



Proliferation Of Weapons Of Mass Destruction And Global Response : Implications For Security And Economy

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ABSTRACT

This paper examined the global response on the proliferation of weapons of mass destruction and its implications for security, education and economy. The discussion of the paper focused on Weapon of mass destruction, means of delivery of the weapons, countries that are involved in the production and sales of weapons of mass destruction, organizations and groups that are concerned with weapons of mass destruction. The paper equally discussed the methods of procurement and deliveries as well as international response and treaties. The main objective is to address the security, education and economic implications of the proliferation of weapons of mass destruction. The major findings from the literatures revealed that weapon of mass destruction is a threat to global security, education and economy. The paper suggested several measures that can be adopted to address the menace of the proliferation of weapon of mass destruction.

Keywords: Proliferation, Weapons of mass destruction, global response

INTRODUCTION

Proliferation means growth or multiplication. Weapon of mass destruction (WMD) refers to anything that is capable of inflicting mass casualties, destroying or rendering high-value assets as useless. Proliferation of WMD or the spread of weapons of mass destruction does not only involve the increase in WMD, the development or purchase of these weapons and their means of delivery as such, but also the buying or otherwise obtaining the goods and the knowledge required for production and development of the WMDs. This procurement takes place mainly in industrialized countries where high technology is available. Much of this technology can be used for dual purposes; by the military and by the civilian.

Weapons of mass destruction is not limited to chemical, biological, nuclear, and radiological weapons. Many things can be used as a WMD. This was sadly true in the September 11, 200, attacks on the United States of America (USA) when airliners loaded with fuel, became missiles, killed thousands of people, leveled the 110-story Twin Towers, and hit the Pentagon in the United State. WMD could also include blowing up a train filled with toxic chemicals as it travels near a town while the wind is blowing toward the town, or placing a radiological device, disguised as HVAC equipment, near the intake vents of a crowded building. The range of potential WMD attacks depends on the creativity of the enemy. The number of “soft” targets capable of being targeted is enormous (Philip, 2013). The term Weapon of Mass Effect (WME) describes the human reactions and events surrounding the use of a WMD that may result in limited or no casualties or physical damage. The mass effect may be sensationalized media reporting, panic, and social and political change.

Many countries in the world today are working on the development and production of weapons of mass destruction. Weapons of mass destruction can kill or eliminate large numbers of people in a short time. The main types are nuclear weapons (atomic weapons, radiation weapons), chemical weapons (such as poisonous gas) and biological weapons (natural toxins and pathogens, like the anthrax bacterium). These countries are usually also developing or trying to procure the means to deliver these weapons, such as ballistic missiles, cruise missiles and unmanned aerial vehicles

(UAVs). Not only states, but also terrorists may seek to possess weapons of mass destruction for committing or threatening attacks. For example, the well-known Muslim extremist and founder of Al Qa'ida, Osama Bin Laden, has openly declared himself in favour of this idea (Fursenko & Timothy, 1997).

Given the high technological level of production of WMD in most advanced nations such as USA, Netherlands, Russia etc, states and terrorists seeking to possess these weapons may also see these countries as an interesting procurement areas. For this reason, it is important that companies and scientific institutions should be aware of the proliferation risks involved in their contacts with organizations and bodies in countries that are suspected of developing weapons of mass destruction. It is also important that companies and institutions realize that proliferation-related procurement does not always concern direct transactions, but that also agents, front organizations and other roundabout ways are used to that end. Terrorists, too, may use such methods to conceal their real identities (Beach, 1999).

The proliferation of powerful weapons around the world is a source of great concern to the global communities and national security. These weapons which include conventional armaments such as military-type guns, bombs, and missiles, and the more lethal weapons of mass destruction (WMDs), which are based on nuclear, chemical, and biological technologies can send human race on extinct. The goals for counter proliferation (non-proliferation) include stopping the development of new weapons, reducing and safeguarding the stockpiles of existing weapons, and preventing the spread of WMD technology, particularly among advanced countries of the world. The greatest threat to international and national security is the acquisition and use of WMDs by terrorists and nations that ignore international restrictions on weapons proliferation (rogue nations).

