 50 of these tanks present an immediate threat of explosion due to a gaseous build-up of a variety of chemical constituents and their decay products. Some tanks have already ruptured and their radioactive contents have leaked into the ground[2].

Most of the radiation risks from nuclear explosions come from short-lived radionuclides outside the body. These are generally confined to a place towards the wind from the point of the weapon's explosion. This radiation risk is due to fragments of radioactive fission that has half-life from seconds to months, and from soil and other materials located near the radioactive explosion resulting from the high neutron flow.

Most particles degrade rapidly. However, outside the explosion radius of explosive weapons will be available in areas or hotspots that survivors have not been able to enter as a result of radioactive contamination from long-term isotopes such as strontium 90 or cesium 137. For nuclear war survivors, this risk

1 Sam Drevo, Hanford ND the River, Produced by Columbia River keeper, p9, article in this website: ***https://www.columbiariverkeeper.org/sites/default/files/2011/10/hanford_and_the_river_final2.pdf*** last seen 03/08/2022 6pm

2 Hanford Tank Waste, 40 years of plutonium production at Hanford created large amounts of radioactive and chemically hazardous waste, for more information try to visit this article in this website : ***https://www.oregon.gov/energy/safety-resiliency/Pages/Hanford-Tank-Waste.aspx*** last seen 03/08/2022 9pm

of permanent radiation may be a serious threat for 1 to 5 years after the attack[1].

Exposure to radiation can alter the DNA within the genes of humans, plants, and animals, with dire effects. According to a 1996 article in "Environmental Health Perspectives," radiation-induced genetic mutations led to the emergence of cancerous tumors within the bombing survivors of Hiroshima and Nagasaki. Gene mutations can also reduce reproductive ability and cause strange changes in the appearance of offspring, such as extra limbs, as well as affect the eggs and larvae of marine organisms that live in radioactive seawater, especially vulnerable to the genetic mutation, as National Geographic showed in 2011[2]

Second Requirement: Nuclear war would ravage the planet's climate

The immediate and longer-term humanitarian and environmental consequences of nuclear weapons use and testing continue to be subject to scientific scrutiny, with emerging evidence and analysis inter alia of the sex- and age-differentiated impacts of ionizing radiation on human health[3] the long-term impacts of nuclear weapons testing on the

1 Mary Dowd, How Nuclear Bombs Affect the Environment, in this website ***https://education.seattlepi.com/nuclear-bombs-affect-environment-6173.html*** last seen 04/08/2022 2pm

2 Carl Sagan, Richard Turco, a path where no man thought: nuclear winter and its Implications In this website: ***https://www.atomicarchive.com/science/effects/radioactive-fallout.html*** last seen 04/08/2022 5pm

3 Mary Olson, "Disproportionate impact of radiation and radiation regulation", Interdisciplinary Science Reviews, 2019: ***https://www.tandfonline.com/doi/full/10.1080/03080188.2019.1603864,*** presented to the ICRC and IFRC expert meeting in Geneva on 2 March 2020.

environment[1], including on mortality and infant mortality rates the consequences of a nuclear war on the global climate, food security ocean acidification[2], as well as evidence and analysis of regional preparedness and response measures to nuclear testing. While there are some aspects of these impacts that are not fully understood and require further study, these scientific studies reveal new and compelling evidence of long-term harm to human health and the environment from the use and testing of nuclear weapons[3].

There is a particular need for continued and scaled-up efforts to research and understand the humanitarian and environmental consequences of nuclear weapons testing. Communities in former nuclear testing areas – including the Marshall Islands, Kazakhstan[4], Algeria and the United States– continue to be affected today by the impacts of ionizing radiation released from nuclear tests that occurred decades ago, which also conflict with the Vienna Convention for the Protection of the Ozone Layer of 1985, especially the first paragraph of Article Two of it, from which it is concluded that

1 Maveric *K*.I.L. Abella et al., "Background gamma radiation and soil activity measurements in the northern Marshall Islands" last seen 05/08/2022 6pm

2 Nicole S. Lovenduski et al., "The Potential Impact of Nuclear Conflict on Ocean Acidification", Geophysical Research Letters, 2020: ***https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2019GL086246*** last seen 05/08/2022 7pm

3 Beyza Unal, Patricia Lewis and Sasan Aghlani, "The Humanitarian Impacts of Nuclear Testing: Regional Responses and Mitigation Measures", Chatham House, 2017: ***https://www.chathamhouse.org/publication/humanitarian-impacts-nuclear-testing-regional-responses-and-mitigation-measures.*** last seen 05/08/2022 10pm

4 Wudan Yan, "The nuclear sins of the Soviet Union live on in Kazakhstan", Nature, 2019: ***https://www.nature.com/articles/d41586-019-01034-8***. last seen 05/08/2022 11pm

states parties take measures to protect human health and the environment[1].

