

<b>FORUM:</b>	Disarmament Commission
<b>ISSUE:</b>	Measures to mitigate the Threats Posed by Chemical and Biological Weapons
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## Introduction

What is a chemical or a biological weapon? Chemical and biological weapons are toxic chemicals or organisms abused to cause death and injuries through their fatal properties. They are extremely deadly, and they can induce mass destruction during warfare.

There are four typical types of chemical weapons: choking agents, blistering agents, blood agents, and nerve agents. They target many different parts of the human body, leaving a lethal impact on every one of them. In order to defend themselves, countries have devised several corresponding defense measures: early warning systems, protective gears, antidotes, etc. However, these defense measures cannot always guarantee safety; once used, chemical weapons leave enduring effects on the environment.

Meanwhile, biological weapons such as bacteria, viruses, biotoxins, and fungi are also another noteworthy international concern. Biological weapons not only serve to damage humans, but they can also degrade the environment by making parts of land barren, causing food shortages and economic loss.

On January 13, 1993, one notable international treaty called the Chemical Weapons Convention (CWC) was signed by multiple countries, agreeing to prohibit the development, distribution, stockpiling, and use of chemical weapons.

Yet, there are still many countries and terrorist groups secretly developing chemical weapons out in the world. Thus, the following chair report will delve into further details and solutions regarding this significant issue.



*A soldier with a protective gear is holding a chemical weapon.*

## Background

March 20, 1995, was another crowded morning in the Tokyo subway station. Thousands of people were concentrated in the station, busy finding their own way to their workplaces. There was nothing apart



from usual until five young men, disguised with wigs and fake beards, pierced plastic bags filled with a strange liquid using sharpened umbrella tips.

The Tokyo subway attack of 1995 resulted in the deaths of 13 people, leaving about 5,500 others injured to varying degrees. The number of casualties was extensive; however, the way the terrorist group harmed the victims was unprecedented. It was not something like dynamite or guns that terrorist groups had often used in the past. It was an odorless, colorless, highly toxic gas called sarin that took the innocent lives of 13 people in just a few minutes.



*A photo of the Tokyo subway station on 20 March 1995*

Sarin is a gas-activated nerve agent that can kill the victim within several minutes of exposure. Sarin can be absorbed in different medians, and it is one of the deadliest chemicals designed for chemical warfare around 1937 in Germany.

Chemical weapons were most actively explored during World War I and II. Some notable examples of chemical weapons used in World War I and World War II include chlorine gas, phosgene gas, mustard gas (sulfur mustard), diphosgene, sarin, tabun, and lewisite. Once executed, they led to widespread casualties. According to the UN Office for Disarmament Affairs, chemical weapons have resulted in approximately 100,000 deaths and one million casualties all around the world.

Fortunately, international efforts such as The Hague Convention of 1899, the Geneva Protocol of 1925, and the Chemical Weapons Convention of 1997 took place. They gradually reduced the usage and possession of chemical weapons.

On the other hand, one famous biological weapon used was smallpox. During the French and Indian Wars that happened between 1754 and 1767, British forces distributed blankets, infected by a smallpox virus, to the American Indians supporting French armies. Consequently, more than fifty percent of the infected tribes were killed.

The Biological Weapons Convention of 1972 has successfully controlled the development and use of biological toxins. However, some countries are still possessing chemical and biological weapons covertly in their laboratories, posing a significant threat to international society.

## **Problems Raised**

*Verification and Enforcement Challenges*



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Ensuring total compliance with international treaties such as the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC) in every nation is virtually impossible. The clandestine programs are usually kept confidential within the country. For example, after the Gulf War in 1991, the United Nations Special Commission once discovered Iraq's undercover chemical weapons program producing nerve agents like sarin and VX. Those covert programs are usually extremely difficult to uncover. Furthermore, dual-use technologies that countries assert to have both civilian and military applications make the verification process even more challenging.

Also, even when the violations are detected, punishing them and imposing sanctions face further challenges. There are political and diplomatic obstacles that may make countries to be unwilling to take strong actions against one another. Some of those obstacles may include economic interdependence, strategic alliances, international norms, etc. This lack of a robust enforcement mechanism undermines the overall effectiveness of non-proliferation efforts.



*Organization for the Prohibition of Chemical Weapons (OPCW) inspectors are going through verification activities.*

### *Technological and Scientific Advancements*

As more advances in biotechnology and chemistry are happening, it will become harder and harder for the existing regulating body to monitor them. In this twenty-first century, scientific development is occurring at incredible speed. New technologies and sophisticated tools emerge every day. Some worry that these rapid advancements will outpace the ability of international regulations to adapt; this could weaken the non-proliferation regime.

