

UNIVERSITETI I EVROPËS JUGLINDORE УНИВЕРЗИТЕТ НА ЈУГОИСТОЧНА ЕВРОПА SOUTH EAST EUROPEAN UNIVERSITY **FACULTY OF LAW**

POSTGRADUATE STUDIES – SECOND CYCLE INTERNATIONAL LAW

THESIS: THE LEGAL FRAMEWORK OF NUCLEAR WEAPONS IN INTERNATIONAL LAW

CANDIDATE Semran Murtezani **MENTOR** Prof. Dr. Bekim Nuhija

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Abstract: Nuclear weapons are one of the issues that preoccupy the international system, international relations, international law, and obviously due to the high danger of these weapons, it preoccupies and worries all of humanity. In this context, with the latest developments in the Ukraine-Russia war, for the population around the globe, the "nuclear anxiety" has also been reactualized. The research examines the nine states that possess nuclear weapons, and argues for their efforts to modernize their arsenal. At the same time, the thesis presents the history and origins of the creation of nuclear projects of these countries, and the total nuclear arsenal they currently possess. The main part of the paper is focused on the elaboration of international multilateral instruments, and at the same time deals with the history of the development of these instruments for the reduction of nuclear weapons of states possessing nuclear weapons, as well as in general the role of these instruments for the phenomenon of nuclear weapons development.

Keywords: nuclear weapons, international law, nuclear weapon states, non-nuclear weapon states

Апстракт: Нуклеарното оружје е едно од прашањата кои го преокупираат меѓународниот систем, меѓународните односи, меѓународното право и очигледно поради високата опасност од ова оружје го преокупира и загрижува целото човештво. Во овој контекст, со последните случувања во војната Украина-Русија, за населението ширум светот, повторно се актуелизираше "нуклеарната вознемиреност". Истражувањето ги испитува деветте држави кои поседуваат нуклеарно оружје и за нивните напори да го модернизираат својот арсенал. Во исто време, истражувањето ја прикажува историјата и потеклото на создавањето нуклеарни проекти на овие земји, како и вкупниот нуклеарен арсенал што тие моментално го поседуваат. Главниот дел од истражувањето е фокусиран на разработката на меѓународните мултилатерални инструменти, а воедно и со историјата на развојот на овие инструменти, одредбите што ги содржат и нивната улога во однос на ефективноста на овие инструменти за намалување на нуклеарното оружје на државите кои поседуваат нуклеарно оружје, како и воопшто улогата на овие инструменти за феноменот на развој на нуклеарно оружје.

Клучни зборови: нуклеарно оружје, меѓународно право, држави кои поседуваат нуклеарно оружје, држави кои не поседуваат нуклеарно оружје

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Abstrakt: Armët bërthamore janë një ndër çështjet që preokupojnë sistemin ndërkombëtar, marrëdhëniet ndërkombëtare, të drejtën ndërkombëtare, dhe padyshim, për arsye të rrezikshmërisë së lartë të këtyre armëve, e preokupon dhe shqetëson popullatën në mbarë globin. Në këtë kontekst, me zhvillimet e fundit në luftën Ukrainë-Rusi, për popullatën në mbarë globin, është riaktualizuar edhe "ankthi bërthamor". Punimi trajton nëntë shtetet që posedojnë armë bërthamore, dhe argumenton përpjekjet e tyre për modernizim të arsenalit të tyre bërthamor. Në të njëjtën kohë në punim paraqitet historia dhe zanafilla e krijimit të projekteve bërthamore të këtyre shteteve, dhe totalin e arsenalit bërthamor që posedojnë aktualisht. Pjesa kryesore e punimit është e fokusuar në elaborimin e instrumenteve shumëpalëshe ndërkombëtare, dhe në të njëjtën kohë trajton historikun e zhvillimit të këtyre instrumenteve, dispozitat që ata përmbajnë, dhe rolin e tyre në drejtim të efektivitetit të këtyre instrumenteve për reduktim të armëve bërthamore nga shtetet që posedojnë armë bërthamore, si dhe në përgjithësi rolin e këtyre instrumenteve për fenomenin e zhvillimit të armëve bërthamore.

Fjalët kyçe: armët bërthamore, e drejta ndërkombëtare, shtete që posedojnë armë bërthamore, shtete që nuk posedojnë armë bërthamore

List of abbreviations

- **NW** Nuclear Weapons
- WMD Weapons of Mass Destruction
- **NWS -** Nuclear Weapon States
- FBI Federal Bureau of Investgation
- KGB (russ.) Committee for State Security
- **NPT** Treaty on the Non-Proliferation of Nuclear Weapons
- NWFZ Nuclear Weapons Free-Zones
- SPNFZT South Pacific Nuclear Free Zone Treaty
- SEANWFZ Southeast Asia Nuclear-Weapon-Free Zone
- ANWFZ African Nuclear-Weapon-Free Zone
- CANWFZ Central Asian Nuclear-Weapon-Free Zone
- **CTBT** Comprehensive Nuclear Test-Ban Treaty
- **CPPNM -** Convention on the Physical Protection of Nuclear Material
- **TPNW -** Treaty on the Prohibition of Nuclear Weapons
- **ICJ** International Court of Justice
- IHL International Humanitarian Law
- CNS Convention on Nuclear Safety

INTRODUCTION

'a nuclear war cannot be won and must never be fought'

Nuclear weapons were presented for the first time in the process of development of the Second World War and are considered, by most authors, as the reason for the end of the Second World War. Since the appearance of these weapons on the scene until today, they have constantly presented a preoccupation for everyone, due to the extraordinary danger that these weapons possess in the event of their use. They, at the same time, present the most unique weapons ever created in the history of mankind. Humanity has never before created a weapon with which it guarantees its own destruction. This is because in the case of comparison with conventional weapons, nuclear weapons in the event of any war between states where nuclear weapons will be used, there is a guarantee that the enemy state can disappear or disappear as a state, since Nuclear Weapon States guarantee the destruction of the population of that state and all the necessary means to develop a normal life, in fact life disappears in that state. And in this case, the destruction of humanity can be foreseen in the event that the nuclear weapons (in case of a war where the attacked country has the ability to defend itself), therefore nuclear weapons (in case of a war where the attacked country has the ability to defend itself), therefore nuclear weapons are unique.

The thesis aims to research two aspects: the nuclear journey of states that possess nuclear weapons, from the initiative to create nuclear projects to the first test, and their comparison with the nuclear arsenals they currently possess, and on the other hand, the thesis aims to research the aspect of the legal framework of nuclear weapons in international law, limited to legally binding multilateral treaties, where it also puts forward the main hypothesis that current international law is not effective in restraining states from modernizing nuclear programs and arsenals. This is because, as will be argued, regardless of the reduction of the total number of nuclear weapons, almost every country is trying to modernize their nuclear programs. In particular, the war in Ukraine and Russia has strongly revived the nuclear weapons debate, with the statements of the Russian president, Vladimir Putin, during his speech at the St. Petersburg International

¹ 1985 statement by US President Ronald Reagan and Soviet General Secretary Mikhail Gorbachev and restated by US President Joe Biden and Russian President Vladimir Putin in 2021

Economic Forum saying that "everyone needs to know that we have it (nuclear weapons) and we will use it if necessary to protect our sovereignty".

During the work of this thesis, two main methods were used as the historical method - this method has helped to gather knowledge about the states that have nuclear weapons, more precisely the history of how they started to create nuclear projects, and on the other hand through this method historical knowledge was collected for the instruments related to nuclear weapons, and the legal method - through this method were analysed the principal legal sources regarding nuclear weapons and the function they perform in the current international law.

Four research questions will be answered in this scientific work, as well as:

1. What is the history of nuclear weapons?

2. Who has them now and how many are there?

3. What is the role of international instruments in regard of development, testing, production, stockpiling and transfer of nuclear weapons?

Hypotheses

1. Current international law is not effective for nuclear-weapon states to eliminate their nuclear weapons

2. The nuclear-weapon states are constantly striving to modernize their nuclear arsenal

CHAPTER 1

1. The history of nuclear weapons

1.1. The evolution of nuclear weapons

The discovery of radioactivity in Paris in 1896 was the first step on a circuitous path led to the development of nuclear weapons. Marie and Pierre Curie found two new elements, polonium and radium. The history of nuclear weapons began with this historic and extraordinary development in the field of physics. After the discovery of this formula, physics centers in different parts of the world began to intensify research. With ups and downs, research in this area continued until 1939, mainly in western countries. The most intense impetus for scientific research on radioactivity intensified after 1939, when states began with concrete projects to develop nuclear programs. The dynamics of the plans of the states for the creation of nuclear weapons differs from state to state, for various reasons, starting from the personnel ones, where a considerable number of experts with deep knowledge were needed, then the financial ones, because the nuclear weapons projects required a very large budget for successful implementation, which especially for the countries that were part of World War II in this case the Soviet Union, was extremely challenging.

In fact, the history of nuclear weapons has been accompanied in parallel with two greatest wars in human history, the World War I, with the development of research that will be a precursor to the creation of nuclear weapons, and World War II, where on the one hand took place war, on the other hand, the work to create nuclear weapons, but no one expected that in a short time would be created nuclear weapons with the potential to wipe out life on earth.

As will be elaborated in the following chapters, the United States is the first to develop the first atomic bomb, test it, and then use it in foreign territory during the war. The United States again ranks first in terms of what it had used nuclear bombs in war and foreign territory, namely in Hiroshima and Nagasaki, which no country has managed to realize until today, as long as nuclear weapons still exist. As a result, most analyzes allude to the fact that the use of these two atomic bombs, and in particular the atomic bomb dropped on Nagasaki, was the cause of the end of World War II. Criticism is focused on that the United States has not yet apologized to the victims and survivors of the atomic bombings in the two cities. The second country to develop nuclear weapons and test them is the Soviet Union. After the testing of the atomic bomb by the Soviet Union, began the arms race of these two countries that will accompany the Cold War. Both the US and the Soviet Union were in a constant battle over which of them would win the monopoly on the nuclear weapons industry. Investments in the budget, in scientific staff and research, were at an extraordinary level. These two states, from the beginning until today, remain two states in close competition of nuclear weapons race.

Not coincidentally, as today 90% of the nuclear weapons that exist all over the world belong to the USA and Russia, but with claims that in the future China may join as a serious competitor in the development of nuclear weapons. Other countries, such as France, Great Britain, India, Pakistan, Israel and North Korea, have joined the caravan of the nuclear weapons industry, but their impact in the race of these weapons is solid compared to the USA and Russia.

The history of nuclear weapons is divided into two periods: the first period of nuclear weapons, and the second period of nuclear weapons. The first period of nuclear weapons (1945-1990) is characterized by the Cold War and the "silent war" of the states that possessed nuclear weapons, and in this period nuclear weapons possessed only the states recognized by the NPT Treaty as USA, USSR (Russia), France, United Kingdom and China. Meanwhile, the second period of nuclear weapons begins after 1990, ie. with the end of the Cold War, and this period is characterized by the fact that new states will emerge that will possess nuclear weapons, in addition to the aforementioned states.