Most nations of the world are heavily armed with conventional weapons. A handful of developed nations, including the United States, possess highly advanced conventional weapons that are enhanced by sophisticated technologies, such as laser guidance systems. The effectiveness of these weapons was demonstrated by the U.S. military in 1991 during the Persian Gulf War against Iraq. The United States for example has become a major supplier of conventional arms to its allies around the world. Richard F. Grimmett of the CRS notes that the value of worldwide conventional arms transfer agreements between governments in 2006 was nearly \$28.8 billion. This value was down slightly from \$31.8 billion in 2005. In 2006 U.S. arms sales accounted for \$10.3 billion, Russia had \$8.1 billion in sales, and the United Kingdom had \$3.1 billion in sales (Grimmett 2007). The top ten purchasers of delivered arms in 2006 were: Australia, \$1.7 billion, Israel, \$1.5 billion, Egypt, \$1.2 billion, Saudi Arabia, \$1 billion, Taiwan, \$970 million, Netherlands, \$800 million, Poland, \$690 million, South Korea, \$610 million, Japan, \$560 million, and Greece, \$440 million.

Unconventional weapons are those that use non traditional means to reap destruction and death, primarily nuclear technology or the release of chemical or biological agents. Small numbers of these weapons are capable of killing vast numbers of people; hence, they are called weapons of mass destruction. The proliferation of WMDs is governed by many international agreements that have been brokered by the United Nations (UN). Therefore, the world is most concerned about the threat of global insecurity posed by WMDs in the hands of rogue nations and terrorists. This concern has led to global responses. Against this introduction, this paper discussed the impact of WMD and the response of the global community.

Concepts of Weapons of Mass Destruction (WMD) and Proliferation of WMD

The continuous quest for self-defense and protection of one's nation and territory from external aggressors and attacks resulted to the evolution of weapons. This is the most notable reason for the evolution of weapons of mass destruction for wars. These include world war, civil war among others.

Weapon is anything living or non-living thing designed for use to cause physical damage or inflict injury. O'Halloran (2015), inferred that weapon is perhaps any objects and materials purposely designed for inflicting bodily harm and or physical damage. Weapon covers an array of objects such as gun, knife, Missiles, sword among others. In a simpler terms, weapon is any objects used by people in injure or kill people or to destroy properties in a fight or war. Weapons can be operated to inflict pains on a person or on a large number of persons.

Weapons of Mass Destruction (WMD) defined weapons that can caused a large number of injury, death or damage to life and properties. WMD as defined in United Nations is atomic explosive

weapons, radioactive material weapons, lethal chemical and biological weapons, and any weapons developed in the future which have characteristics comparable in destructive effect to those of the atomic bomb or other weapons mentioned above (Philip, 2013). Hence WMD refers to any weapon made of chemicals and biological agents which is capable of inflicting mass casualties, destroying or rendering high-value assets as useless.

Proliferation means growth or multiplication. Proliferation of WMD is the spread of weapons of mass destruction.

Types of Weapons of Mass Destruction

Conventional Weapon²

The UN divides major conventional weapons into seven categories. These include: battle tanks, large-caliber artillery systems, combat aircraft, attack helicopters, warships (including submarines), armored combat vehicles, and missiles and missile launchers. Most national militaries are equipped with many, if not all, of these weapons.

Missiles

Missiles are the latest generation of projectile weapons. Their evolution began with the invention of gunpowder by the Chinese. Over time, explosives technologies were employed on the battlefield in guns, cannons, and bombs. World War II (1939–1945) ushered in the modern missile age. During the early 1940s Germany developed the most sophisticated rocket program in the world. At its helm was a brilliant young man named Wernher von Braun (1912–1977). His team developed the rocket-powered Vergeltungswaffens (weapons of vengeance; they were called V weapons, for short). Thousands of V rockets rained down on England during the war. Following World War II the United States and the Soviet Union began researching the feasibility of attaching war-heads to long-range rockets capable of traveling halfway round the world. These weapons could be equipped with conventional or nuclear warheads.

A U.S. based nonprofit organization that supports arms control- Arms Control Association (ACA) reported that in 2007, thirty two countries possessed ballistic missiles. According to the report, the ranges of ballistic missiles are: Short range—less than 1,000 kilometers (km; 621 miles), Medium range—1,000 to 3,000 km (621 to 1,864 miles), Intermediate range—3,000 to 5,500 km (1,864 to 3,418 miles) and Intercontinental—greater than 5,500 km (3,418 miles)

The ACA notes that only seven countries were believed to have intercontinental ballistic missiles in 2007. Those countries were the United States, China, France, Israel, Russia, the United Kingdom, and possibly North Korea.