Many communities report that they do not have sufficient information about their own history of exposure, the current risks of living in a radioactively contaminated area and the intergenerational risks associated with radiation exposure[2]. A lack of transparency and a failure to take the perspectives, lifestyles and needs of communities into account are barriers that need to be overcome in future research efforts.

Proof of the foreseeable impacts of a nuclear explosion is an integral part of an assessment of the risks linked to nuclear weapons. Although nuclear weapons have not been used in armed conflicts since 1945, there have been a disturbing number of close -up calls in which nuclear weapons have been almost inadvertently used as a result of miscalculation or errors

During the three conferences on the humanitarian impacts of nuclear weapons in 2013 and 2014, it was demonstrated that the risks of a nuclear weapon detonation, whether by accident, miscalculation or design, stem notably from:

- 1/the vulnerability of nuclear weapon command-and-control networks to human error and cyber attacks

1 Tourkia Rebhi, Ilyas Bouderbala, The French nuclear crime in the Algerian Sahara from the perspective of the rules of international law, Journal of Legal and Social Sciences, Volume 7, Issue 2 p13

2 Masaki Koyanagi, presentation to the Second International Conference on the Humanitarian Impact of Nuclear Weapons, 2014: ***https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/nayarit-2014/statements/Hibakusha-Koyanagi.pdf,*** giving the perspective of a third-generation hibakusha. The Radiation Effects Research Foundation (RERF) is currently carrying out a research programme on the children of atomic-bomb survivors.

- 2/the maintaining of nuclear arsenals on high levels of alert, with thousands of weapons ready to be launched within minutes

- 3/the dangers of access to nuclear weapons and related materials by non-state actors[1].

For as long as nuclear weapons exist, the risk of an inadvertent, accidental or deliberate detonation remains. Until their elimination, vigilance and prudent decision-making in nuclear policies are therefore of the utmost priority. Responses that policy-makers and the military should consider include buying time for decision-making, particularly in crises; developing trust and confidence-building measures; refraining from large-scale military exercises during times of heightened tension; involving a wider set of decision-makers in times of crisis; and improving awareness and training on the effects of nuclear weapons which pose the single biggest threat to the Earth's environment, scientists have warned.

In a new study of the potential global impacts of nuclear blasts, an American team found even a small-scale war would quickly devastate the world's climate and ecosystems, causing damage that would last for more than a decade.

Speaking at the American Geophysical Union's meeting in San Francisco yesterday, Richard Turco of UCLA said detonating between 50 and 100 bombs - just 0.03% of the world's arsenal - would throw enough soot into the atmosphere to create climactic anomalies unprecedented in human history.

1 Patricia Lewis et al., "Too Close for Comfort: Cases of Near Nuclear Use and Options for Policy", Chatham House, 2014: ***https://www.chathamhouse.org/publications/papers/view/199200.*** last seen 06/08/2022 11pm

He said the effects would be "much greater than what we're talking about with global warming and anything that's happened in history with regards volcanic eruptions".

According to the research, tens of millions of people would die, global temperatures would crash and most of the world would be unable to grow crops for more than five years after a conflict.

In addition, the ozone layer, which protects the surface of the Earth from harmful ultraviolet radiation, would be depleted by 40% over many inhabited areas and up to 70% at the poles.

which means Nuclear weapons are the greatest environmental danger to the planet from humans, not global warming or ozone depletion[1]

THE SECOND TOPIC

The relevance of environmental law for nuclear weapons

In this second topic we will address the relevance of environmental law for nuclear weapons in the 1st requirement and Environmental remediation in the context of nuclear weapons in the 2nd requirement as follow :

The first requirement: Nuclear testing process and Its effects on environment

1/ international humanitarian law and the environment

The most common approach to analyzing the environmental regulation of nuclear weapons under international law has been through the lens of IHL. This has resulted in detailed assessments of the environmental coverage of some jus

1 Climate threat from nuclear bombs in this website ***https://www.theguardian.com/environment/2006/dec/12/nuclearindustry.climatechange*** last seen 07/08/2022 5pm

in bello instruments and rules. The IHL approach centers on Articles 35(3) and 55 of the 1977 Additional Protocol I and on customary international law, as well as the proscription of a certain level of harm to the environment during hostilities under international criminal law.