Figure 1: Estimated Global Nuclear Warhead Inventories 1945 - 2022²

The productivity of nuclear weapons reached its peak in 1986 where there was a total of 70.300 nuclear weapons. Meanwhile, according to statistics, today there are around 12.705 nuclear weapons. It is difficult to determine the concise and accurate number of nuclear weapons, as not all countries are totally transparent in making public the true number of nuclear weapons they possess. However, "In the 1960s, 31 countries had nuclear weapons programs, and 22 countries decided to deliver these weapons."³

Today, nuclear weapons represent the most dangerous type of weapon in human history, due to their absolute destructive capacity, compared to conventional weapons. By definition, nuclear weapon is a "device designed to release energy in an explosive manner as a result of nuclear fission, nuclear fusion, or a combination of the two processes. Fission weapons are commonly referred to as atomic bombs. Fusion weapons are also referred to as thermonuclear bombs or,

² Hans M. Kristensen, Matt Korda, Roberts Norris, Federation of American Scientists, 2022. Available at: <u>Status of</u> <u>World Nuclear Forces – Federation Of American Scientists (fas.org)</u>

³ Cristopher Coker, A mund të eliminohet lufta? Logos-A, 2022, p. 19.

more commonly, hydrogen bombs."⁴ As a consequence, they release immense quantities of heat and energy, and powerful and prolonged radiation, which have the capacity to cause harm to human health, agriculture, natural resources, the living environment in which they are used, and especially prolonged radiation, which is the main unique dangerousity that these weapons have, as the radiation can be reflected by the people who have been exposed to it for many generations to come. Also, "nuclear explosions are also accompanied by radioactive fallout, lasting a few seconds, and remaining dangerous over an extended period of time, potentially lasting years."⁵ These were especially evident during the bombings in Hiroshima and Nagasaki, where today people who were not born at the time the atomic bomb exploded suffer the effects of radiation, as a result caused by in utero exposure to high levels of radiation as a fetus. These people are characterized by smaller than normal head size, and babies born with this condition suffer from intellectual and physical disabilities, and it is called as atomic bomb microcephaly.

Other characteristics of nuclear weapons are that "nuclear explosions are measured in kilotons, which is equivalent to one thousand tons of dynamite, and in megatons, which is equivalent to one million tons of dynamites. For example, a 5-kiloton weapon creates an explosion equal to 5,000 tons of dynamite, while the explosion of a 2-megaton nuclear warhead equals 2,000,000 tons of dynamite"⁶ and that "the explosion of a nuclear creates phenomenal quantities of heat upon detonation: between 60 and 100 million degrees centigrade. Anyone within a radius of 2.5 km from ground zero and who is unprotected will receive third degree (full thickness) burns, which almost certainly be fatal."⁷

"The nine nuclear-armed states—the United States, Russia, the United Kingdom, France, China, India, Pakistan, Israel and the Democratic People's Republic of Korea (North Korea)—together possessed an estimated 13.400 nuclear weapons at the start of 2020. This marked a decrease

⁴ Definition: nuclear weapon, Britannica. Available at: <u>nuclear weapon | History, Facts, Types, Countries, Blast</u> <u>Radius, & Effects | Britannica</u>

⁵ Joseph Siracusa, Nuclear Weapons: A Very Short Introduction, Oxford University Press, 2008, p. 5.

⁶ John Baylis, James J. Wirtz, Colin S. Gray, Eliot Cohen, Strategjia në botën bashkëkohore, UET Press, Tiranë, 2013, p. 25.

⁷ Gro Nystuen, Annie Golden Bergasel, Stuart Casey-Maslen, Nuclear Weapons under International Law, Cambridge University Press, 2014, p. 14.

from the 13.865 nuclear weapons that SIPRI estimated these states possessed at the beginning of 2019."⁸

Recent studies regarding NW are alarming. Researchers study the impact of NW in different spheres of daily life. Some researchers have analyzed the impact of these weapons on food supplies, based on possible scenarios, they have concluded that "more than 2 billion people could die from a nuclear war between India and Pakistan, and more than 5 billion could die from a war between the United States and Russia."⁹ The following figure shows in detail the possible scenario of a nuclear war and the destructive effects of these weapons, especially in terms of food supplies.

⁸ Armaments, Disarmament, and International Security, SIPRI Yearbook 2020, *Stockholm International Peace Research Institute*.

⁹ Xia, L., Robock, A., Scherrer, K. et al. Global food insecurity and famine from reduced crop, marine fishery and livestock production due to climate disruption from nuclear war soot injection, *Nat Food* 3, 591 (2022). Available at: https://doi.org/10.1038/s43016-022-00573-0

Soot (Tg)	Number of weapons	Yield (kt)	Number of direct fatalities	Number of people without food at the end of Year 2
5	100	15	27,000,000	255,000,000
16	250	15	52,000,000	926,000,000
27	250	50	97,000,000	1,426,000,000
37	250	100	127,000,000	2,081,000,000
47	500	100	164,000,000	2,512,000,000
150	4,400	100	360,000,000	5,341,000,000
150	4,400	100	360,000,000	°5,081,000,000

The 5 Tg case scenario is from ref. ¹⁶ for an India-Pakistan war taking place in 2008; the 16-47 Tg cases are from ref. ¹⁰ for an India-Pakistan war taking place in 2025; and the 150 Tg case is from ref. ¹⁰, which assumes attacks on France, Germany, Japan, United Kingdom, United States, Russia and China. The last column is the number of people who would starve by the end of Year 2 when the rest of the population is provided with the minimum amount of food needed to survive, assumed to be a calorie intake of 1,911 kcal per capita per day, and allowing for no international trade; from Supplemental Information, Supplementary Table 5, the Partial Livestock case, in which 50% of livestock grain feed is used for human consumption, and 50% of livestock grain feed is used to raise livestock, using the latest complete data available for the year 2010. For 2010, the total population of the nations used in this study was 6,700,000,000. There are many other scenarios in which these amounts of soot could be produced by a nuclear war, and the scenarios we use are only meant to be illustrative examples. The last column is the case with the fewest number of deaths without international trade, and other cases are available in the Supplementary Information. ¹⁰

Figure 2: Number of weapons on urban targets, yields, direct fatalities from the bomb blasts and resulting number of people in danger of death due to famine for the different scenarios

1.1.1. Hiroshima

In 1945 the world was experiencing World War II and the extremely devastating consequences of the war on people and wealth. The states used every possible strategy to won the war. In addition to World War II, research was under way to create the most destructive weapon in the human history. The United States of America was in absolute supremacy and held a monopoly on the conduct of this research. At the Potsdam Conference led by the United States, Great Britain and the Soviet Union, gathered for the purpose of allowing the three leading parties to plan the postwar peace. At the time of the Conference, President Truman received the most important news in the history of mankind, the crew of the Manhattan Project announced that they had successfully tested the first atomic bomb. "Roosvelt and Churchill had agreed on September 1944 that when a 'bomb' is finally available, it might perhaps, after mature consideration, be

¹⁰ Ibid., p. 587.

used against the Japanese.¹¹ This historical development gave the US diplomatic supremacy during conference negotiations. Successful testing of the atomic bomb was secret, so when President Truman claimed at the conference that they had succeeded in creating a bomb with an extraordinary destructive capacity, Soviet Union took it in reserve.

The war was going on. The United States and its allies were devising strategies on how to get Japan to surrender. They had already begun to determine in which countries they would have to detonate the nuclear bomb. They were concentrating on designating a city in Japan that had not been damaged by WWII. Kyoto and Hiroshima topped the list. But because Kyoto was a city of great historical value, they withdrew. The decision was made to detonate the bomb in the city of Hiroshima.

On August 6, 1945, a United States of America B-29 bomber took off from Tinian Island and delivered a gun-assembly uranium - 235 bomb on Hiroshima at 8.15 a.m., local time. The explosive yield was equivalent to about 13 kilotons of TNT. Its consequences were devastating. "A thick cloud of smoke mushroomed into the sky to a height of 12.000 meters. Death was instantaneous for some; for others it was much slower. By the end of the year 145.000 people are estimated to have died from the effects of that one bomb; five years later the number of deaths resulting from the bomb had reached 200.000."¹² Kazuko Kawada, as a witnesses of the bomb, describes the long-lasting consequences radiation released by the bomb, that "I heard that schoolmates were still dying one after another. This came as a big shock. Fear pressed on me heavily. I was afraid of "that day" would get me next that fear stayed in my heart a long time"¹³ and Setsuko Morita describing that "the next day, I came down with a fever near 40 degrees that lasted a week. The doctor gave up on me."¹⁴ For the first time the world was being introduced to a new destructive weapon that had not existed before, and the entire international community was astonished, because they believed that even if the atomic bomb was ever created, they did not believe it would be used.

¹¹ David Holloway, *Stalin and the Bomb*, Yale University Press, 1994, p. 120.

¹² Ibid., p. 127.

¹³ Jamie Poolos, *The Atomic bombings of Hiroshima and Nagasaki*, Chelsea House Publishers, 2008, p. 28.

¹⁴ Ibid., p. 37.

Hiroshima represents a special era in the history of mankind and the history of nuclear weapons. For the first time in the history of nuclear weapons an atomic bomb is used in a foreign territory. Since Hiroshima, no other country possessing nuclear weapons has attacked or detonated atomic bombs in foreign territory. Historically, the United States is the only country to have acted in this way.

1.1.2. Nagasaki

The detonation of the atomic bomb in Hiroshima, which was intended surrender of the Japan, did not achieve its purpose. In order to put an end to the World War II, the United States and its allies were willing to use any mechanism at with all costs to force Japan to surrender. President Truman had stated that "if they do not accept our terms, they may expect a rain of ruin from the air the like of which has never been seen on this earth."¹⁵ Despite all the pressure, Japan did not give up.

At 11:02 a.m., local time, on August 9 the United States of America exploded a plutonium bomb over Nagasaki. Even in the start the crew witnessed difficulties as a result of weather conditions, when they arrived, they found a thick cloud cover that prohibited them from seeing the target. Just as the flight crew was about to give up, the clouds parted. At 11:01 a.m., they got a visual on the city and let the bomb go."¹⁶ The explosive yield was 21 kilotons. Bombs detonated on Japan were different; the first bomb "Little Boy" used a uranium core, and the second bomb "Fat Man" used a plutonium bomb. The reason to use two different bombs was to determine which was more effective. The second bomb dropped onto Nagasaki, was much more powerful, but less effective.

 ¹⁵ Jamie Poolos, The Atomic bombings of Hiroshima and Nagasaki, Chelsea House Publishers, 2008, p. 100.
 ¹⁶ Ibid., p. 101.



Figure 3: Nagasaki after the explosion of the bomb¹⁷

By the end of the year over 70.000 people, it is now estimated, had died from that one bomb. For the second time, Japan and the world was shocked with detonation of the bomb on Nagasaki. The *hibakusha* as Ryoko Iwanaga describes the day when the bomb was dropped and said that "my hair was sticking out in all directions like a bird's nest. The small pieces of glass still sticking into my head were sparkling. Countless tiny pieces of glass were in my head and face. I was badly cut in at least 38 places."¹⁸ Also, Yasuko Nakao describes that "we watched our house burn from a field in front of the shelter. The fire burned bright red, making the night as bright as day. We could do nothing but watch, in a daze."¹⁹

Immediately after the Nagasaki bombing, Japan did not surrender. After a series of talks between the allies and Japan, where the US had already made preparations for the detonation of a third atomic bomb, Japan finally decides to surrender, where WWII ends.

¹⁷ United States Strategic Bombing Survey: The Effects of the Atomic Bombs on Hiroshima and Nagasaki, June 30, 1946, p. 2.

¹⁸ Ibid., p. 269.

¹⁹ Ibid., p. 282.

1.2. Recognised Nuclear Weapons States (NWS)

1.2.1. The United States of America

"Now I am become death, destroyer of worlds."

The United States of America is the only country that led the history of nuclear weapons. On 11 October 1939, scientist Albert Einstein wrote a letter to President Truman to inform that "recent research on chain reactions utilizing uranium made it possible that large amounts of power could be produced by a chain reaction and that, by harnessing this power, the construction of "extremely powerful bomb" was conceivable."²⁰ The other concern of the scientist Alber Einstein was that Nazi Germany had begun preparations in this regard. However, this concern does not achieve its objectives as Hitler turns out to be unsuccessful in creating a nuclear program. President Truman informs scientist Albert Einstein that he has begun preparations and has set up a research team to deal with the further development of this issue.

The whole process would take place in a very secret way. The team was formed in 1943 under the leadership of Julius Robert Oppenheimer, who at the age of 22 had completed his PhD in physics, together with General Leslie Groves. The project would be named "The Manhattan Project", located at the secret laboratory in Los Alamos, New Mexico, previously a small ranch school near Santa Fe. "A massive industrial and scientific undertaking, employing 65.000 workers, the Manhattan Project involved many of the world's great physicists in the scientific and development aspects – the project was spread over 30 sites in the United States of America and Canada."²¹ All employees at the Manhattan Project did their job in the best possible conditions, whether in terms of welfare, financial, and social. The laboratory in Los Alamos included space for recreation, entertainment, library and more.

