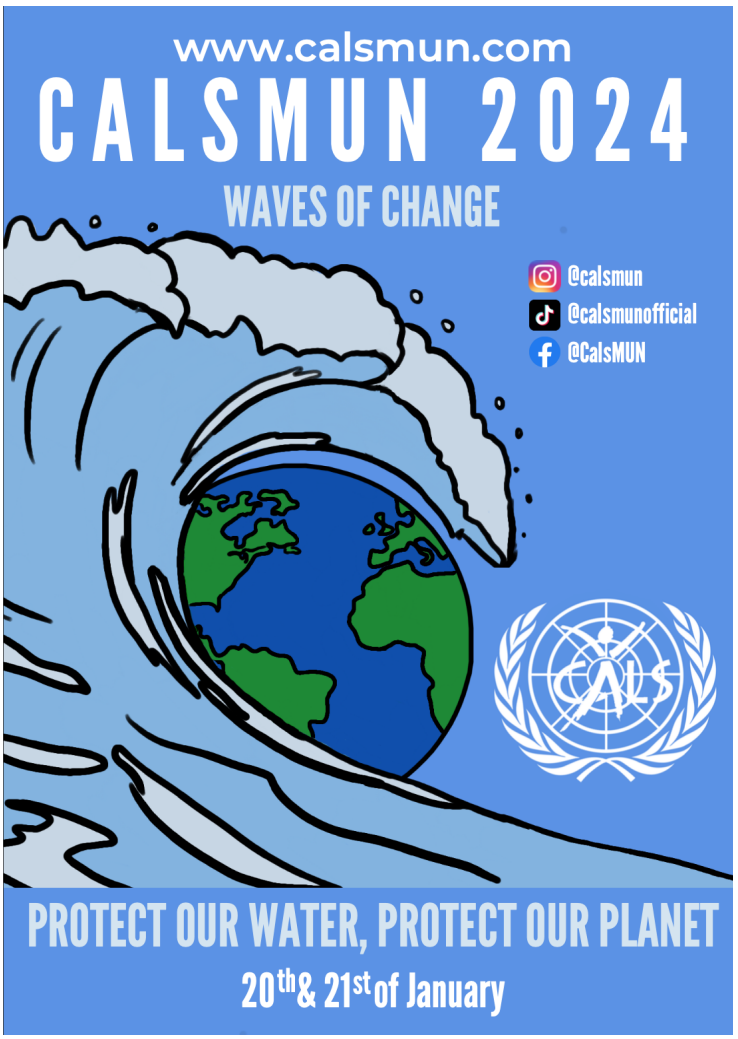


Waves of Change

CalsMUN 2024

Research Report

Forum: General assembly 1

Issue: Assessing the Risks Posed by Nuclear Weapons Proliferation to Global Water Security

Chairs: Medea Beridze, Vincent Esser and Oliver McCafferty

Introduction

Nuclear weapons are arguably the most dangerous weapons that nations possess in their military arsenals. These Uranium infused warheads have the ability to wipe out entire cities on their own and so it is imperative that the use of these weapons are conducted in a safe manner. With the proliferation of nuclear weapons, this becomes increasingly difficult to regulate and maintain therefore increasing the potential risk of global security. Moreover, proliferation of nuclear weapons means an increase in the amount of testing conducted. These weapons are often tested in global waters in which although the lives of humans aren't put at risk, the security of waters diminishes as testing becomes more frequent. Not only does water security diminish but the impact on marine life as well as nearby infrastructure is also significant. Marine life in particular is heavily affected due to nuclear testing as these weapons often leave oceans radioactive as well as altering the temperature of the water. These two factors completely change the environments of different marine life leading to numerous deaths if these animals aren't able to adapt to these conditions. Since the Nuclear bomb's inception there have been over 2000 occurrences of its use and with the proliferation of more and more of these weapons it gives reason to believe that this figure may also increase. The testing of nuclear bombs may not always directly affect oceans however the majority of nuclear waste is either deposited underground or disposed of via illegal dumping into the ocean. If the disposal of nuclear waste isn't properly regulated the risks posed by nuclear weapons and waste could become uncontrollable. One very tense time regarding nuclear weapons was during the Cold war between the USA and USSR when a Mutually Assured Destruction (MAD) theory emerged. This theory that one superpower would feel at ease and more comfortable if they had the same capability to destroy their enemy as they had to destroy them, meant that the production of nuclear weapons was ramped up. With more weapons being produced by both powers in an attempt to match each other's military strength, tensions over the potential deployment of these weapons grew steeply. More weapons made it increasingly difficult to store them and to regulate that they weren't going to be used aggressively. The world's nuclear arsenal grew from a mere 3,000 weapons in 1955 to around 60,000 in the late 1980s which shows the extent to which production of these weapons went out of control. Following this rapid increase in the number of weapons, many treaties were conjured up to ensure the safety of Global waters, developing countries and more however not all nations signed to these treaties which meant that the risk that these nuclear weapons had are actually still prevalent in society. This stresses the importance of assessing them to ensure the safety of many different areas.

