DISEC

Issue Description

COMMITTEE	Disarmament and International Security Committee
ISSUE	Eliminating Chemical and Biological Weapons Stockpiles
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Introduction

Throughout its whole existence humanity has continuously strived to defend its own possessions, especially its motherland, while seeking to conquer what belonged to others. Unfortunately, retaining what is legally or by custom yours, not to mention obtaining what is not, is oftentimes a struggle accompanied by conflict, assault and bloodshed. Consequently, as technology, science and the munition industry evolved linearly, nations capitalized on them with the aim of reaching unprecedented advantages and success in territorial disputes. Chemical and biological weapons are perfect examples of excessive weaponry designed to be able to carry out mass destruction by disseminating disease-causing organisms or toxic chemicals, harming or killing humans, animals and plants. Unlike conventional weapons, they poison and are highly contagious. What causes the exceptional threat of chemical and biological weaponry is that their effects are capable of spreading beyond military targets, they are unconfined to national borders and contaminate the environment long after utilization. Recognizing their above-stated hazards, multiple steps have been taken internationally to combat the issue of their active and deliberate usage and release, for instance the Chemical Weapons Convention and the Biological Weapons Convention. The adoption of such treaties by a ceaselessly growing number of countries, including ones with previously immense stockpiles, led to a more positive situation today: declared chemical weapons stockpiles have all been verified and destroyed, and biological weaponry is formally banned, however, they are harder to verify and manage. Despite these efforts, the problem is not completely solved with undeclared or suspected stockpiles and a lack of routine inspections.

Definition of Key Terms

Chemical weapon - Chemical weapons include three main categories according to the Chemical Weapons Convention article II.

1. Toxic chemicals and the substances used to produce them, except where permission is given by the Chemical Weapons Convention for a purpose and only in amounts permitted.
2. Weapons, mechanisms or munitions made specifically to cause harm or death by releasing toxic agents.
3. Equipment that have been precisely designed to be used directly with the armaments described in the former point.

Biological weapon - A weapon disseminating disease causing agents to harm or kill living organisms.

incapacitation - A condition or the process of being made unable to function normally or effectively, meaning unable to act, resist or perform its intended activities temporarily or permanently.

Biological Weapons Convention (BWC) - The Convention forbids the creation, accumulation, manufacture, and transfer of biological agents and toxins when they are not intended for justifiable defensive or peaceful purposes. It outlaws the development of weapons, equipment, or transfer methods designed to spread these biological agents or toxins.

Chemical Weapons Convention (CWC) - The Convention was made to eliminate all chemical weapons by the prohibition of their stockpiling, development, production, transfer, acquisition and above all, their use by all State members. All States Parties included have agreed on destroying these weapons and demolishing or converting any facilities that have produced them in the past.

incineration - The destruction of materials by burning them at a high temperature converting them into ash, gases and heat.

Department of Defense (DoD) - A government department of the United States with a primary role of protecting the States and its interests by managing an Army, Navy, Air Force, Marine

Corps, Space Force, and Coast Guard. They continue to develop and implement military strategy and defense.

chemical agents - Chemical substances that can produce physiological, toxic or disruptive effects on living organisms when they are inhaled, ingested, absorbed or otherwise introduced to the body.

plasma pyrolysis - An advanced process of treating hazardous, chemical, biological, medical or radioactive waste with exceptionally high temperature generated by plasma to cause thermal decomposition without combustion.

General Overview

HISTORY OF CHEMICAL AND BIOLOGICAL WEAPONS

Chemical and biological weapons built their foundation in the ancient and medieval periods, where poisoned weapons such as arrows immersed in toxins or contaminated water were frequently used to increase the likelihood of incapacitation or death, especially under the medical constraints of the given time period. Even non-fatal wounds could result in increased lethality provided that the substances entered the bloodstream. In combat and hunting, speed was a consequential factor. Curare from South American plants, tetrodotoxin from pufferfish toxin, and certain snake venoms caused rapid muscle failure which resulted in the inability to stand or breathe properly.

The first large-scale, systematic use of chemical weapons occurred during World War I, whereas biological weapons were not methodically used. Chemical agents including chlorine gas, phosgene and mustard gas caused countless casualties and psychological effects even among survivors. This brought about the 1925 Geneva Protocol which specifically prohibited the use in war of asphyxiating, poisonous, or other gases and bacteriological weapons. The protocol however, omitted to ban the development, production, or stockpiling of such weaponry.

During World War II several nations developed and stockpiled nerve agents and other chemical weapons but did not use them in combat because of the fear of retaliation and concern for international condemnation.

During the Cold War, both the United States and the Soviet Union amassed vast stockpiles of chemical weapons, amounting to tens of thousands of tons. In 1972, the Biological Weapons Convention (BWC) was adopted and it was the first treaty to outlaw an entire class of weapons. After 65 ratifications the Convention's entry into force was determined and as promised it entered into force on 26 March 1975.