Research continued until 1945 when The Manhattan Project team was ready to test the first atomic bomb. On 16 July, 1945, at Trinity, the code-name for the Manhattan Project test site in Alamogordo, New Mexico, a group of officials and scientists, led by the two main figures of the project General Groves and Oppenheimer witnessed the first explosion of an atomic bomb. This was the world's first nuclear explosion.

²⁰ Gostling, *The Manhattan Project: making the atomic bomb*, United States Department of Energy, 2010, p. 1.

²¹ Joseph Siracusa, Nuclear Weapons: A very short introduction, Oxford University Press, 2008, p. 20.



Figure 4: Trinity test explosion²²

"For a fraction of second, the light produced by Trinity was greater than any ever before produced on earth, and could have been seen from another planet."²³

With this historic development, the United States of America manages to gain the role of hegemon in international relations. Both the development of the project and its testing were done in secret way. "The President would have had to take the responsibility of telling the world that we have this atomic bomb and how terrific it was. And if it didn't prove out what would have happened to the way the war went God only knows."²⁴ Also, Oppenheimer after the explosion said that "now I am become death, destroyer of worlds."²⁵

The other two major projects of the Manhattan Project will be the creation of two other atomic bombs, "Little Boy" and "Fat Man." Both of these atomic bombs will be used for the first and last time (so far) in war and in foreign territory, respectively in the territory of Japan. In particular, "Little Boy" was dropped in Hiroshima, and the "Fat Man" in Nagasaki.

²² The Trinity Test, Atomic Archive. Available at: <u>The Test (atomicarchive.com)</u>

²³ Joseph Siracusa, Nuclear Weapons: A very short introduction, Oxford University Press, 2008, p. 20.

²⁴ Richard Rhodes, *The making of the atomic bomb*, Published by Simon & Schuster, 1986, p. 640.

²⁵ Thomas Graham, *Disarmament sketches*, Seattle: Institute for Global and Regional Security Studies, 2002, p. 34.





Figure 5: The bomb "Little Boy"²⁶

Figure 6: The bomb "Fat Man"²⁷

With the successful detonation of these two bombs in Japan, the United States of America achieves its goal, namely the international monopoly in the nuclear weapons industry, and the end of the Second World War, i.e. the surrender of Japan, for which in parts for Hiroshima and Nagasaki has been described in detail. In fact, the US monopoly on the nuclear weapons industry continued until 1949, when the Soviet Union detonated its first atomic bomb. After this period, a fierce competition begins between these two countries for a monopoly in the nuclear weapons industry.

According to the World Bulletin of the Atomic Scientists, the USA until the beginning of 2022 they have established that they possess estimated 5,428 warheads. After Russia, the USA represents the second most powerful nuclear weapons country. The peak US inventory had reached was around 35.000 nuclear weapons at '60s.

The history of the United States regarding nuclear weapons is also characterized by the election of Barack Obama as president in 2009, who three months later delivered his historical speech on April 5 in Prague, Czech Republic. During the speech, he stated "so today, I state clearly and with conviction America's commitment to seek the peace and security of a world without nuclear

²⁶ Available at: <u>Nuclear Weapons: A Very Short Introduction (Very Short Introductions) by Joseph M. Siracusa -</u> <u>PDF Drive</u> p. 21.

²⁷ Available at: <u>The Los Alamos Primer: The First Lectures on How To Build an Atomic Bomb (167 Pages)</u> (pdfdrive.com) p. 81.

weapons. I'm not naive. This goal will not be reached quickly – perhaps not in my lifetime. It will take patience and persistence. But now we, too, must ignore the voices who tell us that the world cannot change. We have to insist, 'Yes, we can."²⁸ This speech of Obama ²⁹ which is later recognized to as the Prague Nuclear Agenda, raised expectations very high regarding efforts to eliminate nuclear weapons, but they were considered controversial as the Nuclear Comprehensive Test Ban Treaty was not ratified during his term (CBO), and the eventual elimination of nuclear weapons.

Nuclear weapons are supposed to be located in 24 countries, including 11 US states, and 5^{30} European countries.

1.2.2. The Russian Federation

The history of the development of nuclear weapons in the Soviet Union is characteristic and interesting. The Soviet Union and the United States of America have been the two main countries involved in the development of nuclear weapons, and in a fierce competition over which country will be the first to develop nuclear weapons, to gain a monopoly in the international system, for reasons that the development of nuclear weapons had a multidimensional impact such as political, military, economic, etc.

Some of the figures who have played a key role in the scientific aspect of the development of nuclear weapons are: Igor Kurchatov³¹, Iulii Khariton, Lev Artsimovich, and Aleksandar Leipunksii. Scientific research had been done in very difficult conditions and with almost no support from the state at the beginning of the research, but even later when the state begins to understand the strategic importance of nuclear weapons and began to invest, the support was not of the size needed. Living conditions were hard. One of the scientists describe the situation that "when Anatolii Aleksandrov went to the institute in 1930, he had to sleep with eight others in a

²⁸ The White House, Office of the Press Secretary. Available at: <u>FACT SHEET: The Prague Nuclear Agenda |</u> whitehouse.gov (archives.gov)

²⁹ Barack Obama had been awarded with Nobel Peace Prize on 9 October 2009, citing his promotion of nuclear nonproliferation.

³⁰ Belgium, Germany, Italy, the Netherlands, and Turkey.

³¹ Igor Kurchatov was also the director of the Soviet atomic bomb project and known as father of the Soviet atomic bomb.

freeizing cold room, and to cover his head with a blanket to stop the rats from gnawing his ears."³² Despite hard living and work conditions, Soviet scientists were adamant about achieving the result. After the explosion of nuclear bombs in Hiroshima and Nagasaki, Stalin realized the multidimensional importance that nuclear weapons would receive in international relations and diplomacy, and began to invest in institutes engaged in research on nuclear weapons.

After the successfully realized nuclear project by the United States of America, they have presupposed that Soviet Union can only produce an atomic bomb in more than five years; for example, "General Groves told the committee that the Soviet Union would need twenty years to build the bomb, because it was backward in science and technology and lacked uranium."³³ The Soviet Union's nuclear research industry consisted of experts in various fields from scientists, engineers, to prisoners. "Most of these – 255.000 to 361.000 worked in mining in the Soviet Union (80.000-120.000) and in Eastern Europe (175 – 241.000); 50.000-60.000 worked in construction, 20.000-30.000 in production and 5 – 8.000 in research." One of the characteristics of the development of nuclear weapons in the Soviet Union is that the project is identical to that of the United States of America, as a result of espionage. "The first Soviet atomic bomb had been a copy of the first American bomb. But the first Soviet hydrogen bomb was an original design, and the path of development pursued by the Soviet Union was different from that of the US."³⁴

³² David Holloway, *Stalin and the Bomb*, Yale University Press, 1994, p. 37.

³³ Ibid., p. 121.

³⁴ Ibid., p. 303.

Figure 7: Soviet Nuclear Sites³⁵



One of the main figures who served as the main mediator in providing information to the Soviet Union about the United States nuclear project is Klaus Fuchs, who was later persecuted by the FBI. "Fuchs himself did not place a very high value on the information he gave to the Soviet Union."³⁶ But, "Edward Teller has argued that the Soviet Union might not have had the bomb for another ten years without Fuch's help."³⁷

The FBI had begun a full-scale investigation of Fuchs in September 1949 on the basis of a message that the Soviet consulate in New York had sent to the KGB headquarters in Moscow in 1944; this message had recently been deciphered. But it was only on January 27, 1950, that

³⁵ Ibid., p. 179. ³⁶ Ibid., p. 279.

³⁷ Supra note 11, Holloway, p. 222.

Fuchs made his confession to William Skardon of MI5, and only here days later that he revealed in detail to Michael Perrin, Deputy Director for Technical Policy of the UK Atomic Agency Authority, what he had told the Soviet Union.³⁸ The information that Fuchs sent to the Soviet Union's nuclear program team was related to developments in the field of physics, and the methods used by American physicists in the nuclear project. The nuclear program team of the Soviet Union had chosen the path of espionage because they did not have access to the latest scientific developments in the field of physics, as the US after the creation of the nuclear program, decided that scientific work that is realized on the evolution of methods for creating of nuclear weapons not to be made public. All research was conducted in secret, in order for the knowledge not to be disseminated to other countries.

The Soviet Union's nuclear program, monitored by Joseph Stalin, for its team, the creation of the atomic bomb was a matter of life and death. Stalin, whose country was still under the influence of the damage caused by WWII, had "ordered" the nuclear program team that the atomic bomb at all costs should be successful, after all this investment in the nuclear program, despite being controversial issue Stalin's support in providing adequate conditions for the same.

On August 29, 1949, after extraordinary team work, the Soviet Union conducted its first nuclear test at the Semipalatinsk test site in today's Kazakhstan. The bomb had a yield of 22 kilotons. Soviet scientists, had surpassed all predictions. They succeed in extraordinary conditions to build an atomic bomb, which will change the balance of the world politics and international relations, and also to give an end to the anglo-american monopoly of the nuclear weapons. No one expected the Soviet Union to build atomic bombs in such a short time. From this point on, international relations took a totally different direction. The Soviet Union strongly will continue to develop its nuclear program, where on August 12, 1953, it detonated its first thermonuclear (hydrogen) bomb at the Semipalatinsk site. The Cold War was strongly characterized by a nuclear weapons race between the Soviet Union and the United States of America.

³⁸ Ibid., p. 302.



Figure 8: Models of the first three Soviet nuclear weapons, from left to right: the "Layer Cake" tested on August 12,1953; the 40-kiloton weapon tested in 1951; the first Soviet atomic bomb. The photograph shows the bomb casings; it was the explosive charges only that were tested. Photograph by V.I. Luk'ianov and S.A. Nazarkin, Museum of nuclear weapons, Arzamas-16.³⁹

According to the Bulletin of the Atomic Scientists, as of early 2022, Russia has a total inventory of approximately 5,977 warheads.⁴⁰ Today, Russia is one of the countries that has started with symbolic steps the creation of nuclear weapons, while today is a supernuclear power, with the largest number of nuclear weapons of all other countries. It possesses the thermonuclear bomb called *Tsar Bomba*⁴¹ with a 100-megaton capacity, the largest nuclear device ever created. It was tested on October 30, 1961, but because of a dangerousity of the test situation, when tested, it was modified to yield 50 megatons.

1.2.3. China

China first tested nuclear weapons on October 16, 1964. However, the biggest impetus for intensifying work on modernizing nuclear weapons China developed after the completion of

³⁹ David Holloway, *Stalin and the Bomb*, Yale University Press, 1994, p. 292.

⁴⁰ Hans M. Kristensen, Matt Korda, Nuclear Notebook: How many nuclear weapons does Russia have in 2022?, Bulletin of the Atomic Scientists, 2022. Available at: <u>Nuclear Notebook: How many nuclear weapons does Russia</u> <u>have in 2022?</u> - <u>Bulletin of the Atomic Scientists (thebulletin.org)</u>

⁴¹ Tsar Bomba mean "King of Bombs".

what is considered the first nuclear period (1945 -1990), and with the beginning of the second nuclear period, which means that after 1991 on the international scene appear other countries that will possess nuclear weapons.

Analyzes and observations show that China is constantly striving to modernize its nuclear arsenal, and is moving in a direction that in the future China can be an absolute competitor and surpass the arsenals of the two most powerful nuclear states like Russia and USA. According to current calculations, "China has produced a stockpile of approximately 350 nuclear warheads for delivery by approximately 280 operational land-based ballistic missiles, 72 sea-based ballistic missiles, and 20 nuclear gravity bombs assigned to bombers." ⁴²



. Satellite images show clear features of silo construction near Yumen in central China. Satellite photo source: Maxar 43 gies.