Regarding the continued application of general environmental law treaties during situations of armed conflict, in its Nuclear Weapons Advisory Opinion the ICJ rejected the challenge by certain NWS but stated its view that:

the issue is not whether the treaties relating to the protection of the environment are or are not applicable during an armed conflict, but rather whether the obligations stemming from these treaties were intended to be obligations of total restraint during military conflict. …

The Court does not consider that the treaties in question could have intended to deprive a State of the exercise of its right of self-defense under international law because of its obligations to protect the environment[1].

2/ Nuclear weapons and environmental treaties

However, resort to nuclear weapons presupposes their production, testing, stockpiling, transportation, and deployment before actual use in hostilities. International law governs parts of this more complex regulatory object in ways that have, thus far, attracted less attention.

1 Christopher Greenwood, The Advisory Opinion on nuclear weapons and the contribution of the International Court to international humanitarian law, INTERNATIONAL REVIEW OF THE RED CROSS, Article in this website: ***https://international-review.icrc.org/sites/default/files/S00208604000 8431Xa.pdf*** last seen 07/08/2022 7pm

Only nine states possess nuclear weapons, but these states represent 47% of the world's population and 28% of the earth's land area. These nine states are currently not covered by the NPT's comprehensive prohibition of NNWS producing or otherwise acquiring nuclear weapons. These states include the five recognized NWS under the NPT, as well as DPR Korea, India, Israel, and Pakistan, which are not party to the NPT.

But though these states are not bound by multilateral treaty obligations that explicitly and comprehensively prohibit acquisition, transfer, production, development, or stockpiling, this does not mean that environmental law is irrelevant to these states' activities involving nuclear weapons. All stages of the 'life-cycle' of nuclear weapons may cause pollution of the environment, not only through radioactive substances but also through hazardous chemicals used in producing and maintaining these weapons.

Environmental treaties can be distinguished according to the environmental sphere they are designed to protect: atmosphere (air quality, ozone layer, climate change), hydrosphere (marine and fresh water), lithosphere (land and mineral resources), and biosphere (life in any of the other spheres).

Radiological contamination stemming from nuclear weapon-related activities can occur in any of these four spheres and typically spreads to all of them through ecological cycles, air and water currents, and through migratory species. The state from whose territory the nuclear weapon pollution originates may thus be found in breach of a treaty that protects the affected spheres, or of corresponding norms of customary international

law[1]. Thus, it is argued that nuclear weapon states might be subject to environmental litigation or non-compliance procedures for breaching their international environmental obligations, even absent nuclear detonation.

3/ Testing of nuclear weapons

Beyond these broader disarmament obligations, arguably a ban on atmospheric testing of nuclear weapons has now crystallized into customary international law. The same cannot, though, be said so easily with respect to underground testing. But the Rarotonga, Bangkok, Pelindaba and Semipalatinsk Treaties (discussed further below) obligate states parties not to conduct nuclear tests and require them to prevent such tests in their territories. They do so regardless of test yield, and whether tests are conducted in the atmosphere or underground[2].

Moreover, already under the 1959 Antarctic Treaty any activity involving nuclear weapons, such as their testing, stockpiling, deployment, or launching in or from Antarctica is prohibited;[3] similar prohibitions apply by treaty to nuclear

1 pollution originating in nuclear weapon-involving activities of one state can be found to have an impact on another state's territory. this constutes a classic example of trans boundary pollution to which the principle of no harm and the prevention principle codified in Principle 21 of the 1872 Stockholm Declaration on the Human Environment and Principle 2 of the 1992 Rio Declaration on Environment and Development, would apply. Both principles are of a customary nature when the harm is significant. Relevant procedural rules under the umbrella of the well-established duty to cooperate in dude the conventional and customary duty to notify and the duty to conduct an environmental impact assessment. See ICJ Pun Mills on the River Uruguay (Argentina Uruguay), Judgment, 20 April 2010

2 Art. 18 of the Treaty of Tlatelolco allows nuclear explosions for peaceful purposes, but regional states and the nuclear powers have interpreted this provision as prohibiting all explosions.

3 According to Art. I(1): ‘There shall be prohibited, inter alia, any measure of a military nature, such as the establishment of military bases and

weapons in outer space[1] and on the sea bed[2].

Second Requirement: Environmental remediation in the context of nuclear weapons

While past treaties offer general principles for how to approach clearing remnants of war, remediation of nuclear contamination raises a number of distinct concerns, particularly related to the geographic and temporal scope of harm. Nuclear weapon explosions release dangerous levels of long-lasting ionizing radiation over a wide geographic area. Impacted areas can remain highly contaminated since radioactive isotopes have half-lives that vary from hours to millennia. Nuclear fallout can continue for years after an explosion and carry radioactive isotopes beyond the immediate site of the explosion. The reach of the radiation depends on the intensity of the weapon used and weather patterns but can extend for thousands of square kilometers.