Man-portable Air Defense Systems

Man-portable air defense systems (MANPADS) are more commonly called shoulder-fired anti-aircraft missile systems (SAMS). They fire short-range surface-to-air missiles that are typically 4 to 6.5 feet (1.2 to 2 m) in length and only a few inches in diameter. Combined, a missile and its launcher can weigh less than 60 pounds (27 kg). Thus, a MANPADS can be carried and fired by a single individual and is easily transported and concealed. These qualities make them attractive weapons for terrorists and guerrilla fighters.

Chemical and Biological Weapons

Chemical and biological weapons are considered WMDs because of the potentially lethal effects to many people that can be obtained with relatively small amounts of the substance. The use of chemical weapons during warfare is not new. On April 22, 1915 German troops simultaneously opened more than five thousand cylinders containing chlorine gas. The wind blew the yellowish-green chlorine cloud across no-man's-land to the Allied trenches, where hundreds of soldiers were incapacitated almost immediately.

In World War I, for example, mustard gas was used, a blistering agent that can be lethal or cause chronic lung problems. During and after World War II, nerve gases with a paralyzing effect were developed. More recently, in the 1980s, Iraq deployed chemical weapons in its war with Iran and against the Kurdish population in Iraq. In order to develop chemical weapons it is necessary to have expert knowledge, raw material, corrosion-proof production equipment and safe laboratories and storage facilities. Apart from this, however, in general the production of chemical weapons is not very difficult. They have even been described as 'the poor man's nuclear bomb'.

The Central Intelligence Agency (CIA), observed that terrorists have been experimenting with various toxic chemicals and planning dissemination methods that could be used in a chemical weapons attack. The chemical agents believed to be of greatest interest to terrorists are cyanide compounds (blood agents), mustard (a blister agent), and nerve agents, such as sarin, tabun, and VX. Cyanide compounds are easily available, because they have a variety of commercial uses.

Biological Agents as Weapons

There are two types of biological weapons. The first one consists of living microorganisms like viruses, bacteria and fungi that can cause disease and death, i.e. pathogens. The best-known examples are the anthrax bacterium and the smallpox virus and the Corona Virus of 2019 (Covid19). The second type are toxins produced by biological organisms, such as the well-known botulin, which is produced by the bacterium *Clostridium botulinum* (causing botulism in water). Dispersion of pathogens may lead to epidemics or pandemic as it was the case of Corona Virus. During the Gulf War in 1990-1991, Iraq developed such agents, but did not deploy them.

Nuclear Weapons

Nuclear weapons are explosive devices that release nuclear energy. An individual nuclear weapon may have an explosive force equivalent to millions of tons (megatons) of trinitrotoluene (TNT, the chemical explosive traditionally used for such comparisons) and can completely destroy a large city. In order to produce nuclear weapons (nuclear explosion weapons) it is necessary to have plutonium or highly enriched (weapons-grade) uranium. Nuclear weapons produce two important effects that are also produced by conventional, chemical explosives: they release heat and generate shock waves, pressure fronts of compressed air that smash objects in their paths. The heat released in a nuclear explosion creates a sphere of burning, glowing gas that can range from hundreds of feet to miles in diameter, depending on the power of the bomb. Nuclear weapons include:

***Atomic bomb:** An explosive weapon which uses uranium or plutonium as fuel.

***Hydrogen bomb:** Nuclear explosive weapon which uses hydrogen isotopes as fuel and an atom bomb as a detonator.

***Isotopes:** Two molecules in which the number of atoms and the types of atoms are identical, but their arrangement in space is different, resulting in different chemical and physical properties.

***Nuclear fission:** A nuclear reaction in which an atomic nucleus splits into fragments with the release of energy, including radioactivity.

***Nuclear fusion:** A nuclear reaction in which an atomic nucleus combines with another nucleus and releases energy.

Radioactivity: Spontaneous release of subatomic particles or gamma rays by unstable atoms as their nuclei decay.

Radioisotope: A type of atom or isotope, such as strontium, that exhibits radioactivity

TNT: Trinitrotoluene, a high explosive weapon.