Figure 9: Silo Construction

In addition to modernizing its nuclear arsenal, China is also committed to expanding the scope of its nuclear operations. Satellite imagery presents the latest works of China in the expansion of *Lop Nur* site, which is the central site of works of its nuclear program. In this way, "based on what we can observe in the massive silo construction program, it seems possible that China's Intercontinental Ballistic Missile (ICBM) force in the foreseeable future could exceed that of either Ruissa and the United States."⁴⁴ According to the 2021 Pentagon report, China is expected

⁴² Nuclear Notebook: Chinese nuclear forces, *Bulletin of the Atomic Scientists*. Available at: <u>Nuclear Notebook:</u> <u>Chinese nuclear forces</u>, 2021 - Bulletin of the Atomic Scientists (thebulletin.org)

⁴³ Ibid.

⁴⁴ Ibid. <u>Nuclear Notebook: Chinese nuclear forces, 2021 - Bulletin of the Atomic Scientists (thebulletin.org)</u>

to have up to 700 deliverable nuclear warheads by 2027, and by 2030 China claims to possess up to 1,000 warheads.⁴⁵

1.2.4. The United Kingdom

The United Kingdom's first nuclear weapon test delivered in 3 October 1952 in a lagoon of the Monte Bello Islands in Western Australia. From the beginning of the idea of creating a nuclear program until today, United Kingdom has been and is in close cooperation with the United States of America. Its nuclear program is a program based on the style of the US nuclear program. This cooperation is related to The Mutual Defense Agreement of 1958, which agreement "allows for the sharing of classified information to develop nuclear power and weapons for military use."⁴⁶Among them, "the current UK warhead, which is called Holbrook, is believed to be highly similar to the United States' W76-0 warhead—so similar that it has appeared in the US Department of Energy's "W76 Needs" maintenance schedule".⁴⁷

Overall, the UK, despite possessing nuclear weapons, remains committed to campaigning for a world without nuclear weapons, which has reduced a large number of nuclear weapons from its program. However, the UK's nuclear deterrence philosophy is that "we would only consider using nuclear weapons in extreme circumstances of self-defence, including dhe defence of our NATO Allies, and we remain deliberately ambiguous about precisely when, how and at what scale we would contemplate their use."⁴⁸ United Kingdom's nuclear forces are not part of the NATO's integrated military command structure.

According to the World Bulletin of the Atomic Scientists report on the UK nuclear arsenal in 2021, it possesses approximately 225 nuclear warheads.

⁴⁵ Military and Security Developments Involving the People's Republic of China 2021, Annual Report to Congress, *Office of the Secretary of Defense* (USA). Available at: <u>2021 CMPR FINAL (defense.gov)</u>

⁴⁶ Center for Arms Control and Non-Proliferation

⁴⁷ Nuclear Notebook: How many nuclear weapons does the United Kingdom have in 2021, *Bulletin of the Atomic Scientists*, 2021.

⁴⁸ Securing Britain in an Age of Uncertainty: The Strategic Defence and Security Review, *HM Government*, 2010, p.
37. Available at: <u>Securing Britain in an Age of Uncertainty: The Strategic Defence and Security Review</u> (publishing.service.gov.uk)

1.2.5. France

France began the nuclear program from the end of World War II, in order to continue to pursue strategies to preserve the image of the winner even after the end of the war, and in order to protect itself from the possible threats in the future to France from the Soviet Union.

The first works on the nuclear program begin in 1945. General de Gaulle is one of the most important figures in leading the French nuclear program. He favored that France should have an independent defense strategy from all external factors and great powers, excluding the influence of the US defense aspect in Europe and NATO. For de Gaulle the possession of nuclear weapons meant "to exist by ourselves and, in case of a drama, to choose our own direction."⁴⁹

This program enjoyed support from almost all political factors, and France's nuclear program has historically been linked to the political factor in a positive context.

The dynamics of the evolution of France's nuclear program had been gradual, but with secure steps. The successful completion of Britain's nuclear program in 1952 prompted France to accelerate the work of its nuclear program. In this way, the first weapons were delivered on 1 July 1963. With the possession of nuclear weapons France considered that it had achieved the right level of prestige at the international level as the winner of World War II and as a member of the United Nations Security Council.

However, it also considered it reasonable to secede from the European Union's defense policies, ie with the United States as the guarantor of defense, and in particular to distance itself from Germany's defense policies, who as a state had no aspirations for the possession of nuclear weapons, and considered that France should always have individual mechanisms to protect the territorial integrity and vital interests of the state, which it had achieved with the nuclear weapons project. France's nuclear forces are not part of the North Atlantic Treaty Organization (NATO) integrated military command structure.

As a nuclear deterrence, "today, France maintains an ambiguous nuclear use policy, as well as a "final warning" nuclear strike policy. This policy option, developed in the 1970s, states that

⁴⁹ Bruno Tertrais, *French nuclear deterrence policy, forces and future*, Fondation pour la recherche stratégique, 2019, p. 9.

France may use nuclear weapons first in order to defend its vital interests."⁵⁰ Historically, France has shown consistency in upholding this principle of nuclear restraint. Among them, nuclear deterrence "permanently guarantees our autonomy of decision and our freedom of action within the framework of our international responsibilities, including against attempts of blackmail which could be exercised against us in the event of a crisis".⁵¹

According to the World Bulletin of the Atomic Scientists for 2019, France has up to approximately 300 warheads, and is one of the most transparent states that possess nuclear weapons, publicly declaring its nuclear arsenal over the years.

Meanwhile, France's investments in "nuclear deterrent costs, on average, €3.88 billion euros per year in the Military Planning Act 2014-2019 or about 12% of the defence budget, and it will be raised to 5 billion a year for 2019-2023."⁵²

1.3. Other nuclear-weapon states

(States that are not recognized by the Treaty on the Non-Proliferation of nuclear weapons as a nuclear weapon states)

1.3.1. India

India tested its first nuclear bomb on May 18, 1974 in Rajasthan's Pokhran, codenamed "Smiling Buddha", becoming the world's sixth nuclear power outside the five permanent members of the United Nations Security Council. The genesis of the idea for the creation of the nuclear program stems from geostrategic reasons. India has a continuous conflict with the neighboring country, Pakistan, since 1974, where both countries are independent from Great Britain, largely over the Kashmir region, to which both countries lay claim. In order to prevent possible attacks from Pakistan, India has chosen the method of creating a nuclear program, claiming the benefit of a "defense monopoly". Traditionally, India's nuclear arsenal focused on deterring Pakistan.

⁵⁰ France's nuclear inventory, Center for Arms Control and Non-Proliferation, 2019. Available at: <u>France.pdf</u> (armscontrolcenter.org)

⁵¹ White Paper on Defence and National Security, 2013, p. 69. Available at: <u>the_white_paper_defence_2013.pdf</u> (livreblancdefenseetsecurite.gouv.fr) - Search (bing.com)

⁵² Bruno Tertrais, *French nuclear deterrence policy, forces and future*, Fondation pour la recherche stratégique, 2019, p. 22.

However, they have vowed to never use nuclear weapons in a conflict, "even though the policy was weakened by India's 2003 declaration that it could potentially use nuclear weapons in response to chemical or biological attacks."⁵³

Today, "based on available information about its nuclear-capable delivery force structure and strategy, we estimate that India has produced 150 nuclear warheads"⁵⁴ and it is continuing to modernize its arsenal. The number of nuclear weapons it possesses, compared to the five-preview chapter mentioned nuclear states, is not significant in terms of number, but in terms of extraordinary importance of these weapons. The India-Pakistan conflict constitutes one of the most concerning hotspots on the planet. Therefore, the consequences can be very big, since both countries possess nuclear weapons. Recently, on March 11, 2022, India confirmed that it had accidentally fired an unarmed missile into Pakistani territory due to a technical malfunction. Pakistani officials have declared to "be mindful of the unpleasant consequences of such negligence and to avoid a repeat."⁵⁵

1.3.2.Pakistan

Pakistan's quest for the atomic bomb was in direct response to its defeat by India in December 1971, which resulted in East Pakistan. After this event, the then president of Pakistan, Zulfikar Ali Bhutto, takes the initiative to create a group of scientists who will deal with the research and development of the nuclear program. His determination for the nuclear program is very pronounced, declaring that "if India builds the bomb, we will eat grass or leaves, even go hungry, but we will get one of our own." We have no alternative."⁵⁶ Most important figure for Pakistan nuclear program was Abdul Qadeer Khan. He likely had acquired the warhead design from China. On May 28 Pakistan claimed that it had successfully detonated five nuclear devices in the

⁵³ Hans M. Kristensen, Matt Korda, Nuclear Notebook: How many nuclear weapons does Pakistan have in 2021?. Available at: <u>Nuclear Notebook: How many nuclear weapons does Pakistan have in 2021?</u> - <u>Bulletin of the Atomic Scientists (thebulletin.org)</u>

⁵⁴ Ibid.

⁵⁵ India accidentally fires missile into Pakistan, BBC. Available at: <u>India accidentally fires missile into Pakistan -</u> <u>BBC News</u>

⁵⁶ <u>Pakistan said it will 'eat grass' to get nukes. It's almost there - Times of India (indiatimes.com)</u>

Ros Koh Hills. "We estimate that Pakistan now has a nuclear weapons stockpile of approximately 165 warheads".⁵⁷

Pakistan with the current arsenal it possesses does not represent a global nuclear power, but considering the purpose of creating a nuclear program for hostile and dangerous purposes and the intensity of the conflict with India, it is one of the countries that represents the highest danger in the global spectrum, of course together with India. Pakistan is constantly trying to modernize its nuclear arsenal, and this is worrying, of course also because of the fact that the Pakistani government has never publicly disclosed the size of its arsenal. In the whole phenomenon of nuclear weapons, India and Pakistan are the center of danger for a nuclear war, since these countries are neighboring countries and both possess nuclear weapons, and are in a continuous conflict.

1.3.2. North Korea

North Korea's first origins in developing a nuclear program date back to 1956. The development of its nuclear program is linked to the cooperation with the former Soviet Union. North Korea has sent special teams of researchers to be trained in nuclear research by experts from the former Soviet Union. This collaboration turned out to be successful as the North Korean research team was trained and work began on creating the nuclear program. Thus, "by the mid-1980s, Pyongyang began construction on a 50 MW(e) nuclear power reactor in Yongbyon and expanded its uranium processing facilities."⁵⁸

On October 9, 2006, North Korea conducted its first nuclear test. The second test was conducted on May 25, 2009, and the third test on February 12, 2013. "In the first half of 2022 alone, North Korea has conducted more than 18 weapons tests – an alarming development given their frequency and variety."⁵⁹

⁵⁷ Nuclear Notebook: How many nuclear weapons does Pakistan have in 2021? - *Bulletin of the Atomic Scientists* (thebulletin.org)

⁵⁸ Anthony H. Cordesman, North Korean Nuclear Forces and the Threat of Weapons of Mass Destruction in Northeast Asia, Center for Strategic and International Studies, 2016, p. 25.

⁵⁹ Seiyeon Ji, Victor Cha, Making sense of North Korea's recent ICBM and (possible) nuclear tests, *Bulletin of the Atomic Scientists*, 2022. Available at: <u>Making sense of North Korea's recent ICBM and (possible) nuclear tests</u> - Bulletin of the Atomic Scientists (thebulletin.org)

North Korea is in constant pursuit of modernizing its nuclear arsenal. In this context, "most recent imageries collected on May 7, 2022, indicated that there was continued expansion of the support infrastructure for the *Punggye-ri* nuclear testing facility – including changes in lumber piles, renovation of existing buildings, and construction of new buildings in the main administration and support areas."⁶⁰ Statistics on how many nuclear weapons North Korea possesses vary, but "based on publicly available information, we asses that North Korea has produced sufficient fissile material to build 40 to 50 nuclear weapons, but has possibly assembled fewer than that."⁶¹ Nuclear warheads of North Korea are able to reach targets including United States of America, Europe, and Northeast Asia.

1.3.3. Israel

Israel is a de facto nuclear weapon state because the state does not confirm that it possesses nuclear weapons, but there are generally circumstances and proves that Israel possesses nuclear weapons. Israel is believed to be developing a nuclear program to avoid arms race with Arab states and thus gain an advantage over them.