Contamination from nuclear use or testing also adversely affects the entire ecosystem, including plants, animals, and food. Nuclear fallout and the results of thermal radiation can render large tracts of land unusable, interfering with the ability to grow crops and raise livestock. The radiation in wildlife can also make it too dangerous to hunt and fish, meaning only imported food is safe to consume. Living in a contaminated environment or eating contaminated plants or animals can cause health

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fortifications, the carrying out of military man oeuvres, as well as the testing of any type of weapon.' Under Art. V, 'Any nuclear explosions in Antarctica and the disposal there of radioactive waste material shall be prohibited.'

1 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies

2 1970 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil Thereof.

effects, such as cancer, birth defects, and infectious diseases. Although environmental remediation measures cannot reverse all of this harm, they can make a tangible difference by addressing them as effectively and completely as possible[1].

Environmental Provisions in Other Nuclear Weapons-Related Instruments

Before proceeding to discuss the meaning of 'remediation', as a first observation, the TPNW is not the first nuclear weapons-related treaty to incorporate obligations addressing environmental damage caused by nuclear weapons-related activities. In fact, certain nuclear weapon-free zone (NWFZ) treaties incorporate provisions designed to protect the environment by prohibiting the dumping of radioactive waste at sea, though admittedly without requiring state parties to address contamination from *past* radioactive waste disposal or dumping activities[2]

More importantly, however, one existing NWFZ, the Treaty on a Nuclear-Weapon-Free Zone in Central Asia (Treaty of Semipalatinsk) adopted in 2006, explicitly includes the need for state parties to assist in efforts to address environmental damage resulting from nuclear weapon-related activities—though adopting a slightly different formulation[3]. Under Article 6 of the Treaty of Semipalatinsk:

Each party undertakes to assist any efforts toward the environmental rehabilitation of territories contaminated as a result of past activities related to the development, production or

1 Environmental Remediation under the treaty on the prohibition of nuclear weapons, IHRC, April 2018 in this website : ***http://hrp.law.harvard.edu/wp-content/uploads/2018/04/Environmental-Remediation-short-5-17-18-final.pdf last seen 08/08/2022 8pm***

2 See., Treaty on the Nuclear-Weapon-Free Zone in Africa, Art. 7

3 Treaty on a Nuclear-Weapon-Free Zone in Central Asia (2006) 2970 UNTS.

storage of nuclear weapons or other nuclear explosive devices, in particular uranium tailings storage sites and nuclear test sites.

The inclusion of such an environmental security provisions was of particular significance to state parties in Central Asia given the 456 nuclear weapons test that took place at the Semipalatinsk test site in Kazakhstan by the former Soviet Union between 1949 and 1989[1].

However, this provision is significantly more limited than the obligation imposed by Article 6(2) of the TPNW because it only requires states to assist in environmental rehabilitation in response to an initial request for such assistance by another state party within the region.

Despite adopting a similar formulation in the 22 May draft, the final TPNW text, by contrast, obligates affected states parties themselves to undertake and implement measures domestically to remediate contaminated environments 'under its jurisdiction or control', while creating a system of collective responsibility and cooperation towards implementing the TPNW generally, including Article 6(2), by requiring each state party 'in a position to do so' to provide technical, material, or financial assistance to affected parties[2].

For present purposes, however, the most interesting difference between Article 6 of the Treaty of Semipalatinsk and Article 6(2) of the TPNW is the contrasting use of the terms 'rehabilitation' and 'remediation' of areas contaminated by the testing and use of nuclear weapons, respectively in each agreement. Naturally, this point of difference raises the question whether there is any substantial difference in terms of the meaning and objectives of each concept – remediation and rehabilitation—in the present context.

1 The Soviet Union's Nuclear Testing Programme, Comprehensive Nuclear Test-Ban Treaty Organisation Preparatory Committee in this website, ***https://www.ctbto.org/nuclear-testing/the-effects-of-nuclear-testing/the-soviet-unionsnuclear-testing-programme/***. Last seen 10/08/2022 6pm

2 See specifically TPNW, Arts. 7(3), 7(4), and 7(6)

Steps of Environmental Remediation

Affected states should begin by creating a national plan and assessing, surveying, and recording the problem, although plans and assessments may need to be updated over time. Affected states should also conduct an optimization analysis in which they evaluate different options and implement the one that produces the greatest benefit to affected communities and the environment. The analysis should take into account environmental, human health, social, cultural, and economic considerations as well as the preferences of affected communities and other stakeholders.