Means of Delivery of WMD

Countries producing weapons of mass destruction also try to procure and develop the means of delivery for these weapons, such as ballistic missiles, cruise missiles or unmanned aerial vehicles (UAVs). Means of delivery are necessary to deploy the weapons effectively. The production of these means requires a technological level which has not yet been achieved by all countries of proliferation concern. A cause for concern, however, is the fact that some countries that do have this technology have shown themselves prepared to sell it or to render technical assistance. For example, North Korea supplies missile technology to countries in the Middle East and to Pakistan.

Countries of Concern

There are countries that seek to possess weapons of mass destruction. These countries of concern usually seem to be motivated by a perceived imbalance of power in their region. The following states are the principal countries of concern (Hulst, 2003).

Iran

Iran is a member of the relevant non-proliferation treaties for nuclear, chemical and biological weapons. In spite of this, there are suspicions that Iran is working on a nuclear weapons programme.

Libya

Libya is suspected of working on the development of programmes for nuclear weapons, chemical weapons and ballistic missiles.

Syria

Syria has programmes for the development of chemical weapons and ballistic missiles. The country sees these weapons as an indispensable deterrent in case of, for example, rising regional tensions.

Pakistan and India

The neighbouring states Pakistan and India are involved in an arms race for which both countries have developed their own nuclear weapons and ballistic missiles. In the past India also developed chemical weapons, but in the 1990s it joined the Chemical Weapons Convention (CWC) and thus committed itself to destroy its chemical weapons. Pakistan, too, is a member of the CWC. Neither India nor Pakistan have joined the Nuclear Non-Proliferation Treaty, and so far both countries have refused to sign the Comprehensive Test Ban Treaty (www.fas.org).

North Korea

North Korea has an extensive ballistic missiles programme and sells goods and technology relating to this programme to other countries of concern.

Terrorists and Organisations

Not only countries, but also terrorists (both terrorist organizations and individuals) may seek to possess non-conventional weapons.

Although it is impossible to make an accurate assessment of which terrorist organizations might be capable of and willing to use Nuclear, Biological and Chemical (NBC) weapons, some relevant examples can be given. The Japanese Aum Shinrikyo sect committed an attack with the nerve gas sarin in the Tokyo underground in March 1995. The attack caused about five thousand casualties, twelve of whom died.

In 1998 the founder and leader of the radical Islamic Al Qa'ida organization, Osama bin Laden, stated that the procurement of nuclear and chemical weapons was a 'religious duty'.

Procurement methods of WMD

Countries of concern and terrorists adopt different methods to conceal the fact that the goods or technology they wish to procure are intended for a weapon programme. In the past the attempts by countries of concern to find and buy goods in Europe or other countries with much high technology used to have a rather overt character. After the Gulf War against Iraq in 1990-1991, it turned out that Iraqi government institutions had not only procured dual use goods in the West, but also that Iraqi technicians and scientists had followed part of their training in western Europe and North America, while usually the companies and scientific institutions concerned were unaware of the fact that they thus contributed to the Iraqi programmes for weapons of mass destruction. The purchases included, for example, goods for the Iraqi Science Research Council and the training of Iraqi citizens on the production and use of the weapons

Meanwhile, the increased alertness of governments to possible procurement activities and the refinement of export control mechanisms have made an overt procurement of proliferation-sensitive goods and knowledge practically impossible. As a consequence, countries of concern are increasingly trying to cover up their purchase attempts. Terrorists can be expected to use the same strategy. Below an overview has been given of the main procurement methods, which may be used both separately and in combination.

In order to conceal the fact that dual-use goods are destined for a country of concern, procurement organizations often decide not to ship them directly to that country. Instead they use intermediate stations in one or more other countries while pretending that these are the countries of destination. In the case of the Libyan missile parts, three intermediate destinations were used. In 1999 a shipment of chemicals was seized in the United Kingdom which came from Asia and was destined for Syria.

Another strategy is the method of the false end-user. Procurement organizations for WMD programmes are using front companies, agents and other false end-users; some of whom exist only on paper in order to cover up the organization for which the goods are actually intended. In some cases they use agents in countries where the shipment itself will never arrive.

Procurement organizations do not hesitate to commit document fraud in order to disguise the fact that goods are intended for a programme for weapons of mass destruction.