Allegations that Israel possesses nuclear weapons are based on statements and satellite imagery. President Ephraim Katzir stated in 1974 that "it has always been our intention to develop a nuclear potential. We have now that potential."⁶² And Moshe Dayan in the New York Times interview in 1981 that "we don't have any atomic bomb now, but we have the capacity, we can do that in a short time."⁶³ These statements, according to the international community, have been associated with the fact that Israel has established a nuclear program, but does not publicly confirm the same.

⁶⁰ Ibid.

⁶¹ Hans M. Kristensen, Matt Korda, Nuclear Notebook: How many nuclear weapons does North Korea have in 2021?, *Bulletin of the Atomic Scientists*, 2021. Available at: <u>Nuclear Notebook: How many nuclear weapons does</u> North Korea have in 2021? - Bulletin of the Atomic Scientists (thebulletin.org)

 ⁶² Hans M. Kristensen, Matt Korda, Nuclear Notebook: Israeli nuclear weapons, *Bulletin of the Atomic Scientists*, 2022. Available at: <u>https://thebulletin.org/premium/2022-01/nuclear-notebook-israeli-nuclear-weapons-2022/</u>
 ⁶³ Ibid.



Figure 10: New construction near the plutonium production reactor at the Negev Nuclear Research Center near Dimona. Image @ 2021 Planet Labs.



Figure 11: The suspected Sdot Micha Jericho nuclear missile base includes two dozen bunkers for mobile launchers⁶⁴

Regardless of the fact that the issue of Israel's nuclear weapons is somewhat enigmatic, the analyzes and opinions, as well as the satellite imagery presented, are in favor of the fact that Israel possesses nuclear weapons. This is reinforced even more by the fact that Israel is constantly preoccupied with the issue of the eventual superiority of the military means over the other Arab states, and the possession of nuclear weapons guarantees a great security to it, even if the possession is silent.

⁶⁴ Satellite imagery © 2022 Maxar Technologies (image date October 8, 2021).

CHAPTER 2

2. Multilateral Treaties on nuclear weapons

2.1. The Treaty on the Non-Proliferation of Nuclear Weapons (NPT)

After 45 years of existence of nuclear weapons, the international community showed readiness to start negotiations to establish an international legal framework regarding nuclear weapons. Negotiations begin in the early 1960s, and they go a long way until the year the treaty is adopted. The Treaty on the Non-Proliferation of Nuclear Weapons opened for signature in 1968, and entered into force on March 5, 1970. The NPT is a legally binding instrument.

The main essence of the Treaty is that it deals with the relationship between nuclear weapon states and non-nuclear weapon states. The obligation under the Treaty on the Non-Proliferation of Nuclear Weapons to nuclear-weapon states is that they should not transfer nuclear weapons or other nuclear explosive devices, whereas to non-nuclear weapon states not to receive any nuclear weapons or other nuclear explosive devices. The Treaty mention that "a nuclear-weapon state is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967."⁶⁵ As we have already mentioned in preliminary chapters, nuclear weapon states that manufactured and exploded nuclear devices prior to 1967 are China, France, Russia, United Kingdom of Britain, and United States of America. India and Pakistan, as a de facto nuclear states, have never signed the NPT, and neither Israel. Historic withdrew of the treaty is the withdrew of North Korea in 2003 with a purpose to develop a nuclear programme.

The NPT is one of the first treaties to be established on the non-proliferation of nuclear weapons, as no other treaty has been signed since 1945, when nuclear weapons first appeared on the scene. Given that 190 states are parties to the Treaty, it represents the main and most important Treaty, and sets out the general principles regarding nuclear weapons. Three most important pillars of the treaty are nuclear disarmament, non-proliferation, and peaceful use of nuclear energy. In the context of non-proliferation, except to provide nuclear weapon or other nuclear explosive devices, states are obliged not to provide "(a) source or special fissionable material, or (b)

⁶⁵ Treaty on the Non-Proliferation of Nuclear Weapons, Art. IX. Available at: <u>Treaty on the Non-Proliferation of</u> <u>Nuclear Weapons (NPT) – UNODA</u>

equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards required by this article.⁶⁶ In addition, the Treaty guarantees the inalienable right of non-nuclear weapon states to use nuclear material for peaceful purposes. The NPT encourageous states to pursue negotiations in good faith, and the right of any group of states to conclude regional treaties regarding the non-proliferation of nuclear weapons.

The treaty is of historical importance for the fact that it was mentioned earlier that it is one of the first treaties related to the non-proliferation of nuclear weapons. As such, it has served as a legal framework for many other documents, both bilateral and multilateral, regarding nuclear weapons, non-proliferation and disarmament. The challenges and dilemmas raised by this Treaty are that it does not provide for prohibitions of nuclear weapons, in general lack of dispositions to prevent proliferation also between nuclear weapon-states, and to prohibit the production, use, and transfer of nuclear weapons and nuclear materials to both nuclear weapon-states and to non-nuclear-weapon states, and whether it discriminates by recognizing the above 5 states as possessing nuclear weapons. "The fact that five states are recognized in the treaty as holders of nuclear weapons was regarded as a matter of transition, the treaty does not in any sense confer permanent status on those states as weapons holders."⁶⁷ Thus, the fact that the NPT recognizes these states as states possessing nuclear weapons does not exclude them from the obligation to fulfill the obligations provided by the Treaty.

2.2. Treaties establishing Nuclear Weapon Free Zones (NWFZ)

The concept of nuclear-weapon-free zones dates back to 1975, with the adoption of United Nations General Assembly resolution 3472 (XXX). Regarding resolution, a nuclear-weapon-free zone as a general rule recognized by the General Assembly of the United Nations is an initiative by a group of states that has independently established a treaty or convention whereby: a) The statute of total absence of nuclear weapons to which the zone shall be subjected;

⁶⁶ Treaty on the Non-Proliferation of Nuclear Weapons, Art. 3 (2). Available at: <u>Treaty on the Non-Proliferation of</u> Nuclear Weapons (NPT) – UNODA

⁶⁷ John Borrie, Tim Caughley, *Viewing nuclear weapons through a humanitarian lens*, United Nations Institute for Disarmament Research, Geneva, 2013, p. 49.

b) An international system of verification and control is established to guarantee compliance with the obligations deriving from that statute.⁶⁸

Nuclear-weapon-free zone is a regional component that also derives from the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), where article VII emphasize that states can conclude regional treaties to strengthen non-proliferation and total elimination of nuclear arsenals. NWFZ is a form of "decentralization" from global agreements to regional agreements, which facilitates the achievement of cooperation between the states part of the same region. Five treaties establishing NWFZs have been concluded so far: the 1967 Treaty of Tlatelolco for the Prohibition of Nuclear Weapons in Latin America and the Caribbean, the 1985 Treaty of Rarotonga on the South Pacific NWFZ, the 1995 Bangkok Treaty on the South East Asia NWFZ, the 1996 Pelindaba Treaty on the African NWFZ, and the 2006 Semipalatinsk Treaty on an NWFZ in Central Asia.

2.3. Treaty of Tlatelolco (1967) - Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean

The Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean opened for signature in Mexico city on 14 February 1967, and the Treaty entered into force for each state individually, with the instrument of ratification. Party to the Treaty are 33 states, concretely states of the Latin America and Caribbean region. The purpose of the Treaty is to "ensure" the territory from the risk of nuclear weapons, in the aspect not to produce and not to gain nuclear weapons. Regarding the Treaty, nuclear material should be used only for peaceful purposes, as nuclear energy. Treaty emphasizes that the region should be *"forever free from nuclear weapons"*.⁶⁹ The Treaty prohibits the use, stockpile, and production of nuclear weapons.

The Treaty of Tlatelolco contains the creation of mechanisms in order to ensure the implementation of the Treaty. In the framework of this agreement, the most important is Agency

⁶⁸ United Nation General Assembly, Resolution 3472 (XXX), Comprehensive study on the question of nuclearweapon-free zones in all its aspects, 11 December, 1975. Available at: <u>NR000185.pdf (un.org)</u>

⁶⁹ Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Preamble). Available at: UNODA Treaties

for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (OPANAL), which is located in Mexico City. The Agency is responsible to realize periodic and extraordinary meetings, to observe the implementation of the obligations by the states.

Main organs of the Agency are:

General Conference – is the supreme organ of the Agency. The crucial competences of the General Conference are to authorize the conclusion of agreements with Governments of the region and other international bodies, to adopt the Agency's budget and to deal with other financial issues. Each member of the Agency has one vote, and decisions are being taken with a two-third majority of the members present.

Council – competences of the Council are solid functions. It is composed of five members of the Agency, due account being taken of equitable geographic distribution, and it is organized to be able to function contuniously.

The Secretariat – consisted by a General Secretary and Secretariat's functions are to ensure the proper operation of the control system established by this Treaty, in accordance with the provisions of the Treaty and the decisions taken by the General Conference, and shall make an annual report, distributing to all Contracting Parties information received by the Agency from governmental sources.

2.4. Treaty of Rarotonga (1986) - South Pacific Nuclear Free Zone Treaty (SPNFZT)

The Treaty of Rarotonga, the South Pacific Nuclear Free Zone Treaty, opened for signature on 6 August 1985 and entered into force on 11 December 1986. This Treaty is the second Nuclear Weapon-Free Zone Treaty entered into force, after the Treaty of Tlatelolco and oblige states not to acquire, to permit the stationing, to permit the testing of nuclear weapons on their territory, and to apply strict non-proliferation measures to all exports of nuclear materials. The geographic scope of the Rarotonga Treaty is vast, extending from the West coast of Australia to the boundary of the Latin American NWFZ in the east, and from the equator to 60 degrees south, where it meets the boundary of the zone established by the Antarctic treaty.⁷⁰ Members of the Treaty are Australia, Cook Islands, Fiji, Kiribati, Nauru, New Zealand, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu.

2.5. Treaty on the Southeast Asia Nuclear-Weapon-Free Zone – Bangkok Treaty (SEANWFZ)

Bangkok Treaty was signed on 15 December 1995 by ten Southeast Asian States. The Treaty, which entered into force on 27 March 1997, and established the third Nuclear-Weapon-Free Zone treaty in the world. Duration of the treaty is indefinite. In article 1, the Treaty define the Southeast Asia Nuclear-Weapon-Free Zone that means " the area comprising the territories of all States in Southeast Asia, namely, Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam, and their respective continental shelves and Exclusive Economic Zones (EEZ)."⁷¹ The Treaty obliges States Parties not to develop, manufacture or otherwise acquire, possess or have control over nuclear weapons, station or transport nuclear weapons, or test or use nuclear weapons. In general, "the Treaty promotes the universalisation of international agreements related to disarmament and the non-proliferation of weapons of mass destruction (WMD) and commits States Parties to fully supporting and implementing the main pillars of the NPT and their mutually reinforcing nature, i.e., nuclear non-proliferation, nuclear disarmament and peaceful uses of nuclear energy."⁷²

⁷⁰ Geographical scope is described detailed in the Art. 1 (a) Annex A of the Treaty. South Pacific Nuclear Free Zone Treaty, Available at: <u>volume-1445-I-24592-English.pdf (un.org)</u>

⁷¹ Treaty on the Southeast Asia Nuclear-Weapon-Free Zone, Art. 1 (a). Available at: <u>TREATY ON THE</u> <u>SOUTHEAST ASIA NUCLEAR-WEAPON-FREE ZONE (BANGKOK TREATY) (legal-tools.org)</u>

⁷² Treaty of Bangkok, United Nations <u>Treaty of Bangkok | NATIONS UNIES</u>

2.6. African Nuclear-Weapon-Free Zone Treaty - Treaty of Pelindaba

The Treaty of Pelindaba was signed on 11 April 1996, and entered into force on 15 July 2009. Even though 51 African states have signed the Treaty, only 41 of them have ratified and are party to the Treaty.⁷³

The Treaty is of special importance because a large number of the African states are part of it. This makes it a strategic and secure region, because of the obligations that states undertake not to produce, manufacture, and proliferate nuclear weapons. Article 1 of the treaty defines that the African nuclear-weapon-free zone "means the territory of the continent of Africa, islands States members of OAU and all islands considered by the Organization of African Unity in its resolutions to be part of Africa."⁷⁴ The treaty prohibits the research, development, manufacture, stockpiling, acquisition, testing, possession, control or stationing of nuclear weapons, as well as the dumping of radioactive wastes.

