Committee: Environmental Commission Sub-Commission 1

Issue: Environmental consequences of producing Weapons of Mass Destruction (WMD)

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INTRODUCTION

Geopolitical risks and economic tensions among the world's major powers are resulting in a less cooperative environment hindering collective action and progress on major global issues. Among these issues are environmental risks, which dominated the results of the World Economic Forum Global Risks Perception Survey for 2019. Environmental-related risks include man-made disasters, which, among other things, consist of the use and testing of weapons of mass destruction (WMD). Ethnic conflict has impacted the use of WMDs in the affected regions due to their accessibility in relation to conventional weapons.

WMDs are one of the biggest threats in our modern-day society. Nuclear, Chemical, and Biological weapon all comprise this category of weapons. Through wars, our world has experienced the use of these weapons and its devastating effects on our civilization and our society. The environmental consequences of these weapons differ depending on the weapon, but the overall environmental damage is significant. From their creation, such weapons have always troubled our society regarding the effects that they can have on nations and regions. WMDs are usually targeted toward humans without the consideration of the environmental effects that will follow from the attacks. Man-made structures, natural habitats, and the biosphere can all be affected by weapons of mass destruction. There have been several cases where such weapons have been utilized in warfare.

It is highly important to understand the severity of this issue and how attempts, in order to solve this, are minimal. Even though nations and organizations have attempted to limit or prohibit weapons of mass destruction and their production, many steps need to be taken in order to combat such weaponry and their environmental consequences.

DEFINITION OF KEY TERMS

Weapons of Mass Destruction (WMD)

Weapons of mass destruction, or more commonly known as WMDs, are weapons or objects have the capacity to cause destruction on an immense scale to a specific region, destroying man-made structures, natural structures, and the biosphere. WMDs consist of chemical, biological and nuclear weapons.

Chemical Weapons

Chemical weapons are armaments that use chemical agents developed to cause death or injury to humans.

Biological Weapons

Biological weapons are biological toxins or different contagious agents with the intention to kill or disable humans, animals or plants.

Radiation poisoning

Radiation poisoning, or radiation sickness, is a health condition caused by the excessive amount of high radiation emitted for a short period of time.

Agents

Biological agents are fungus, parasites, and bacterium used as a weapon for bioterrorism.

Biosphere

Also known as the ecosphere is all of the world's ecosystems. It is also the self-regulated space where any form of life can exist.

Toxins

Toxins are poisonous substances that can cause a disease or an infection within contact of specific tissues. Toxins are created within living cells or organisms.

BACKGROUND INFORMATION

WMDs have experienced an enormous evolution through time. With the rise of new technologies being implemented in warfare, the WMD industry has evolved producing a greater variety of weapons that make up the three categories of WMDs. With the creation of biological, chemical and nuclear weapons, warfare has experienced a massive change. The use of these weapons in wars had and still has to this day devastating effects on not only the affected regions but also the natural habitat and the biosphere.

In 1763, the British distributed blankets infected with smallpox to Native Americans. The intention for the creation of such a weapon was to spread smallpox. Microbiology research by Louis Pasteur and Robert Koch offered new potential developments for biological weapons. Biological weapons have improved and varied throughout time and they have been used systematically in warfare. Biological weapons at the time of their invention were considered only harmful to humans underestimating the fact that the spread of diseases and agents can cause a great amount of suffering to the natural environment.

Chemical weapons date back many years as they were first used by the Greeks during the Trojan war but also in the Eastern Asian peninsula. These types of weapons have been utilized by armies during warfare the past several centuries and still exist in the military arsenal. This WMD is not only extremely threatening to the human species, but can also disrupt the ecosystem of a very large region. These chemicals not only produce radiation, but also their chemical substances harm the different environments of the affected area. Marine life is endangered as chemical weapons can destroy the natural habitat. As far as the forest ecosystem is concerned, chemical weapons can destroy agriculture production as different types of plant species vanish.

The most threatening category of mass destruction weapons is nuclear weapons. The scale of destruction that these weapons can cause is enormous leading to a great number of fatalities, the ruin of whole cities and the immense disturbance of the biosphere and the natural environment. Nuclear weapons are mostly comprised of the atomic bomb and the hydrogen bomb. These two weapons have been used only a few times, but their effects can linger for many years and is evident in the environmental destruction they have caused. The effects are not only immediate like the previously mentioned ones. There are a lot of effects from the aftermath of nuclear weapons utilization. They may cause radiation poisoning in the environment. Radiation poisoning can reduce plant growth, contaminate regional water supplies and greatly affect agriculture.