Countries of proliferation concern are not only trying to obtain equipment, but also the know-how for their programmes for weapons of mass destruction. To that end students and post-graduate researchers enrol at European universities and academies. They search the Internet, and through web-sites and discussion groups they contact persons and organizations that may help them to get information and know-how.

Similarly, persons or organizations trying to establish contact with companies or scientific institutions in the Netherlands for the procurement of goods or technology for the production of NBC weapons may also be motivated by terrorist purposes. Like countries of concern, they, too, may use cover methods as we described above. An additional problem is the fact that terrorists do not always need to export the goods from the Netherlands or from the EU, and that, consequently, they do not need any export licences.

Terrorists may, for example, collect material for an attack in the target country itself. Or they may buy rather small amounts of goods, amounts that, from a military perspective, would be irrelevant. Where the acquisition of knowledge is concerned, terrorists may be interested in unusual parts of studies or training courses.

Reasons for Nation's Interest in WMD

States seek to acquire WMD for a variety of reasons. For some, they represent prestige and power. In a world where civilian technology is growing vastly more useful and respected, some still view WMD as an avenue to demonstrate technological prowess and obtain international status. Some states seek WMD to deal with perceived regional threats or to gain an edge in future conflicts, realizing too late that the one of the outcome is a neighbourhood arms race and international isolation (Hollun, 2017).

Global Response and International Treaties

The international community faces serious problems in organizing collective responses in the face of the threat of proliferation of WMD. The international community remains consumed by a divisive debate on the respective advantages and disadvantages of unilateral versus multilateral responses. Difficulties in finding international consensus intensified after the terrorist attacks in the US. Some perceive proliferation threats to be imminent and emanating from certain states. Other countries place emphasis on threats posed by the weapons themselves and consider the threats to be longer term. Consequently, the arguments for or against a particular approach to proliferation threats are driven by the nature of threat perception for individual states.

The end of the Cold War, saw the US and its allies greater put emphasis on what they call “ad hoc initiatives” or unilateral responses in order to address weaknesses or gaps in the multilateral regimes until these could be closed in the negotiations process. Examples include strengthening the Nuclear Suppliers Group and the Australia Group.

The US Congress established the Nunn Lugar program in 1991, commonly known as Cooperative Threat Reduction (CTR), to reduce threats posed by poorly guarded NBC arsenals of the former Soviet Union. These developments were balanced by important developments in the multilateral nonproliferation framework, such as the Comprehensive Test Ban Treaty (CTBT) and others.

In recent times, unilateral responses to proliferation threats have become even more prominent as alternatives to enhance the multilateral framework. The US has formally retreated from a number of international nonproliferation instruments including the Anti-Ballistic Missile Treaty, the CTBT, and the Ad Hoc Group negotiations for the Biological Weapons Convention. After the US attack, there has been notable resistance by the US to engage in any multilateral negotiations. Instead, the terrorist attacks of the US spurred a new generation of ad hoc initiatives, which include the Proliferation Security Initiative (PSI) and the G8 Global.

After World Wars I and II, when the impact had become visible of the use of combat gases and nuclear bombs respectively, international treaties were concluded in order to restrict the use of such weapons of mass destruction. In addition to these treaties, several agreements were concluded between industrialized countries in order to control the export of goods that can be used for the production of weapons of mass destruction, the so-called Export Control Regimes.

Nuclear Nonproliferation Treaty (NPT 1968)

The nuclear Non-Proliferation Treaty (NPT) is the only legally binding multilateral agreement that commits signatory states to an active pursuit of disarmament. It is a major example of an attempt to govern the development and use of technology, in this case, one of the most powerful technologies

ever developed. The Nuclear Nonproliferation Treaty (NPT), formally called the Treaty on the Nonproliferation of Nuclear Weapons, is the cornerstone of the international effort to halt the proliferation, or spread, of nuclear weapons. The NPT was first signed in 1968 by three nuclear powers—the United States, the Soviet Union, and the United Kingdom and by nearly 100 states without nuclear weapons. It came into force in 1970, and by the mid 1990s it had been signed by 168 countries. The NPT distinguishes between nuclear-weapon states and non-nuclear-weapon states. It identifies five nuclear-weapon states: China, France, the Soviet Union, the United Kingdom, and the United States (Holloway, 1994).