2.7. Central Asian Nuclear-Weapon-Free Zone Treaty

The Treaty on a Nuclear Weapon Free Zone in Central Asia or with its unofficial name "The Semipalatinsk Treaty" was adopted in 2009 in Semipalatinsk, Kazakhstan. Parties to the Treaty are Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan and the Republic of Uzbekistan.

The Treaty, in scope of the states that are positioned in the Asia region, obligates only five aforementioned states. It is interesting that Semipalatinsk had had one of the biggest nuclear central of nuclear weapons in the '90th, and creating a nuclear weapon free zone in this aspect, was a structured and concrete decision. Having in regard its past history, and that five states have ratified the Treaty, reflect a secured atmosphere for the region. The Treaty contains 18 articles.

⁷³ Parties that have ratified the treaty are: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cabo Verde, Chad, Comoros, Republic of Congo, Cote d'Ivoire, Democratic Republic of Congo, Equatorial Guinea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, South Africa, Tanzania, Togo, Tunisia, Zambia, Zimbabwe.

⁷⁴ Treaty of Pelindaba, Art. 1 (1). Available at: <u>http://disarmament.un.org/treaties/t/pelindaba</u>

In the preamble states have shown a courage that the initiative is a part of efforts to nonproliferation of nuclear weapons, to a peaceful world, and using nuclear energy only for peaceful purposes.

The treaty obliges states not to conduct research on, develop, manufacture, stockpile, not to take any action to assist or encourage the conduct on development, manufacture, stockpiling, acquisition, production, stationing, storage or use of any nuclear weapons or other nuclear explosive devices.

Other articles contain rules for rehabilitation of the environment from the contamination of past activities from tests of nuclear weapons, using nuclear energy for peaceful purposes, and other general rules for peaceful purposes of nuclear energy.

The Treaty does not contain and foreseen any implementation or observation body that will observe the fulfillment of the obligations of the Treaties regarding the states who are part of the Treaty.

2.8. The Antarctic Treaty

The Antarctic Treaty signed on 1 December 1959 in Washington by the twelve countries whose scientists had been active in and around Antarctica during the conference of International Geophysical Year. The twelve states that ratified the Treaty are Argentina, Australia, Belgium, Chile, the French Republic, Japan, New Zealand, Norway, the Union of South Africa, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America.

The Antarctica region is of an exclusive importance for the resources that posses for the environment and of course currently of climate change crisis. By that reason, a such region to be safe must have international legal protection.

The Treaty consists of XIV articles. In general, the Treaty structure the idea that Antarctica should be used only and only for peaceful and scientific purposes. Important for our research is article I and V. Article I prohibits "any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing

of any type of weapons."⁷⁵ Such, under the Antarctic Treaty any activity involving nuclear weapons, such as their testing, stockpiling, deployment, or launching in or from Antarctica is prohibited. In other words, Antarctica has a very special status of protection, meaning that there cannot be positioned any military team, or even any kind of a single weapon. In the way, the Treaty allow the military personnel or equipment in the Antarctica for scientific and peaceful purposes.

Article V has also a very special importance regarding nuclear weapons, because it mentioned that "any nuclear explosions in Antarctica and the disposal there of radioactive waste material shall be prohibited."⁷⁶

2.9. The Comprehensive Nuclear Test Ban Treaty (CTBT)

The Comprehensive Nuclear Test Ban Treaty was adopted by the General Assembly of United Nations on 10 September 1996 (resolution 50/245) and was opened for signature by all states on 24 September 1996. It will enter into force 180 days after the date of deposit of the instruments of ratification by all states listed in Annex 2 to the Treaty.⁷⁷

25 years after the adoption the Treaty is not still into force. The article XIV contains that 44 states referred and listed in Annex 2 to the Treaty must ratify the Treaty to enter into force. This is the stagnation why the Treaty have not yet entered into force. China, North Korea, and Egypt as part of states listed in Annex 2, have not yet ratified the Treaty. North Korea even has not signed the Treaty. The ratification of the Treaty by these 3 states is of a crucial importance for the Treaty to enter into force.

As of interest of this research, regarding nuclear weapons states, China, Israel and United States of America, have signed but not ratified, and North Korea, India, and Pakistan have not signed and ratified the Treaty. France, Russia, and United Kingdom have ratified the Treaty.

⁷⁵ Antarctic Treaty, Art. 1 (1). Available at: <u>vol1_2_AT_Antarctic_Treaty_e.pdf (ats.aq)</u>

⁷⁶ Ibid. Article 5.

⁷⁷ Algeria, Argentina, Australia, Austria, Bangladesh, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Democratic People's Republic of Korea, Egypt, Finland, France, Germany, Hungary, India, Indonesia, Iran, Israel, Italy, Japan, Mexico, Netherlands, Norway, Pakistan, Peru, Poland, Romania, Republic of Korea, Russian Federation, Slovakia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Viet Nam, Zaire.

As there have been more than 2000 nuclear weapon tests explosions since 1945, the Comprehensive Nuclear Test Ban Treaty constitutes a fundamental instrument in the field of nuclear disarmament and non-proliferation, and is of a vital importance and urgency of its entry into force.

Basic obligations of the Comprehensive Nuclear Test Ban Treaty are that "each State Party undertakes not to carry out any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control" and that "each State Party undertakes, furthermore, to refrain from causing, encouraging, or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion."⁷⁸

The states are obliged to establish the Comprehensive Nuclear Test Ban Treaty Organization to achieve further implementation of the Treaty. As we know, the Treaty is not yet in force, and the Organization is not established, but there has been established Comprehensive Nuclear Test Ban Treaty Organization Preparatory Comission, to work on the field for the Treaty to enter into force. By the way, the main organs of the Organization shall be:

The Conference – part of which shall be all states parties and shall meet in regular sessions, which shall be held annually. Each state party shall have one vote. The Conference shall be the principal organ of the Organization. It shall consider any question matters or issued within the scope of the Treaty, and it may make recommendations and take decisions on any question related to the Treaty. The Conference shall oversee the implementation and report of the Organization on the implementation of the Treaty, elect members of the Executive Council, appoint the Director-General of the Technical Secretariat, it is responsible for the annual programme and the budget.

The executive Council – shall consist of 51 members, equitable of geographical distribution, as from regions of Africa, Eastern Europe, Latin America and the Caribbean, Middle East, South Asia, North America, Western Europe, South East Asia, the Pacific, and Far East. It shall be an executive organ of the Organization and shall promote effective implementation of, and compliance with the Treaty.

⁷⁸ Comprehensive Nuclear Test Ban Treaty, Art. 1 & 2. Available at: <u>CTBTEN (ctbto.org)</u>

The Technical Secretariat – shall assist states parties, the Conference, and the Executive Council on the implementation of the Treaty.



Worldwide nuclear testing 1945 -2017 79

Nuclear testing reached its highest rank in 1962, and United States of America, the Union of Soviet Socialist Republics (at the time), United Kingdom, and France are states which tested much more nuclear weapons.

⁷⁹ Comprehensive Nuclear-Test-Ban Treaty Organization: Preparatory Commission Available at: <u>Nuclear Testing</u> <u>1945 - today: CTBTO Preparatory Commission</u>



After 1996 we have a considerable reduction of nuclear explosions, zero atmospheric nuclear explosions, and a very low percentage of underground nuclear explosions. The underground explosions were conducted by three states; two by India and two by Pakistan in 1998, one by North Korea in 2006, and another one again by North Korea in 2009. It is important to emphasize that nuclear weapon states as United States of America, Russia, United Kingdom, France, and China, after 1996 do not have realized neither atmospheric and underground nuclear explosions. By the way, maybe the reduction of nuclear explosions is not suddenly, because in the 1996 The Nuclear Comprehensive Test Ban Treaty was opened for signature.

Entry into force of this Treaty is very crucial because while nuclear weapon states are constantly trying to modernize their arsenals, it means that states will be even more inclined to test their modernized weapons. In general, any testing of nuclear weapons causes great damage to the

⁸⁰ Comprehensive Nuclear-Test-Ban Treaty Organization: Preparatory Commission Available at: <u>Nuclear Testing</u> <u>1945 - today: CTBTO Preparatory Commission</u>

environment where they are tested, in terms of environmental pollution and its contamination, endangering the health of residents living in areas where nuclear weapons are tested. The impact that nuclear weapons have on health is so dangerous that "radioactive fallout could be carried considerable distances downwind to other countries or territories; as a result, people outside the immediate area of the blast would face an increased risk of developing certain cancers, such as leukaemia and thyroid cancer, which may only manifest themselves decades later."⁸¹

2.10. The Treaty on the Prohibiton of Nuclear Weapons

The existence of nuclear weapons from the beginning until today, has constantly preoccupied the world with the danger they carry. At the same time, efforts to stop them have been ongoing. The first initiatives came from the General Assembly of the United Nations with the resolution of January 24, 1946, calling for the establishment of a commission to deal with the problems raised by the discovery of atomic energy stated one of the purposes "for the elimination from national armaments of atomic weapons and all other major weapons adaptable to mass destruction."⁸² Two years later, in 1948, the Assembly adopted the resolution for the prohibition of the atomic weapon and reduction by one-third of the armaments and armed forces of the permanent members of the Security Council⁸³, but the text does not mention the term "prohibitons", and special focus is given to arms reduction and the role of the Security Council in monitoring the reduction process. However, it should be borne in mind that the resolution has a declarative character, and does not represent a legally binding instrument. Its implementation depends on the will of the parties.

Following the UNGA resolutions, nuclear weapons states continue to develop their nuclear programs, while in parallel bilateral and multilateral agreements have been approved regarding nuclear weapons, but not their prohibition. In 2006, the non-governmental organization International Physicians for the Prevention of Nuclear War (IPPNW), began raising awareness of

⁸¹ Louis Maresca, Eleanor Mitchell, The human costs and legal consequences of nuclear weapons under international law, *International Review of the Red Cross*, Volume 97, Number 899, 2015, p. 624.

⁸² General Assembly Resolution 1(I), ¶ 5(c), Establishment of a Commission to Deal with the Problems Raised by the Discovery of Atomic Energy (Jan. 24, 1946). Available at: 1.pdf (worldlii.org)

⁸³ General Assembly Resolution 192 (III), Prohibition of the atomic weapon and reduction by one-third of the armaments and armed forces of the permanent members of the Security Council (Nov. 19, 1948). Available at: 43.pdf (worldlii.org)

the dangers of nuclear weapons and founded the International Campaign to Abolish Nuclear Weapons (ICAN). This will be one of the organizations that will take the lead in developing the campaign against nuclear weapons and creating the Treaty on the Prohibiton of Nuclear Weapons. In 2017, this organization won the Nobel Peace Prize for its contribution to "work to draw attention to the catastrophic humanitarian consequences of any use of nuclear weapons" and "ground-breaking efforts to achieve a treaty-based prohibition of such weapons."