RATIONALE FOR ELIMINATION

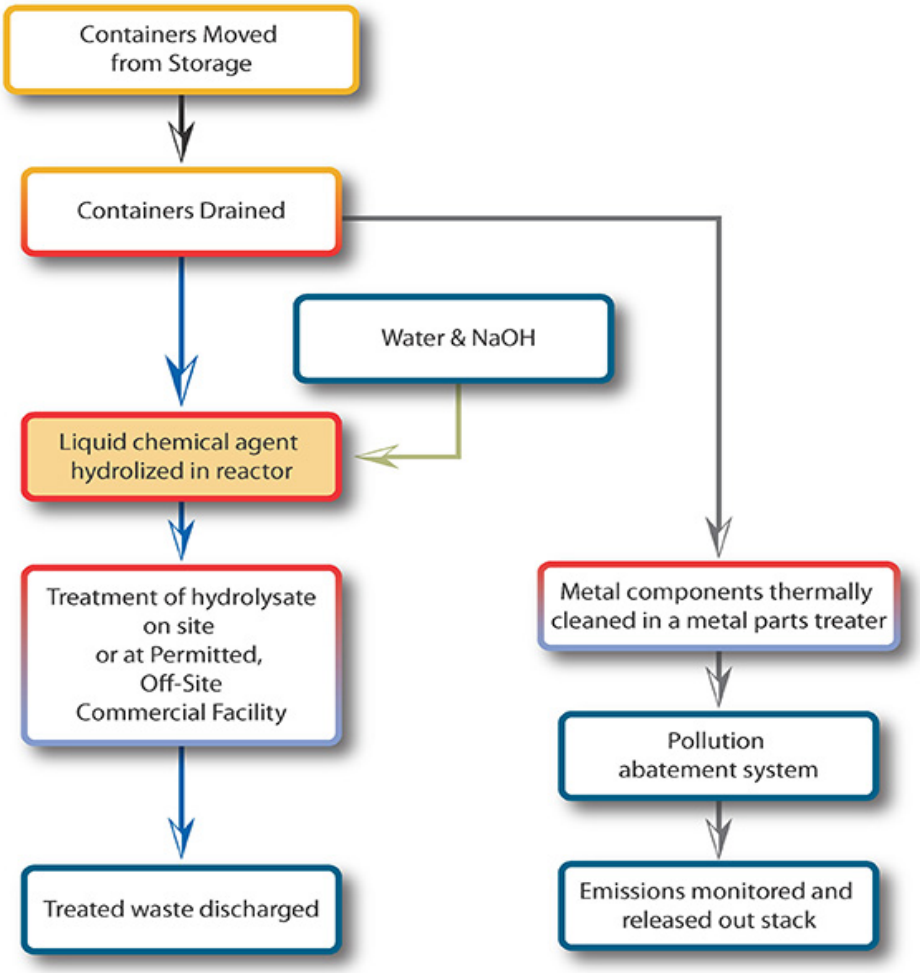
According to historians, more than 1.1 million casualties occurred in World War I as a result of chemical weapon usage. The impacts of these instruments are inhumane, more often than not inducing profound and unnecessary tribulation, and causing lifelong health consequences for the survivors.

Even long after usage repercussions persist, which makes our environment at high risk. Some agents such as mustard gas and many pathogens are stable and can linger in soil for months, if not years, contaminating both our lands and waters. Ecosystems become disrupted, water becomes unsafe for both drinking and agriculture, and disease causing organisms loiter in animals. The causes include food shortage and even economic collapse.

STOCKPILE DESTRUCTION METHODS

The Department of Defense exercises two categories of destruction methods. High temperature destruction technologies are treatment processes that use elevated temperatures, for instance incineration, plasma pyrolysis or explosion chambers. The DoD mainly decides on incineration for dismantling chemical warfare agents and munitions. Incineration is a controlled burning process that transforms materials into ash, water vapor, carbon dioxide, and other byproducts

of combustion. The other group consists of low-temperature destruction technologies like neutralisation. Chemical neutralization and hydrolysis followed by secondary treatments is oftentimes used by DoD as a destruction method, it renders hazardous chemicals non-lethal by



converting them into less toxic substances through chemical reactions.