Non-state actors, such as terrorist groups, could develop chemical or biological weapons due to easy access to a broad spectrum of scientific knowledge in contemporary society. Currently, lots of scientific research and sophisticated equipment are available on the global market. For instance, the Aum Shinrikyo cult, the one who executed the Tokyo subway attack in 1995, used publicly available scientific literature and purchased chemicals from commercial suppliers to develop sarin gas. This widespread availability of knowledge can likely provide malicious actors with the necessary tools to expertise and develop new chemical weapons.

## **International Actions**

*The Australia Group*



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The Australia Group is an informal forum of 42 countries. Member states, including major chemical and biotechnology producers, hold meetings annually to discuss and share information about export licensing. They collaborate to oversee the dissemination of dual-use technologies in order to prevent any forms of misuse. Sharing best practices helps the Australia Group to make sure that emerging technologies are not used for weaponization, restricting the proliferation of chemical and biological weapons. One of their contributions in real life was preventing the proliferation of chemical weapons and controlling the export of related materials to the region during the Syrian civil war.

### *The UN Security Council Resolution 1540*

UNSCR 1540 was adopted in 2014. It requires all UN member states to implement measures to prevent non-state actors from acquiring weapons of mass destruction, including chemical and biological weapons. This particular resolution urges states to enact and enforce corresponding laws to criminalize proliferation activities, establish controls over related materials, and enhance national export and border controls.

## **Key Players**

### *United States*

Since 1986, the United States proceeded to destroy all of its stockpiled chemical weapons. By signing CWC in 1997, the United States has been consistently working on the complete destruction of chemical weapons. By July 7, 2023, the United States had destroyed all its chemical weapons, which weighed more than 30000 tons.

### *Syria*

Despite joining the CWC in 2013, Syria did not stop using chemical weapons due to its ongoing civil wars. Some of the notable examples are the Khan Sheikhoun chemical attack, killing 89 people and injuring hundreds of people, and the Douma chemical attack, resulting in dozens of deaths. After a thorough investigation, the United Nations and OPCW have concluded that the Syrian government was responsible for those several attacks. These



*A civil defense member is breathing through an oxygen mask after the chemical attack in the town of Khan Sheikhoun (Syria).*





facts show that the Syrian government has not given up developing and possessing chemical weapons, and this has brought widespread condemnation from other countries against the Syrian government.

### *Organization for the Prohibition of Chemical Weapons (OPCW)*

OPCW is an international organization working worldwide. It is responsible for implementing the Chemical Weapons Convention and overseeing the destruction of chemical weapons.

## **Possible Solutions**

### *Enhance Verification and Enforcement*

Increased Inspections on chemical production facilities, research and development laboratories, storage sites, military installations, ports and customs facilities, industrial sites, academic institutions, and government stockpiles:

Regulation bodies such as OPCW should

use effective inspection strategies. For example, they should conduct unexpected, unannounced inspections. Furthermore, regulatory bodies should take advantage of high-tech facilities

such as satellites and AI. Utilizing them can greatly boost the efficiency of inspections. Having a robust reporting mechanism with rewarding policies will also surely help the inspections.

**Unified Sanctions:** As mentioned above, strong punishments are essential for violations of treaties like the CWC and BWC. There should be a robust international framework that can automatically impose sanctions on countries and non-state actors when they violate the treaties. The punishments can vary from economic penalties, travel bans, restrictions on international trade, etc.

### *Control of Dual-Use Technologies*

**International Collaboration:** More countries should join the annual meeting of the Australia Group. This way, more countries will be able to learn helpful information managing chemical weapons, and better surveillance of dual-use technologies can be achieved.

**Strict Export Controls:** In order to keep track of transactions of materials needed for chemical and biological weapons, there should be more stringent export controls. When suspicious transactions occur,



*The inspectors of the Australia Group is working hard to bring a world free of chemical weapons.*



there should be an immediate inspection of those countries. Some examples of suspicious transactions are unusually large quantities of precursor chemicals ordered by small companies, non-standard shipping routes through intermediary countries, frequent small orders of controlled substances, lack of comprehensive end-user information, unconventional payment methods, discrepancies in documentation such as MSDS or shipping manifests, and shipments to high-risk destinations with a history of non-compliance. Exporters and importers of certain materials should provide detailed documentation, including end-user certificates, import/export licenses, Material Safety Data Sheets (MSDS), and transaction records. Governing bodies such as the United Nations should require appropriate licenses for them to complete those transactions.

## **Glossary**

### *CWC (Chemical Weapons Convention)*

CWC is an international treaty signed by 193 states. It prohibits countries from developing, producing, stockpiling, and using chemical weapons.

### *BWC (Biological Weapons Convention)*

BWC is an international treaty signed by 183 states. It bans countries from producing and possessing biological and toxin weapons.



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