The treaty had three main provisions. First, it prohibited the declared nuclear states the United States, the Soviet Union, Great Britain, France, and the People's Republic of China from transferring nuclear weapons to nonnuclear states. Nonnuclear states were not allowed to receive or manufacture nuclear weapons. Second, the treaty protected the peaceful uses of nuclear energy by all states. International Atomic Energy Agency safeguards would assure that nuclear energy was not diverted into nuclear weapons. Third, the treaty obligated nuclear weapons states to "pursue negotiations in good faith" for "general and complete disarmament."

The Non-Proliferation Treaty (NPT, 1968) seeks to prevent the proliferation of nuclear weapons outside the five nuclear-weapon states; the United States of America, the Russian Federation, the United Kingdom, France and the People's Republic of China). The treaty prohibits the development or procurement of nuclear weapons by non-nuclear-weapon-state parties. This treaty was renewed for an indefinite period of time in 1995. The International Atomic Energy Agency (IAEA) is responsible for the implementation of the treaty.

Article II forbids non-nuclear-weapon states that are parties to the treaty to manufacture or otherwise acquire nuclear weapons or nuclear explosive devices. Article III concerns controls and inspections that are intended to prevent the diversion of nuclear energy from peaceful uses to nuclear weapons or explosive devices. These safeguards are applied only to non-nuclear-weapon states and only to peaceful nuclear activities. Article IV provide all parties to the treaty, including non-nuclear-weapon states, to conduct nuclear research and development for peaceful purposes. Since 1975, NPT signatory countries have held a review conference every five years to discuss treaty compliance and enforcement (Carlisle, 2001).

Under the Dutch Import and Export Act, it is obligatory to have a licence for the export of goods mentioned on Export Control Regime lists of proliferation-sensitive items. A similar provision has also been included in the European export regulations.

The NPT, in both its successes and failures, exemplifies efforts to develop mechanisms of international governance for technologies of international significance. In this respect it may be compared to the Montreal Protocol for the reduction of the emissions of chlorofluorocarbons (CFCs) or the Kyoto Protocol for the reduction of greenhouse gas emissions.

The Geneva Protocol (1925)

The Geneva Protocol (1925) prohibits the use of chemical and bacteriological weapons against other states.

The Biological Weapons Convention (BWC, 1972)

The Biological Weapons Convention (BWC, 1972) prohibits the parties to develop, possess and produce biological and toxic weapons and to transport these weapons to third countries. The Convention has been signed by 144 countries.

Nuclear Suppliers Group (NSG 1976)

In 1976 a number of big industrialized countries started a consultative group under the name of Nuclear Suppliers Group (NSG), focused on additional export control measures to prevent the proliferation of nuclear goods and technology for nuclear and radiological weapons.

Australia Group (AG 1985)

In 1985 Australia initiated discussions between industrialized countries about preventing the proliferation of chemical and biological weapons through export control. The resulting export control regime is called Australia Group (AG).

Missile Technology Control Regime (MTCR 1987)

In 1987 some industrialized countries made a number of agreements on the export of equipment, components and technology for systems to be used for the delivery of chemical, biological and

nuclear weapons. This regime is called the **Missile Technology Control Regime (MTCR)**. 'Means of delivery' are understood to mean launch systems such as ballistic missiles, cruise missiles, unmanned aerial vehicles, etc.

The Chemical Weapons Convention (CWC, 1993)

The Chemical Weapons Convention (CWC, 1993) prohibits the development, production, stockpiling, transfer and use of chemical weapons. The Chemical Weapons Convention came into effect on 29 April 1997. At present it has 146 Member States. The rectifiers are entitled to verify each other's compliance with the Convention's rules for development, production, stockpiling and transfer of chemical weapons.

The Hague-based Organization for the Prohibition of Chemical Weapons (OPCW) is responsible for the implementation of the Chemical Weapons Convention.

The Wassenaar Arrangement (WA 1995)

In 1995 a number of agreements were made on conventional weapons between the NATO Member States, Russia and a number of eastern European countries with the principal aim to gain insight into arms transports and to prevent accumulations of weapons in trouble spots. This export control regime is called Wassenaar Arrangement (WA), after the place where it was set up.

The Hague Code of Conduct (HCOC 2002)

The Hague Code of Conduct (HCOC, 26 November 2002) is an international code of conduct that commits subscribing states to prevent and curb the proliferation of ballistic missile systems capable of delivering weapons of mass destruction. 104 States have now signed the Code.