Major Parties Involved

The United States of America: Before signing and adopting the Chemical Weapons Convention, the United States of America, alongside the Russian Federation, possessed the largest declared chemical weapons stockpiles globally. Its chemical weapons program commenced during World War I with the establishment of the U.S. Army Gas School lasting for over 70 years. Due to widespread chemical weapon usage during WWI, the USA manufactured and utilized ones as well for instance phosgene, known as a blister and choking agent and mustard, which is a blister agent also. Following World

War I the country employed various chemical agents to handle further disputes, conflicts or projects. Such include the Cold War and the Vietnam War, where the U.S. widely deployed tear gas and defoliants, in particular Agent Orange. However, with the Cold War coming to an end, the USA began destroying its stockpiles and in 1993 signed the CWC at its opening. Within 26 years the United States of America managed to demolish over 30,000 tons of chemical agents stored within almost 3.5 million munitions, together with over 22,500 tons of agents in other containers. Today the U.S. Army Medical Research Institute of Chemical Defense operates in the country battling chemical warfare. Moreover, the country stops chemical weapons activities through federal law and has assisted other states in the elimination of chemical ammunitions. Concerning biological weapons, the USA concluded all non-defensive aspects of the United States biological weapons program in 1969, which had previously tested on non-consenting individuals and had weaponized and stockpiled seven biological agents. In 1975, the country ratified both the Geneva Protocol and the Biological Weapons Convention.

Russia: Despite being a party to the Biological Weapons Convention of 1972, the Soviet Union operated the world's largest, longest and most sophisticated biological weapons program from the 1920s until 1992, thereby directly violating its obligations. Biowarfare programs augmented by authorities were immense, conducted at dozens of secret sites with an overall of approximately 65,000 employees. Furthermore, the locations of several of such research sites were not confidential, instead the facilities existed under civilian cover organizations. Annualized production capacity for weaponized agents was vast, to mention an example, for smallpox it was 90 to 100 tons. However, in 1992 the country signed a trilateral agreement with the United States of America and the U.K., pledging to put and end to biological weapons programs and convert its facilities to benevolent purposes. Nevertheless, Russia's compliance with the agreement in addition to the fate of its former biological agents and research sites remains largely hypothetical. Regarding chemical munitions, the country's former production and extensive application is unquestionable with its now-destroyed-stockpiles totaling nearly 40,000 tons, making up approximately half of all stockpiles globally. The Soviet Union commenced initial efforts to eliminate some of its chemical weapons prior to the introduction of the Chemical Weapons Convention in 1997 and the OPCW verified their complete demolition in 2017. The process was made possible with extensive international support, economic and technical assistance from the US, UK and EU and

a fund from the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction.

Syria: Syria's chemical weapons program launched in the 1970s, becoming the largest one in the Middle East, obtaining weapons and training from Egypt and Russia until the 1980s. Prior to 2013 Syria was not admitted to holding chemical munitions, however, in that year the country signed the CWC and the OPCW-United Nations Joint Mission began operating, overseeing, verifying and eliminating stockpiles by 2014. Nevertheless, concerns remain today regarding chemical weapons and related sites due to incomplete documentation, allegations of withheld or retained stockpiles and suspected deliberate releases of toxins leading to civilian casualties.

North Korea: Currently North Korea owns significant chemical weapons stockpiles, estimated to be approximately 2,500 – 5,000 tons, containing nerve, blister, pulmonary and blood agents as well, though the country repudiates their possession. Refusing to enter the Chemical Weapons Convention, North Korea remains a minority, being one of the few countries excluding themselves. Its program is well-established, although our details vary on current state and technological sophistication, as international inspections or verifications are prohibited, yet intents and capabilities, such as being able to produce thousands of tons annually, are clear. According to allegations, chemical weapons' components and expertise may be delivered to Syria by the country. The assassination of Kim Jong Nam demonstrates operational utilization of stockpiles, namely VX, a nerve agent. Chemical munitions are reckoned to be integrated in North Korea's military doctrine.

Organisation for the Prohibition of Chemical Weapons: The OPCW is the implementing body for the Chemical Weapons Convention, established solely for this purpose in 1997, with presently 193 signed members. Under its operation, 100% of declared stockpiles by possessor States have been verifiably destroyed. In the year 2013, the Organisation was awarded the Nobel Peace Prize for its substantial efforts and dedication to eliminate chemical weapons. Implicitly, the OPCW's singular goal is the unmitigated eradication of chemical weapons stockpiles worldwide and the prevention of the return of their usage. It examines and verifies the demolition of munitions by on-site inspections,

reviewing documentation and monitoring destruction processes and chemical industry activities. Alleged utilization goes under thorough investigation as well by the institution. Furthermore, it promotes the peaceful use of chemistry and as a matter of course, member states are offered the OPCW's full support. Its headquarters can be found in the Hague in the Netherlands.