In the final statement of the NPT Review Conference 2010, which conference is held every 5 years, to examine the implementation of the Treaty, for the first-time emphasis is placed on the rhetoric of the humanitarian impact of nuclear weapons. After this momentum, ICAN puts the focus of the campaign on a complete ban on nuclear weapons. The three crucial moments that precede the TPNW are the Conference on the humanitarian impact on nuclear weapons in 2013, the second conference in 2014 held in Mexico, and the last conference held in December 2014 in Austria. During these 3 conferences, strategies were initiated for the start of negotiations for a treaty on the elimination of nuclear weapons. Negotiations begin in March 2017, with 130 countries participating. It is important to note that these negotiations had been boycotted by nuclear weapon states. Thus, "advocates of the ban argue that the nuclear-weapon states parties to the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT) have been too slow in complying with their NPT Article VI commitment "to pursue good faith negotiations toward nuclear disarmament."⁸⁵

The Treaty was adopted in 7 July 2017, and entered into force on 22 January 2021. Signatory states of the Treaty are 86 countries, and only 65 of them have ratified the Treaty. The Treaty consist of 20 articles. The peculiarity of this Treaty is that for the first time is used the term "prohibitions" in a legally binding instrument. "The treaty was created to foster and diffuse norms against nuclear weapons, thereby stigmatizing and delegitimizing nuclear weapons and

⁸⁴ The Nobel Peace Prize 2017, International Campaign to Abolish Nuclear Weapons. Available at: <u>International</u> <u>Campaign to Abolish Nuclear Weapons (ICAN) - History (nobelprize.org)</u>

⁸⁵ Rebecca Davis Gibbons, The humanitarian turn in nuclear disarmament and the Treaty on the Prohibition of Nuclear Weapons, *The Nonproliferation Review*, 25:1-2, 2018, p. 11.

deterrence.⁸⁶ In the same line, "the treaty was negotiated with a view to amplifying anti-nuclear norms and galvanizing nuclear disarmament processes.⁸⁷

Article 1 of the Treaty prohibits the actions to develop, testing, produce, manufacture, transfer to any recipient, receive the transfer, use or threaten to use, assist, encourage, induce, seek or receive assistance, allow any stationing, installation or deployment of nuclear weapons and other nuclear explosive devices.⁸⁸ The Treaty also emphasize that after entering into force of the Treaty for that state party, the state is obliged to submit a declaration regarding if the state owned, possessed or controlled, whether it owns, possesses or controls, whether there are any nuclear weapons or other nuclear explosive devices in its territory or in any place under its jurisdiction or control that are owned, possessed or controlled by another State. The Treaty, in general addresses issues of safeguards of the International Atomic Energy Agency and cooperation between states, and in the path to total elimination of nuclear weapons oblige the states that posses nuclear weapons "shall immediately remove them from operational status, and destroy them as soon as possible."

The entry into force of the Treaty in early 2021 was greeted with extraordinary enthusiasm throughout the world. This moment represents an important step on the path to the total elimination of nuclear weapons. However, the greatest challenge to the Treaty will remain its implementation, and its ratification by nuclear weapon states. As mentioned above, so far, 65 states have ratified the Treaty. The group that has ratified the Treaty does not include any country that possesses nuclear weapons, and apart from Austria, no country from the European Union and the North Atlantic Treaty Organization has ratified the Treaty. Nuclear weapon states, in addition to boycotting the TPNW negotiations, some of them "by way of contrast the 2017 prohibiton of the possession and use of nuclear weapons in all circumstances did not receive the support of any State that possesses nuclear weapons. The United States, France and the United

⁸⁶ Tobias Vestner, Treaty law to signal to outsiders: the case of the Treaty on the Prohibition of Nuclear Weapons, *Washington International Law Journal*, 2022, p. 420.

⁸⁷ Kjølv Egeland, Arms, Influence and the Treaty on the Prohibition of Nuclear Weapons, Survival | vol. 61 no. 3 | June–July 2019, p. 57.

⁸⁸ Treaty on the Prohibiton of Nuclear Weapons, A/CONF.229/2017/8, Art. 1 [TPNW].

⁸⁹ Treaty on the Prohibiton of Nuclear Weapons, A/CONF.229/2017/8, Art. 4 (2).

Kingdom announced that they do not intend to ever become a party to the TPNW."90

CHAPTER 3

3. United Nations Intruments

3.1. United Nations Security Council Resolution 1540

The United Nations Security Council Resolution 1540 was adopted on 28 April, 2004. The Resolution as a whole is a call of the Council to unify and coordinate states to establish a global legal framework regarding the issue of Weapons of Mass Destruction (WMD), and it is a legally bindng instrument.

The Resolution referes to the dangerousity and risk of the weapons of mass destruction that are nuclear, chemical, and biological weapons. The Resolution encourage to be taken appropriate effective actions against any threat to international peace and security caused by the proliferation of these weapons, and affirming its support for the multilateral treaties whose aim is to eliminate or prevent the proliferation of Weapons of Mass Destruction. Also, it emphasizes the threat of illicit trafficking in nuclear, chemical, and biological weapons, and calling on coordination on national, subregional, regional and international levels in order to strengthen a global response to the issue. Resolution emphasizes the importance that "all States shall refrain from providing any form of support to non-state actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery."⁹¹

Also, the Resolution expressly and in strict way emphasize the dangerousity of these weapons to be proliferated to the non-state actors cited that "all States, in accordance with their national procedures, shall adopt and enforce appropriate effective laws which prohibit any non-State actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery, in particular for terrorist purposes, as well as

⁹⁰ James Crawford, International law and the problem of change: a tale of two Conventions, *Victoria University of Wellington Law Review*, 2018, p. 57.

⁹¹ UNSC Resolution 1540 S/RES/1540 (2004) (1). Available at: Microsoft Word - 0432843E.doc (ipu.org)

attempts to engage in any of the foregoing activities, participate in them as an accomplice, assist or finance them." Also importantly, the Resolution requires that states should criminalize WMD proliferation attempts by non-state actors and create an international network of cooperation and coordination to check infractions."⁹²

The Resolution also note that all states should take effective measures to establish domestic controls to prevent the proliferation of these weapons, as well as to take effective border controls and law enforcement efforts to detect, deter, prevent and combat the illicit trafficking and brokering in such weapons and their means of delivery. The most important element is that among with resolution is established the Security Council Committee. This Committee consisted of all members of the Council, is a crucial mechanism which have a duty to report to the Security Council for the examination and the implementation of this Resolution.

The Security Council calls upon States to present a first report no later than six months from the adoption of this Resolution to the Committee on steps they have taken or intend to take to implement this Resolution. As we have mentioned, the Resolution was adopted on January 3, 2004. Nine states that are part of this Research, and as also known as nuclear weapon states, all of them; United States of America,⁹³ Russian Federation,⁹⁴ France,⁹⁵ United Kingdom of Great Britain and Northern Ireland,⁹⁶ China,⁹⁷ India,⁹⁸ Pakistan,⁹⁹ and Israel,¹⁰⁰ have sent a report to the Committee in the year of adoption of the Resolution, except North Korea that does not have submit any report to the until 2020. Submitting reports to the Security Council Committee is one of the most important obligations for all states, as this resolution does not only charge states that

⁹² Imrana Iqbal, International law of nuclear weapons nonproliferation: application to non-state actors, *Pace International Law Review*, 2019, p. 15.

⁹³ 12 October 2004, (1st report) 15 September 2005, 21 December 2007, 11 October 2013, 29 September 2014, 23
March 2016, 1 July 2020.

⁹⁴ **26 October 2004** (1st report), 23 August 2005, 24 December 2007, 15 July 2014, 31 January 2020.

⁹⁵ **28 October 2004** (1st report), 25 August 2005, 14 December 2007, 17 August 2015, 24 April 2020.

⁹⁶ **29 September 2004 (1st report),** 19 September 2005, 14 December 2007, 13 December 2013, 19 August 2020.

⁹⁷ **4 October 2004** (1st report), 2 September 2005, 4 December 2007.

⁹⁸ 1 November 2004 (1st report), 16 January 2006, 8 January 2006, 8 February 2006, 31 May 2013, 13 June 2017, 21 August 2019, 30 June 2020.

 ⁹⁹ 27 October 2004 (1st report), 19 September 2005, 3 June 2008, 9 September 2009, 12 May 2017, 30 April 2020.
 ¹⁰⁰ 22 November 2004 (1st report), 10 December 2012.

possess nuclear weapons or nuclear material, but also other states that do not possess them. In the report, the states must present all the actions related to the implementation of the obligations derived from the resolution in the national legal framework. This way, "the process for effective implementation of the resolution begins with the submission of national reports, and that "these reports are used by the 1540 Committee, with the assistance of its experts, to examine the extent to which the objectives of the resolution have been attained and to identify areas where further measures are necessary."¹⁰¹

Lastly, on January 3, 2022, the leaders of the five nuclear – weapon states as well as five permanent United Nations Security Council members have realized a joint statement on preventing nuclear war and vow to prevent arms races and nuclear war. They declare that we should prevent an arms race that would benefit none and endanger all, and also emphasizing in the statement that "a nuclear war cannot be won and must never be fought."¹⁰²

3.2. International Court of Justice Advisory Opinion on the Legality of the Threat or of Use of Nuclear Weapons

The International Court of Justice is one of the institutions of justice that has the authority to make advisory decisions on matters within the framework of international law. This court has no jurisdiction to resolve disputes between states, but only to give advisory opinions on the interpretation of international law.

Almost 50 years after the first use of nuclear weapons and other developments on the international scene related to these weapons, the academic world lacked a more concise legal explanation regarding the position of these weapons in international law. Although the International Court of Justice has jurisdiction only to give advisory opinions, the impact that this decision has on shaping a legal overview of nuclear weapons is very considerable.

¹⁰¹ Keynote Address of the Peter Burian (chairman of the 1540 Committee) on the seminar Significance of UNSCR 1450 and opportunities for cooperation and assistance. Full address available at: <u>Keynote address—Significance of</u> <u>UNSCR 1540 and opportunities for cooperation and assistance | United Nations iLibrary (un-ilibrary.org)</u>

¹⁰² Five of world's most powerful nations pledge to avoid nuclear war, The Guardian, 2022. Full declaration available at: Five of world's most powerful nations pledge to avoid nuclear war | Nuclear weapons | The Guardian

A number of global non-governmental organizations such as the World Nuclear Arms, International Physicians for the Prevention of Nuclear War (IIPNW), the International Peace Bureau, and the International Commission of Jurists, and others, have consistently lobbied for the International Court of Justice to grant opinion on this issue. As part of this initiative, more than 2 million signatures have been collected from citizens from all over the world, to show that the Court is obliged to respond to the request for an opinion. Statements have also been submitted to the court by subjects he has not previously profiled, such as non-state actors, individuals, and among the most important subjects such as *hibakusha* (survivors of the Hiroshima and Nagasaki bombings), and victims of nuclear testing in the Pacific Island. It is worth noting that the official application was originally from the World Health Organization, but the request was rejected on the grounds that WHO is not competent to submit such requests.

The General Assembly of the United Nations submits a formal request to the International Court of Justice and requests that the court to decide that "Is the threat or use of nuclear weapons in any cirsumstance permitted under international law?"

The International Court of Justice through the advisory decision finds that for nuclear weapons applied rules and principles of International Humanitarian Law, and in comparison, nuclear weapons are "generally contrary" to the principles and rules of IHL. Some of the main principles of IHL are principles of discrimination "the principle of military necessity, the principle of humanity, principle of proportionality, principle of restrictions."¹⁰³

Anyway, court recognized the obligation that states are obliged in good faith to pursue negotiation leading to nuclear disarmament in all its aspects. Despite this, another aspect of the ICJ Advisory Opinion is that "when it comes to self defence, the use of nuclear weapons – and presumably threats to use them – would not be illegal." ¹⁰⁴ With this, the court makes exceptions in some circumstances of self-defence and when the survival of a state is in question.

Dissapontingly, the hope that the ICJ would find the use of nuclear weapons to be categorically illegal had not been fulfilled. Instead, states possessing nuclear weapons with the support of their

¹⁰³ Voisllav Vasileski, *International Law in Armed Conflicts*, The Military Academy "General Mihailo Apostolski" Skopje, 2003, p. 71-77.

¹⁰⁴ Sverre Mythra, Nuclear weapons and international law, Geneva Academy, p. 18.

allies, argued that the Advisory Opinion confirmed that nuclear weapons were not explicitly illegal under international law, and that there were some extreme circumstances of self-defence that could justify their use. Despite these facts, particularly the confirmation that use of nuclear weapons would generally be contrary to the principles and rules of International Humanitarian Law, this legal gap came to be used as a justification for the continued possession of nuclear weapons.