Affected states should ensure risk education is available. They should break, disrupt, or remove pathways by which people are exposed to contamination, such as through marking and fencing and controlling food and water sources. If robust remediation is necessary and appropriate, they should address the contamination itself through containment and other treatment measures. Taking care during handling, transport, and removal of waste as well as long-term site management is also critical.

Handling of Information

Affected states should collect and disseminate information about affected sites and communities and remediation measures, and preserve it for the conceivable radiological life of the contaminated waste.

Guiding Principles

Affected states should meaningfully consult with and actively involve affected communities, their representative organizations, nongovernmental organizations, and other stakeholders at all stages of the remediation process. They

should adhere to the principle of non-discrimination and ensure transparency of the process.

TPNW states parties should take advantage of next week's 1MSP to make concrete commitments to begin the process of operationalizing the treaty's positive obligations. But in the intercessional period and beyond, they should start looking to the future and develop a long-term framework for environmental remediation and victim assistance. The IHRC-CEOBS principles and commentaries provide in-depth and well-grounded guidance for that endeavor[1].

Conclusion :

The use of nuclear weapons results in deadly nuclear radioactive contamination, which is the most dangerous. nuclear weapons do not only affect humans, but also their living environment; It can seep into humans and living entities with ease and ease. this characterizes the widespread spread of pollution, which makes it difficult to control .

In summary, it should be noted that there is no unequivocal and explicit rule under international law against the use of nuclear weapons, although, in particular, LIH considerably limits the possibility of legal use. With regard to the possession, production and storage of nuclear weapons, a certain number of regimes constitute major regulatory

1 Bonnie Docherty Addressing Nuclear Weapons Contamination: New Principles for Environmental Remediation in this website : ***https://hrp.law.harvard.edu/arms-and-armed-conflict/addressing-nuclear-weapons-contamination-new-principles-for-environmental-remediation/*** last seen 11/08/2022 9am

executives who have prevented nuclear proliferation. Unlike other legal regimes concerning the weapons of mass destruction, which have been prohibited because it is assumed that their use cannot comply with the requirements of the DIH, the use of nuclear weapons, production, transfer and at possession is not explicitly prohibited. Disarmament obligations on nuclear weapons remain disputed and remain difficult to apply.

List of reference :

A) International treaties and conventions :

- Treaty on the Nuclear-Weapon-Free Zone in Africa, Art. 7
- Treaty on a Nuclear-Weapon-Free Zone in Central Asia (2006) 2970 UNTS.
- specifically TPNW, Arts. 7(3), 7(4), and 7(6)
- 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies
- 1970 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil Thereof.
- Art. 18 of the Treaty of Tlatelolco allows nuclear explosions for peaceful purposes, but regional states and the nuclear powers have interpreted this provision as prohibiting all explosions.

- According to Art. I(1): 'There shall be prohibited, inter alia, any measure of a military nature, such as the establishment of military bases and fortifications, the carrying out of military man oeuvres, as well as the testing of any type of weapon.' Under Art. V, 'Any nuclear explosions in Antarctica and the disposal there of radioactive waste material shall be prohibited.'

B) Journal article :

- Tourkia Rebhi, Ilyas Bouderbala, The French nuclear crime in the Algerian Sahara from the perspective of the rules of international law, Journal of Legal and Social Sciences, Volume 7, Issue 2 p13

C) Seminar article:

- Masaki Koyanagi, presentation to the Second International Conference on the Humanitarian Impact of Nuclear Weapons, 2014: ***https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/nayarit-2014/statements/Hibakusha-Koyanagi.pdf***, giving the perspective of a third-generation hiba kusha. The Radiation Effects Research Foundation (RERF) is currently carrying out a research program on the children of atomic-bomb survivors.

D) Internet websites:

- Christopher Greenwood, The Advisory Opinion on nuclear weapons and the contribution of the International Court to international humanitarian law, INTERNATIONAL REVIEW OF THE RED CROSS, Article in this website ***https://international-review.icrc.org/sites/default/files/S002086040008431Xa.pdf*** last seen 07/08/2022 7pm

- THE TREATY ON THE PROHIBITION OF NUCLEAR WEAPONS , IHRC, April2018 in this website ***http://hrp.law.harvard.edu/wp-content/uploads/2018/04/Environmental-Remediation-short-5-17-18-final.pdf*** last seen 08/08/2022 8pm

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