List of Some important Treaties on WMD

*Washington Naval Treaty, 1922–1939. set limitations on construction of battleships, battle cruisers, and aircraft carriers as well as tonnage quotas on cruisers, destroyers, and submarines between the United States, the United Kingdom, Japan, France, and Italy.

*Partial Test Ban Treaty, signed and entered into force 1963. Prohibited nuclear weapons testing in the atmosphere

*Outer Space Treaty, signed and entered into force 1967. Prohibited deployment of weapons of mass destruction, including nuclear weapons, in space

*Seabed Arms Control Treaty, signed 1971, entered into force 1972. Prohibited underwater nuclear tests

*Strategic Arms Limitation Treaty (SALT I), signed and ratified 1972, in force 1972–1977.

The Role of United Nations (UN)

Since the inception of the United Nations, the organisation has played important roles in seeking for solutions to the threats posed by nuclear, chemical, and biological weapons. The first substantive decision of the UN in 1946, witnessed the General Assembly (GA) adopt a resolution establishing the United Nations Atomic Energy Commission (UNAEC) as a subsidiary body of the United Nations Security Council (UNSC). This early decision by the GA underlined the authoritative role of the UNSC in addressing threats to international peace and security as envisioned by the UN Charter; including those posed by nuclear weapons.

The UNSC charted new territory in its enforcement role by establishing UNSCOM in 1991 and UNMOVIC in 1999. Under UNSC resolutions, both UNSCOM and UNMOVIC were given the mandate to uncover and dismantle Iraq's NBC and ballistic missile programs; a mandate that was largely made possible by Iraq's defeat in the Gulf War.

However, throughout its history, the UNSC has not consistently and resolutely addressed proliferation threats. Rather, the UNSC has acted tentatively and on a case-by-case basis. The UNSC resolution 1441 forced Iraq to reopen its territory for inspections by UNMOVIC in 2002.

The "selective enforcement" of treaty regimes by the UNSC has not only fuelled the debate on its irrelevance but also contributed to the weakening of the non-proliferation norms. Without a referral by the treaty regimes, it is unclear whether the UNSC is "entitled" or has the capacity to address proliferation threats on a continuous basis for several reasons.

In 1992, the UNSC President declared the proliferation of all weapons of mass destruction to be a threat to international peace and security. Nonetheless, not until Resolution 1540 has the UNSC been given a direct mandate to address NBC proliferation threats as they arise—either through a formal resolution declaring its authority to address the proliferation of NBC—or through specific

recommendations made by the GA. It remains to be seen whether Resolution 1540 will provide for a more proactive agenda.

In addition, without establishing its own inspections regime as it did for Iraq, it would be difficult, if not impossible, for the UNSC to act on suspected non-compliance with the treaty regimes. In order to enforce the treaty regimes or penalize proliferating states, the UNSC would need clear evidence of non-compliance.

Third, the UNSC has typically been “reactive” rather than “proactive” in its responses. In order to play a more proactive role, the UNSC would need to systematically assess proliferation threats and develop criteria for determining the appropriate response.

The UN has also played a crucial role in moving the disarmament process forward. It has served as a forum for the negotiation of new treaties and instruments and as the depositary organization for several treaties. The GA has both generated proposals for future legal instruments and voted to adopt treaties negotiated in the **Conference on Disarmament (CD)**. The CD, though not considered a UN body in the typical sense, remains the sole multilateral negotiating forum on this issue since 1978.

Role of USA in Meeting the Proliferation Challenges

The nonproliferation efforts of the United States and other nations involve a number of reinforcing elements that together delay proliferators’ efforts, narrow their choices, and channel and confine the potential threat (Craig, 1998). US acts in the following ways:

Strengthening Regimes: The U.S. government works hard to strengthen global norms against proliferation, which are critical to creating the confidence other governments need to forego such options for themselves. Achieving entry into force of the Comprehensive Test Ban Treaty (CTBT), strengthening the BWC, negotiating a Fissile Material Cutoff Treaty, enhancing IAEA safeguards, and reinforcing the Nuclear Physical Protection Convention are among the major initiatives the United States is pursuing to strengthen further the global nonproliferation regime. These initiatives will complement existing agreements and treaties, such as the NPT and the CWC, as well as informal nonproliferation regimes, such as the Missile Technology Control Regime (MTCR), the Australia Group (AG), and the Nuclear Suppliers Group (NSG).