Organisation for the Prohibition of Chemical Weapons: One of the several UN offices operating within its system is the UNODA, created in 1998, with the objective of general and complete disarmament under strict and effective international control. Additionally, it is the primary United Nations body responsible for biological weapons disarmament, including the supervision of the BWC. Weapons of mass destruction, such as nuclear and biological, mean the UNODA's major concern, however, the office also works to address the humanitarian impact of conventional weapons and emerging technologies, for instance autonomous weapons. The UNODA has exceptional significance as it stands as a verification organization for the BWC to some degree, yet is still not one contrary to the OPCW. Through meetings, review conferences and by assisting states in implementing prohibitions on biological weapons, the office supports the BWC and works on preventing the global re-emergence of chemical and biological weaponry.

Timeline of Events

Ancient, Medieval times - weapons coated in poison

World War I. - first large-scale use of chemical weapons

1925 - Geneva Protocol

1920-1930 - states continue to research and stockpile biological and chemical weapons (despite the Geneva Protocol)

1972 - Biological Weapons Convention signed

1975 - Biological Weapons Convention enters into force

1980s - Incineration introduced as a reliable and safe destruction method of these weapons

1993 - Chemical Weapons Convention signings start

1997 - Chemical Weapons Convention enters into force

1990-2000 - Destruction of many weapons stockpiles by national programs

Previous Attempts to Solve the Issue

GENEVA PROTOCOL (1925)

Banned chemical and biological weapons for use in warfare but had no verification measures and did not ban research, production, and stockpiling.

BIOLOGICAL WEAPONS CONVENTION (BWC, 1972)

Denied the development, production, and stockpiling of biological weapons; established an international norm against bioweapons but no effective verification and enforcement regime.

CHEMICAL WEAPONS CONVENTION (CWC, 1993)

Comprehensive treaty prohibiting the development, stockpiling, and use of chemical weapons; implemented by the Organization for the Prohibition of Chemical Weapons (OPCW); verification and destruction mechanisms set forth.

OPCW DESTRUCTION MANDATES & TIMELINESBIOLOGICAL WEAPONS CONVENTION (BWC, 1972)

Assisted large-scale dismantling of declared chemical arsenals, including large stockpiles owned by the United States, Russia, and others in a ratified agreement.

UN SECURITY COUNCIL RESOLUTIONS ON NON-PROLIFERATION

Various resolutions (as UNSCR 1540) contained requirements on States to prevent non-state actors from procuring chemical or biological weapons.

COOPERATIVE THREAT REDUCTION PROGRAMS

Bilateral and multilateral efforts (e.g., U.S.-Russian CTR Program) aimed at removing stockpiles from the Cold War years, improving safety measures, and improving secure storage.

COLLABORATION IN GLOBAL HEALTH AND BIOSECURITY

There were also international efforts by groups such as WHO, FAO, and other institutions to enhance biosecurity to stem misuse of dual-use biological research after the 2001 anthrax attacks, which had been considered in its normal scientific use.

POST-CONFLICT CHEMICAL DISARMAMENT OPERATIONS

UN and OPCW, in armed conflict (e.g., Syria) efforts to annihilate declared stockpiles and associated production facilities were complicated by operational challenges.

Possible Solutions and Approaches

STRENGTHENING VERIFICATION AND COMPLIANCE MECHANISMS

Recommend a modernization of verification tools including remote sensing, environmental sampling, digital reporting systems, and an expansion of OPCW-BWC inspection requirements.

UNIVERSALIZATION OF RELEVANT TREATIES

Encourage the PECs to ensure that the non-signatories remaining accede to the BWC and the CWC and close any legal and normative gaps that allow states to carry out undeclared capacities.

STRENGTHEN TRANSPARENCY AND CONFIDENCE-BUILDING MECHANISMS

Encourage compliance with disarmament commitments through regular reporting, peer consultation, and a voluntary nature of site visits to reduce distrust and increase adherence to disarmament agreements through voluntary reporting and peer consultations.

CAPACITY BUILDING FOR POOR-RESOURCE STATES

Supply technical assistance, training, and funding to those countries that do not have the technical or infrastructure to safely dismantle stockpiles or secure hazardous wastes.

PREVENTING ACQUISITION BY NON-STATE ACTORS

Enhancing border restrictions, export controls, intelligence sharing, and bio surveillance systems, and counterterrorism or criminal access to potential chemical or biological agents will be important.

SAFE DISPOSAL AND ENVIRONMENTAL DECONTAMINATION PROGRAMS

Emphasis on supporting environmentally sound disposal of obsolete stockpiles and old weapons or contaminated sites via the building of international cooperation.

DUAL-USE RESEARCH OVERSIGHT

Promote ethical frameworks and review bodies for biotech, synthetic biology, and related research to address where and how it is misused, while also promoting the scientific advantage.

IMPROVED CRISIS RESPONSE AND ACCOUNTABILITY MECHANISMS

Suggest clear mechanisms for a swift UN investigation of what are thought to be chemical or biological weapon use, as well as fair or proportionate sanctions or international legal accountability.

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