Definition of Key Terms

Nuclear Proliferation

Nuclear proliferation is the spread and rapid increase in the number of nuclear weapons in nations or organizations around the globe. This term can also be used to refer to the possible acquisition of nuclear weapons by terrorist organizations or other armed groups.

Global Water Security

Global water security refers to the capacity to protect the sustainable availability of, access to, and safe use of an adequate, reliable and resilient quantity and quality of water for health, ecosystems and productive economies.

Mutually Assured Destruction Theory (MAD Theory)

The Theory of Mutually assured destruction is the principle of deterrence founded on the notion that a nuclear attack by one superpower would be met with an overwhelming nuclear counterattack which would then lead to both the attacker and defender being annihilated.

Uranium

A radioactive element essential for the production of nuclear warheads and as fuel in nuclear reactors.

Radioactive contamination

Radioactive contamination is the disposition of or presences of radioactive substances on surfaces, liquid, or gases where their presences is unintended. This can also occur in humans which will often lead to symptoms including nausea and vomiting within the first few hours leading up to potential death over the following days or weeks. The largest example of this was in Chernobyl where over 4,000 people are projected to eventually die as a result of the radiation exposure.

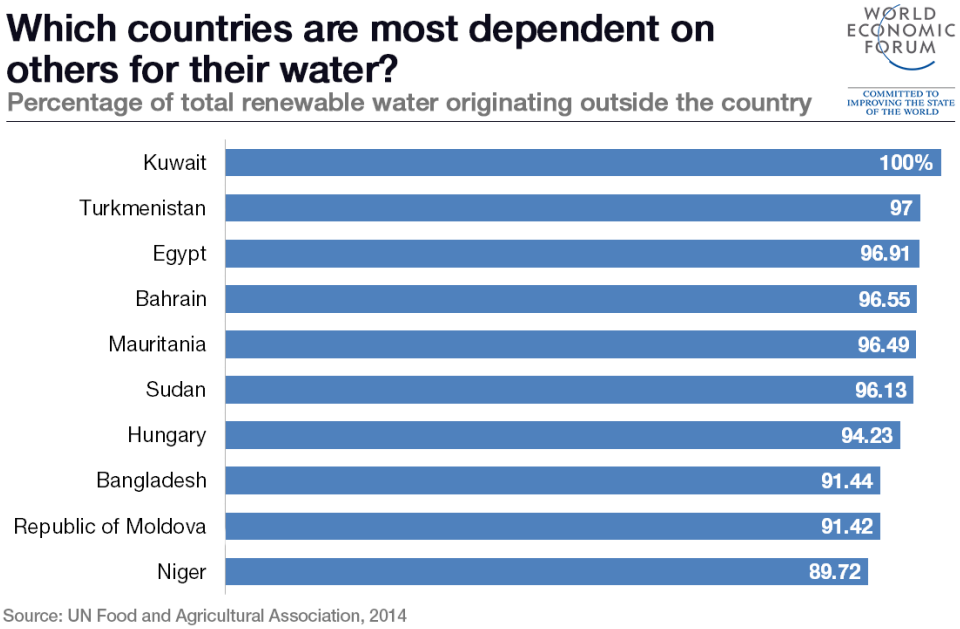
Radioactive decay

Radioactive decay is the process in which a radioactive atom spontaneously gives off radiation in the form of energy or particles to reach a more stable state. A spontaneous release of radiation can be extremely dangerous if on a large scale, for example what happened in Chernobyl in 1986 which has still contaminated the region to this day.

General Overview

Nuclear weapons have been and still are some of the most destructive weapons that we possess and so naturally they possess many risks. In the case of global water security, nuclear weapons and their proliferation, risk contaminating waters, disrupting hydrological systems and damaging critical infrastructure to name only a few. One of the most significant risks is the aforementioned danger of contaminating waters, affecting global water security. Contaminating the very waters that we live off as well as the environment that marine life find themselves in is extremely detrimental to global security. Through nuclear weapons testing or accidents, oceans can become contaminated which poses severe health risks to ecosystems, aquatic life and human populations. This is an already extremely important issue and with the further proliferation of nuclear weapons the issue only grows larger and becomes harder to regulate. Another significant risk that nuclear weapons pose to global water security is that they can disrupt the essential industries to the economies of nations

around the globe. Agriculture and tourism for example are two industries that nations like Palau rely upon to sustain their economies and so a potential nuclear event and the damage that it may cause could slow these industries down or even grind them to a complete halt which would be terrible for these nations.



The image above represents the countries that are most reliant on others for their water supply, with developing nations struggling the most. Seeing as these nations are already dependent on others for their water supplies, it stresses the impact that a potential nuclear event could have on these nations and global water security. If a nuclear event were to happen, these nations wouldn't be able to access the water that they need and so the economies of these nations would crash. Following crashing economies would mean a lack of healthcare support which would then consequently lead to the deaths of thousands of people due to their inability to have sufficient water supply. The number of consequences that nuclear weapons can have on global water security as well as developing nations, only highlights the importance of assessing the risks that these weapons have, and acting in accordance with them to ensure that these horrific things don't occur.