World War I

The first time that modern WMDs were used in warfare was In World War I. At the time, nuclear and biological weapons were still in their developmental process but chemical weapons were starting to see their full application in battle. Tear gas and mustard gas were the most commonly used chemical weapons. Those weapons mostly targeted troops hiding in trenches. Their effects on humans, such as memory loss and chronic fatigue, were profound, but the unexpected results of their use were as alarming as the health effects. The infection of crops and the natural habitat were the most common results. Agriculture in the areas which were exposed to chemical weapons saw a significant drop in production. Moreover, with the pollution of the natural environment, many plant species became extinct.

World War II

WMDs were extensively used during World War II. The industrialization of the world that was taking place at that time fostered their evolution.

Nuclear weapons were first introduced by the United States, the United Kingdom, and Canada. The Manhattan project was intended for the creation of such weapons in order to use them during the war. They were only used on two occasions with the intent of ending WWII. The cities of Hiroshima and Nagasaki were fully destroyed leaving only the ruins of destroyed man-made structures. High levels of radiation caused long-term health and environmental effects on the area. The radiation from the explosion was absorbed by the atmosphere, which led to increasing climate change effects such as nuclear winter. Marine life close to the

targeted cities was greatly impacted causing different types of aquatic species to face annihilation. The natural environment was infected by radiation, which remained present for many years. Water contamination was the first issue that the cities had to face. In addition, agriculture saw a significant decrease as many of crops died and the soil became polluted.

Biological and chemical weapons were widely used by the countries involved in the war. They were easily accessible and effective in harming the opposing armies and civilians. As significant as the environmental consequences of the use of these weapons were, the aftermath was even more devastating. Countries routinely discarded chemical weapons left in their arsenal in the oceans with the immediate effect of consequential damage to the marine ecosystem leading to the depletion of marine life.

The testing and the abandonment of Weapons of Mass Destruction

Nuclear weapons undergo various and extensive testing procedures. Traditional ways of testing nuclear weapons employed by specific countries such as Russia and North Korea involve carrying out the experiment in specific regions, i.e. the Baltic Sea or the Sea of Japan. The overall environmental consequences are many such as the destruction of a region or a natural habitat. As is the case for chemical weapons, nuclear waste is often enough abandoned in specific areas on the ground or largely disposed of in the oceans. The waste can remain radioactive for thousands of years, affecting many generations to come.

There are many ways that these weapons can be tested without causing significant or any harm to the environment such as mathematical simulations. These types of tests are mostly run by the United States. It requires notable computer power in order to successfully run these tests. Although these tests are environmentally friendly, they have some disadvantages. A disadvantage can be that the simulation model may not be able to exactly replicate an actual situation and, hence, fail to identify issues that could have implications to the environment. Also, simulated testing does not provide any of the ethical aspects that an actual test can produce.

The presence of WMDs in the Arab Spring

The Syrian Civil War, the Libyan Crisis and the war in Yemen are some of the biggest conflicts where WMDs have been used. The Syrian Civil War is an ongoing war that has been happening since 2011. Ethnic tensions have led to this ongoing war and WMDs, namely chemical weapons, have become the primary weapons for resolving conflict. Sarin gas, a chemical weapon, has been extensively used in the Syrian conflict. This type of gas is odorless which causes serious human discomfort, but there is no evidence of environmental damage. Although chemical weapons have been used repeatedly in the Syrian Civil War, most of the environmental damage is being caused by other types of weapons.

During the Yemen war, Saudi Arabia, a nation that is highly involved in the regional war, is continuously launching attacks in Yemen. The constant bombardment of Yemen with small weapons of mass destruction, namely chemical and biological, is having a devastating impact on man-made structures and a profound impact

on the natural environment. The end result of the use of WMDs in the war is far greater than expected as Yemen has been greatly damaged by these constant attacks.

Vietnam War

The Vietnam War ended in 1975 with the extensive use of WMDs. Chemical weapons were employed by the United States of America in many battles. At the time, Agent Orange was the most dangerous chemical weapon used in the war. The contamination of water sources, the destruction of crops and natural habitats from its widespread use have been long lasting affecting, to this date, Vietnam civilians and the environment as traces are still detectable in food. The use of Agent Orange heavily harmed the development and re-establishment of the region after the war ended.

MAJOR COUNTRIES AND ORGANISATIONS INVOLVED

United States of America (USA)

The United States of America is one of the biggest producers of weapons'of mass destruction in the world. After the two nuclear missile attacks on Japan, the USA improved its nuclear missile program. This improvement meant the creation of a new military stockpile of such weaponry. Compared to other countries, the USA has not tested any nuclear weapons since 1992 as it uses advanced technology to replicate the tests. Biological weapons are almost minimal as the creation and implementation of specific treaties and regulations have influenced their production. A similar approach has been taken with chemical weapons. Chemical weapons have seen a great decrease in the military's armory with roughly 90% of these types of weapons having been destroyed. The USA plans to complete the destruction of its chemical weapons by 2023.