Diplomacy is a key part of nonproliferation efforts, particularly when dealing with the early stages of a proliferation threat. U.S. diplomatic activities range from quiet but concerted diplomatic communications, to sustained bilateral dialogue, to direct involvement of the most senior levels of the U.S. government. The United States looks to other governments to undertake similar diplomatic activity reinforcing shared nonproliferation standards (Craig, 1998). In the case of North Korea, the United States encourages the DPRK to adopt responsible nonproliferation behaviour, abide by the Agreed Framework on nuclear issues, curb its indigenous missile programs, and refrain from exporting missiles. With Russia and China, the United States has a sustained and high-level dialogue to press them both firmly to cease cooperating with or supplying materials to countries of proliferation concern.

Following the nuclear tests by India and Pakistan, the United States initiated high-level bilateral talks with both governments aimed at CTBT ratification, a cutoff in fissile material production, adoption of comprehensive export controls, and restraint in their nuclear and missile programs.

Sanctions and Other Inducements: Where diplomacy and dialogue are not an option, or to supplement diplomatic efforts, the United States, often in coordination with other countries, employs sanctions or otherwise identifies negative and positive inducements to alter countries’ actions. This is the case with proliferation threats in Iraq, Libya, and Sudan.

Enhancing Regional Security: Recognizing that countries may be motivated to pursue WMD because of perceptions of regional security imbalances, the United States participates actively in a range of regional security initiatives in the Middle East, Latin America, Africa, and Asia.

Security and Economic Implications of the Proliferation of weapons of Mass Destruction

The incessant and widespread security imbalance in the world have resulted to greater concern for the proliferation of weapons of mass destruction such as nuclear weapons by nations all over the world. This concern is due to the fact that these weapons of mass destruction have posed a nuclear threat to both the “Superpowers” and the rest countries of the world, knowing fully well that the nuclear

weapons and the means to deliver them could inflict terrible damage on the world security and economy (Idahosa et al, 2013).

The crucial point is that in a political system when there is a nuclear crisis in some advance nations such as Japan, North Korea, Ukraine, etc, the global political and economic system is affected in one way or the other and the issue of security cannot be separated from human existence. It is therefore important that countries of the world should fight against the production as well as the acquisition and trade of weapons of mass destruction.

Ryenold (2019) argued that there is not anywhere on the planet that is truly safe politically and economically from the threats of weapons of mass destruction (WMD). Indeed, the threat to national economy and security by the deliberate use of these weapons impacts every living person. Whether by hostile nations or by terrorism, these weapons present a clear and present danger to all nations. The proliferation of WMD has risen dramatically since the fall of the former Soviet Union and other failed nation states. In addition, there is great concern regarding the spread of scientific knowledge among terror groups who can produce chemical and biological weapons with little technical expertise. Both the proliferation of WMD and spread of scientific knowledge to terrorists present a global WMD threat.

The global proliferation of weapons of mass destruction (WMD) presents a clear and present danger to global security. Unlike conventional weapons that confine themselves to a defined and targeted area, WMD's cross international boundaries and borders and thus threaten global security and economy.

CONCLUSION

This paper discussed international response on weapons of mass destruction. The paper briefly examined the types of WMD and their effects on global security threats. The response of international community was discussed with special attention to the various treaties. The role of US and UN in nonproliferation of WMD was discussed. The discussion in the paper revealed that the proliferation of WMD is a threat to global security.

Suggestion for Collective Actions

1. Responses to NBC threats require a balanced approach between holism and distinctiveness.
2. Past cases of proliferation demonstrate that the international community's ability to respond collectively to such cases often depends more on threat perceptions than on verifiable facts of non-compliance.
3. Some states have reversed their proliferation activities while others continue to proliferate.
4. The rejection of NBC by some states and the pursuit thereof by others also indicates that non-proliferation efforts should be tailored to some degree.
5. The threat of terrorists gaining access to NBC is inextricably linked to state possession of such weapons.
6. The enforcement of the treaty regimes is critical for their lasting legitimacy.
7. For collective action, there is need for legal standard for responding to states under suspicion of proliferation activities.

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