History

In 1942 the United States began the Manhattan project. This was a classified project in which the United States would attempt to build the first nuclear weapon. This was due to the major scientific breakthroughs in 1930. With the development of nuclear fission and fusion. This proved the potential to harness huge amounts of energy from a single reaction, however it also provided the opportunity to develop a new kind of weapon, one which would have a greater destructive capability than anything that had come before it. This damage capability was flaunted by the United States in 1945. On August the 6th the first of 2 atomic bombs were dropped on Japan. The first being on Hiroshima, this nuclear blast killed an estimated 140,000 people. 3 days later on august the 9th the second nuclear bombshell was dropped on

Nagasaki. The primary death count was large, but the secondary death count was also major as many people died due to things such as radiation positing and cancer due to the exposure to radiation. As the Cold War began developing, on July 29th, 1957, the International Atomic Energy Agency (IAEA) was formed. The goal of this governing body was to oversee the peaceful use of nuclear weapons. It is said that President Eisenhower's "atoms for peace" speech in 1953 was a catalyst in the eventual formation of the agency. Another major event was the Cuban missile crisis which occurred in October 1962. After the US found out that the soviets had missiles pointing at them in Cuba. The US then enacted a 'naval quarantine', this essentially meant that the US had Cuba surrounded and was demanding for the dismantling of the missiles, in exchange for the removal of missiles near the Soviet Union and a formal declaration that the US wouldn't attack Cuba. All parties agreed and all agreements were enacted. This moment was the closest the world has come to nuclear war.

Technology

The development of technology has been a critical factor in the development of nuclear proliferation. Ultimately as the development of nuclear science has progressed, it comes with a set of challenges. There has been a significant increase in the availability of technology. As nations have developed, so too have their capabilities to develop, store and use nuclear weapons. Previously it was only the US and eventually Russia that had access to nuclear weapons, with the Americans being the first to develop them after scientific breakthroughs in the 1930s. However, nuclear weapons haven't just become simply a tool, historically nuclear weapons have been used as political pawns, in order to aid discussion and international relations. Thus, as nuclear weapons have become relatively more available, combined with their increased use as a facilitator in political discussion, you have a scenario in which nuclear proliferation can occur. Naturally a nuclear disaster would pose a major threat to the world's global water supply. If a smaller scale disaster were to occur such as in Hiroshima, the threat of pollution of natural water sources is imminent. It's not just in the event of a disaster that nuclear pollution may occur. If countries are ill equipped to store and more specifically dispose of nuclear waste, then this can cause very toxic pollutants to leak into the world's water sources. This may cause major harm to the global community and hampers the development of the United Nations sustainable development goal number 6, being 'clean water and sanitation for all'. This is a major threat posed by nuclear proliferation.

Timeline of Key Events

Date	Event
13th August 1942	The Manhattan project began
6th- 9th of August 1945	Bombs were dropped on Hiroshima & Nagasaki.
The 29th - 30th of July 1957	The Formation of the IAEA
15th – 28th October 1962	Cuban Missile Crisis
12th of June 1968	UN treaty to prevent spread of nuclear weapons
The 18th of May 1974	India gains nuclear weapons
The 7th - 8th of July 2017	UN adopts a nuclear weapons ban treaty

Major Parties Involved

United States

The United States is one of the global players when it comes to nuclear weapons. The US has the second most nuclear warheads in the world behind Russia. Their involvement in politics regarding nuclear weapons historically has been extensive. They have had major influence in the decision making of the UN through not participating in certain signatories or holding power through negotiation. Moreover, the handling of the Cold War ultimately shaped the way nuclear politics are carried out to this day, and the concurrent effects of the Cold War led to key structures and governmental and non-governmental bodies being set up, which ultimately shape the way our world is organized.

Russia

Russia holds the most nuclear weapons as of this moment and much like the US hold major bargaining power when it comes to negotiations regarding nuclear weapons. Russia's invasion of Ukraine provides a major talking point in regards to the management of politics and relations surrounding conflict. To some degree there was a threat of nuclear involvement however most of that threat has been chalked up to sensationalism. Ultimately despite the vast arsenal of nuclear weapons which Russia has at their disposal. Due to the concept of nuclear parity and mutually assured destruction (MAD), ultimately it is ensured among global powers that nuclear threat is unlikely. To put it simply, due to the large amount of nuclear proliferation which has occurred, any P5 member nation and others included have access to nuclear weapons. So, they would simply fire back.

Possible solutions

Seeing as this issue is a current and ongoing one there are many possible solutions to this issue. Nations developing more warheads, be that nuclear or non-nuclear, will always increase tensions and spread fears of their uses. Despite this there are a number of potential ways in which this fear as well as the risks can be removed, ensuring the security of different sectors can be maintained. In previous years many treaties have been signed, however the issue still looms making it difficult to identify the most effective solution to this problem. Some alternative ideas for solutions to this pressing issue include:

- Strengthening international Non-Proliferation Agreements
- Promoting disarmament
- Increasing the transparency of weapons production
- Improving water resource management

There are many more potential ways of solving this issue however due to the fact that this problem is ongoing and has been for over 70 years, there is no definitive idea of which direction to focus on with regards to limiting and assessing the risks posed by nuclear weapons proliferation on global water security.

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