Democratic People's Republic of Korea (DPRK)

The Democratic People's Republic of Korea utilises only one type of WMD, namely nuclear weapons, each of which houses 10 nuclear warheads. The creation of their nuclear program was initially funded by the Soviet Union and included the training of specialized scientists and the technology necessary for the production of these weapons. DPRK is one of the biggest nuclear weapon testers in the world. It has currently conducted 6 weapon tests and is planning to do more in the future.

Japan

Japan first developed WMDs (chemical and biological) in 1943 and became one of the biggest bioweapon producers in the world during the early decades from the 1900s to the 1950s. Japan is one of the few states that has the technological capabilities to produce nuclear weapons, but it rejects any desires to create such weapons. Today, a similar approach is being taken with chemical and biological weapons.

United Kingdom (UK)

The UK has possessed many different types of WMD such as nuclear, chemical and biological over the years. In 1956 the UK officially abandoned the use and the ownership of chemical and biological weapons. Although they may not facilitate chemical and biological weapons, the UK is one of the nuclear powerhouses in the world.

People's Republic of China

The People's Republic of China is one of the biggest WMD producers. It possesses chemical and nuclear weapons in its military stockpile. China has one of the largest nuclear arsenals with 260 warheads in total. Even though China has a large nuclear program, its biological weapon production is non-existent as it claims to have never been involved with such weaponry. Chemical weapons used to be present in China in large quantities.

Russia

The Russian Federation is the biggest nuclear weapon producer in the world with approximately 7,800 nuclear warheads in its military arsenal. Russia has and is still conducting many nuclear tests in many regions of the world. Russia does not only possess nuclear weapons. Biological weapons are also a big part of Russia's weaponry. Furthermore, Russia used to produce chemical weapons, but on September 27, 2017, Russia claimed that it had destroyed all of its chemical weapon stockpiles.

Syria

The United States of America and Russia made an agreement in 2013 to eliminate all of Syria's chemical weapon stockpile. Since then, Syria claims to have fully closed every chemical program facility in the country, but many intelligence agencies believe that Syria is still manufacturing such weapons. Syria has a very limited biological weapon arsenal. It has been involved in the production of different types of biological weapons such as anthrax and smallpox. The nuclear program that Syria operates is not massive compared to other nations. It focuses on international relations in order to develop nuclear energy like the nuclear reactor that is being funded and provided by the Chinese government.

Iraq

Iraq has for many years researched and developed WMDs. Many western countries, such as France and Germany, have provided the necessary help for its program. Nuclear and chemical weapons were the types of weapons that these projects were creating. Nuclear weapons were hard to produce so the amount that Iraq housed was minimal compared to the chemical weapons it had stockpiled. In 2002, around 600 metric tons of chemical agents were thought of to exist in the Iraqi military arsenal. After negotiations were held, Iraq has recently eliminated all of its chemical weapons stockpiles with the implementation of the Chemical Weapons Convention.

India

India is a nation that develops and owns weapons of mass destruction. The type of WMDs that India possesses is nuclear weapons. The scale of its nuclear armory is unknown since India has not made any statements regarding its nuclear power. It is estimated that it has produced roughly 140 nuclear weapons. India is a signatory to many conventions and treaties which involve WMDs.

Islamic Republic of Iran

Iran currently possesses WMDs in its military arsenal. Its civilians have experienced the impact of WMDs in the Iran-Iraq war which happened in the 1980s. Although Iran has signed several treaties against the ownership and the use of WMDs, it still has programs running regarding the research of nuclear and biological weapons. However, extensive research is not being done for chemical weapons. Iran has a relatively weak defense system against chemical weapons as it has been caught off-guard numerous times in the past.

Islamic Republic of Pakistan

Pakistan is one of the nine nations that currently possess nuclear weapons. Nuclear weapons are the only type of WMDs that Pakistan develops and creates. It has had a history of producing WMDs since 1972. Pakistan has the capability of using nuclear weapons in warfare through several means. It can attack from land, air and the sea.

Organization for the Prohibition of Chemical Weapons (OPCW)

OPCW is a non-governmental organization (NGO) which is trying to eliminate all types of chemical weapons. It provides different programs to nations in order to prepare, support and eliminate chemical weapons. OPCW has created a program about responding to the use of such weapons in order to save the region affected. It helps save the environment but also civilians.

United Nations Office for Disarmament Affairs (UNODA)

This non-governmental organization has created the Biological Weapons Convention. The intention for this convention is to disarm every country that may produce or possess biological weapons. The convention took place in 1972 and was implemented by the countries that signed it in 1975. Many countries have agreed to implement this convention in their countries' policies, but there are a lot of countries who are still taking such actions. In 2010, a deal was signed in order to create a program that will assist countries which are currently implementing the convention.

Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO)

CTBTO is targeted at banning nuclear testing. Many countries have signed this treaty banning nuclear testing. The implementation of this treaty requests member-states to allow CTBTO to monitor and inspect their nuclear program but also control the country's nuclear armory.

TIMELINE OF EVENTS

Date	Description of Event
1763	The first biological weapon is used by the British as they distribute blankets infected with smallpox to Native Americans.
August 6, 1945	Hiroshima bombing takes place, the first time a nuclear weapon is put to use.
August 9, 1945	Nagasaki bombing, the ending of World War II
1962	American military launches an aerial attack over the Vietnamese jungle in order to eliminate a base of the opposition. It is suspected that Agent Orange is used in order to destroy the natural environment in the surrounding area.
April 10, 1972	The Biological Weapons Convention is signed.
March 26, 1975	The Biological Weapons Convention is signed and implemented by member states.
1993-1996	Creation of the Commission of the Comprehensive Nuclear-Test-Ban Treaty Organization and the treaty.
2004	Vietnamese citizens file a lawsuit against companies that developed chemical weapons due to the effects Agent Orange had on Vietnam.
February 2007	The United States agrees on providing the necessary help in order to find ways to remove Agent Orange from the environment.
2009	DPRK Nuclear test.
June 2011	Vietnam and the USA start co-operating in order to clean the contamination caused by Agent Orange.
August 2013	Sarin Gas attack in Eastern Ghouta and Moadamiyet al-Sham (Syria).
2013-2017	DPRK announces 4 nuclear tests.
2018	Assad chemical attack in Syria.
January 23, 2019	ISIS attack with chemical weapons in Kurdistan.

UN INVOLVEMENT: RELEVANT RESOLUTIONS, TREATIES, AND EVENTS

Most UN involvement is extremely limited for the environmental consequences of these types of weapons, but it revolves around the prohibition of WMDs in order to tackle all of the issues that they can be caused such as the destruction of the environment.

- S/RES/1540, by the Security Council, was adopted on April 28th, 2004. It aims to refrain non-state actors from being provided with assistance by member-states in order to manufacture, develop and transport any type of weapons of mass destruction.
- A/RES/64/45 is a resolution with the intent of preventing chemical and radioactive waste dumping in the oceans. It was created in January 2010.
- General Assembly resolution 33/59 a resolution that was created in 1978. It focuses on prohibiting biological and chemical weapons.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

There are few previous attempts in order to combat the environmental consequences of producing WMDs. Most attempts are focused on prohibiting WMDs, but nations do not follow those treaties or conventions.

The Chemical and Biological Weapon Convention are two conventions regarding these two types of weapons and their existence in military arsenals. Although they are signed by most nations of the world, many countries have failed and are failing to implement them in their policies. Most countries do not follow the convention as they continue to produce, research and test different types of weapons of mass destruction. Many different treaties have been ignored by nations and therefore weapons of mass destruction still exist in the military arsenals of countries.

Different organizations, such as the Organization for the Prohibition of Chemical Weapons, are trying to minimize or eliminate WMDs as a whole. Many nations support and are a part of this NGO, but are still producing and developing WMDs. Therefore, it can be seen that although countries have agreed and are part of different conventions and treaties, they still manufacture, research and develop WMDs.

Many nations have made many attempts in order to reduce and clean the environmental contamination that has been caused by WMDs, but these attempts have not been efficient thus far. Little research is being done in order to help with the environmental effects of such weapons.

POSSIBLE SOLUTIONS

One way to tackle the environmental consequences of producing WMDs is to prohibit weapons of mass destruction. Although attempts have been taken in order to eliminate them and their usage in warfare, a lot of countries still have WMDs in their arsenals.

Environmental consequences of WMDs are not only the result of their usage but of their testing as well. Nuclear weapons are being tested by a certain number of nations, which has the immediate result of harming the environment. Therefore, the implementation of new technologies in order to avoid the testing of the weapons could be utilized in order to tackle environmental effects.

After WWII, many chemical weapons were discarded in the ocean. The creation of a program or a convention should conduct research into the locations of the chemical pollution and help extract the chemical waste from the environment. This program could implement new technologies in order to help restore the ecosystems that were previously affected.

A legal framework regarding the regulation and the use of WMDs could be a very feasible solution as it would help with monitoring WMD programs around the world, but also the disposal of WMDs in the natural environment.

Numerous solutions could come from saving the damaged environmental regions, but the issue of testing these types of weapons and their usage will always be present. Consequently, the most important approach to the issues is to prohibit and limit the use of WMDs by nations and/or organizations.

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