CHAPTER 4

4. Nuclear Security Instruments

4.1. Convention on the Physical Protection of Nuclear Material (CPPNM)

The Convention on the Physical Protection of Nuclear Material was adopted under the International Atomic Energy Agency on 1979, and entered into force on 8 February 1987. The International Atomic Energy Agency is the leading international institution tasked with monitoring nuclear materials circulating worldwide, and its purpose is to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It has defined safeguards that states must adhere to, and the Agency conducts inspections of plants in states that possess nuclear weapons, and at the same time states must submit IAEA reports on nuclear material. Consequently, this Convention is of particular importance as it is initiated by this institution, and has a legally binding character.

Adoption of the Convention aims at strengthening the international legal framework and international cooperation between states regarding nuclear material and nuclear weapons. Uncertainty about the circulation of nuclear material can have unintended consequences. According to the Convention, states must take care of their territory for the safety of nuclear material at the national level, so that the material does not fall prey to its theft and the material is misused. Since the convention has a legally binding character, it is essential that it sets out the prohibited actions that can be performed by a certain subject in forms explicitly defined when:

a) an act without lawful authority which constitutes the receipt, possession, use, transfer, alteration, disposal or dispersal of nuclear material and which causes or is likely to cause death or serious injury to any person or substantial damage to property;

b) a theft or robbery of nuclear material;

c) an embezzlement or fraudulent obtaining of nuclear material;

d) an act constituting a demand for nuclear material by threat or use of force or by any other form of intimidation;

e) a threat:

i) to use nuclear material to cause death or serious injury to any person or substantial property damage, or

ii) to commit an offence described in sub-paragraph (b) in order to compel a natural or legal person, international organization or State to do or to refrain from doing any act;

f) an attempt to commit any offence described in paragraphs (a), (b) or (c); and

g) an act which constitutes participation in any offence described in paragraphs (a) to (f) shall be made a punishable offence by each State Party under its national law.¹⁰⁵

The Convention provides that states should take measures as may be necessary to establish its jurisdiction, not even excluding any criminal jurisdiction under national law over these offenses in case the offense is committed in their territory or by their nationals, and provides that each state party shall not import or authorize the import of nuclear material unless that state fulfill the transportation levels foreseened by the Treaty. Therefore, the Convention is of paramount importance, as it is legally binding, taking measures against those who commit aforementioned offenses in advance prevents entities from being careful if they take such actions, but even if they do, there are appropriate mechanisms in place to punish them. Also, "the Convention is the first multilateral agreement in the area of physical protection of nuclear material and is viewed as

¹⁰⁵ Wyn Bowen, Matthew Cottee, Christopher Hobbs, Luca Lentini, Matthew Moran, Sarah Tzinierisp, *Nuclear Security Briefing Book*, King's College London & Center for Science and Security Studies, 2020, p. 77.

a significant step forward in international co-operation for the peaceful application of nuclear energy."¹⁰⁶

4.2. Convention on Nuclear Safety

The Convention on Nuclear Safety (CNS) was adopted in Vienna on 17 June 1994 and entered into force on 24 October 1996. This Convention is the result of the fatal accident of the Chernobyl nuclear power plant, which occurred in 1986. The Chernobyl nuclear plant was created by the Soviet Union, which today is located in Ukraine, and as a result of the Ukraine-Russia war, it was taken over by Russian forces.

The accident has caused extraordinary damage to people, public health, pollution of the environment where the plant was located. After the explosion of the nuclear plant, one operator died at the scene, and the other operator died on the way to the hospital. But the consequences in humans continue even after the plant explosion where a further 28 people died within a few weeks as a result of acute radiation syndrome (ARS), "which occurs if a person is exposed to more than 700 milligrays (mGy) within a short time frame (usually minutes)."¹⁰⁷

Chernobyl accident is a historical event because for the first time there is an accident of a nuclear plant that causes great consequences to people and the environment. In 1979 there was also a nuclear plant accident on Three Mile Island, but it was not the size of the Chernobyl accident. After the expertise and analysis made by experts about the causes that led to this accident, are that the plant was operated by an inadequately trained personnel. Thus, "the operating organization had not been made aware either of the specific vital safety significance of maintaining a minimum operating reactivity margin, or the general reactivity characteristics of the RBMK which made low power operation extremely hazardous."¹⁰⁸ The international community considered that the international system was needed to guarantee the safe operation of nuclear plants, and as a result they decided to adopt the Convention on Nuclear Safety. In this context, "the development of a safety culture within organizations active in the nuclear sector has

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¹⁰⁶ Convention on the Physical Protection of Nuclear Material, Legal Series No12, International Atomic Energy Agency, Vienna, 1982, p. 2.

 ¹⁰⁷ Chernobyl Accident 1986, World Nuclear Association, 2022. Available at: <u>Chernobyl | Chernobyl Accident |</u>
 <u>Chernobyl Disaster - World Nuclear Association (world-nuclear.org)</u>
 ¹⁰⁸ Ibid.

generally been considered to be the appropriate response. As a result of the post Chernobyl reflection process, it was felt that a more international vision of nuclear safety was necessary."¹⁰⁹

The Convention is under the auspicies of the International Atomic Energy Agency (IAEA). In article 1 of the Convention are mentioned that the objectives of the Convention are concentrated to achieve and maintain a high level of nuclear safety worldwide, to establish and maintain effective defences in nuclear installations against potential radiological hazards in order to protect individuals, society and the environment from harmful effects of ionizing radiation from such installations, and to prevent accidents with radiological consequences and to mitigate such consequences should they occur.

The Convention in article 1 define the term "nuclear installation" as "any land-based civil nuclear power plant under its jurisdiction including such storage, handling and treatment facilities for radioactive materials as are on the same site and are directly related to the operation of the nuclear power plant." But, "such a plant ceases to be a nuclear installation when all nuclear fuel elements have been removed permanently from the reactor core and have been stored safely in accordance with approved procedures, and a decommissioning programme has been agreed to by the regulatory body."¹¹⁰ So, nuclear fuel elements are determinant for a type of nuclear power plant.

The Convention stipulates that contracting parties should take all appropriate legal steps to ensure the obligations deriving from the Convention. Contracting parties are obliged to submit a report on their nuclear power plants, both to states that possess power plants and to states that do not possess power plants but in the territories of their neighboring states there are such. Also, the Convention aimed to address the concerns raised by the consequences of the Chernobyl accident in humans, where in article 14 (i) mention that "comprehensive and systematic safety assessments are carried out before the construction and commissioning of a nuclear installation and throughout its life. Such assessments shall be well documented, subsequently updated in the light of operating experience and significant new safety information, and reviewed under the

¹⁰⁹ Jean Couturier, Yéhia Hassan, and Emmanuel Grolleau, *Element of Nuclear Safety: Research Reactors*, Institut De Radioprotection Et De Sureté Nucléaire. Les Ulis: EDP Sciences, 2021, p. 35.

¹¹⁰ Convention on Nuclear Safety, International Atomic Energy Agency. Available at: <u>INFCIRC/449 - Convention</u> on Nuclear Safety (iaea.org)

authority of the regulatory body", and that "each Contracting Party shall take the appropriate steps to ensure that in all operational states the radiation exposure to the workers and the public caused by a nuclear installation shall be kept as low as reasonably achievable and that no individual shall be exposed to radiation doses which exceed prescribed national dose limits."¹¹¹

In general, Conventions regarding the safety of nuclear material are of special importance because "there is now a global market for nuclear material, which is offered to states or various non-state actors. Everyone verifies what is well known: it is impossible for this type of weaponry to be limited only to 'those who own it'. Marvin Minsky uses the expression 'have laters' who can't wait to own it."¹¹²

4.3. The International Convention for the Suppression of Acts of Nuclear Terrorism

The international Convention for the Suppression of Acts of Nuclear Terrorism known as the Nuclear Terrorism Convention was adopted on April 13, 2005 and entered into force on July 7, 2007. Parties to the Convention are 118 states, including nuclear weapon states as China, France, India, Russia, the United Kingdom of Great Britain, and the United States of America.

The idea of creating such a Convention was initiated by Russia in 1998, and it was the subject of negotiations until the year when it was adopted. In essence, the Convention is intended to bring under control and security for nuclear material, for reasons that can be misused by various factors, and the risk of misuse is high. The convention entered into force just after the 9/11 terrorist attacks on the twin towers of the World Trade Center in the United States. The potential risk of misuse of nuclear material is unpredictable if it can be used for non-peaceful purposes by other states or entities. In this context, "A. Q. Kahn, creator of Pakistan's nuclear bomb, admitted that he had operated a busy black-market trade in centrifuges, blueprints for nuclear weapons equipment to enrich uranium into weapons-grade fuel and missiles capable of delivering nuclear warhead."¹¹³

¹¹¹ Ibid.

¹¹² Cristopher Coker, A mund të eliminohet lufta?, Logos-A, 2022, p. 20.

¹¹³ Heather R. Demner, *The Nuclear Terrorism Convention: Will Detainees be classified as "enemy combatants" by the United States?* 12 ILSA Journal of International & Comparative Law, 2006, p. 656.

The Convention explicitly defines nuclear material as:

1. "Radioactive material" means nuclear material and other radioactive substances which contain nuclides which undergo spontaneous disintegration (a process accompanied by emission of one or more types of ionizing radiation, such as alpha-, beta-, neutron particles and gamma rays) and which may, owing to their radiological or fissile properties, cause death, serious bodily injury or substantial damage to property or to the environment.¹¹⁴

2. "Nuclear material" means plutonium, except that with isotopic concentration exceeding 80 percent in plutonium-238; uranium-233; uranium enriched in the isotope 235 or 233; uranium containing the mixture of isotopes as occurring in nature other than in the form of ore or ore residue;¹¹⁵

The Nuclear Terrorism Convention is part of what is called the international nuclear law and international anti-terrorism legal framework. The Convention regulates various aspects of the safety and control of nuclear material. Article 2 of the Convention sets out the causes which are considered offences when certain persons possess radioactive material or possess a device, with the intent to cause harm to persons, objects and property. As a result of the offences mentioned in Article 2, states parties are obliged to take action against these persons. "It is clear that national courts rather than an international jurisdiction are responsible for detecting the offence, determining the procedures used and imposing punishment under the state's criminal law."¹¹⁶ Thus, the peculiarity of the Convention is that in certain circumstances it provides that persons who illegally possess nuclear material or devices are to be punished.

After the terrorist attacks of September 11 and until today, the international community has been challenged with a considerable number of terrorist acts in different regions of the world. At the same time, global security is challenged by terrorist groups that carry out these acts. Creating nuclear weapons requires vast resources of nuclear material. States that possess nuclear weapons

¹¹⁴ International Convention for the Suppression of Acts of Nuclear Terrorism, Article 1 (1). Available at: 0533901e.doc (un.org)

¹¹⁵ International Convention for the Suppression of Acts of Nuclear Terrorism, Art. 1 (2). Available at: 0533901e.doc (un.org)

¹¹⁶ Jankowitsch-Prevor, O., International Convention for the Suppression of Acts of Nuclear Terrorism, *Nuclear Law Bulletin*, vol. 2005/2, p.19. Available at: https://doi.org/10.1787/nuclear_law-2005-5k9czgt915jk.

are in a constant race to obtain nuclear material from natural resources such as uranium. Therefore, the Convention is important to restrain the actions of states and other entities for the illegal use of nuclear material, and to prevent its transmission to terrorist organizations.

Conclusion and recommendations

The creation of international law is fundamentally different from the creation of national law. Every initiative for the creation of any Treaty, Convention, etc., requires a lot of work, but above all extraordinary persuasive skills, since we have to deal with over 190 countries (at least for initiatives taken within the framework of the United Nations) and in the same time we have 190 different interests. The legal framework of nuclear weapons in international law is balanced to a certain extent. For specific issues related to these weapons, there are certain treaties and conventions, but, taking into account the extraordinary danger of nuclear weapons, it turns out that more powerful instruments of international law are needed to urgently restrain states in the evolution related to these weapons.

The research has argued the issue of nuclear weapons in two aspects: legal and historical. The structure of the argument regarding the hypothesis that NWS are modernizing their nuclear weapons has shown that all 9 states that possess nuclear weapons are in the process of modernizing their nuclear program. So, the hypothesis is confirmed. In addition, regardless of the unpredictability of a "nuclear war", the future is threatened by the strengthening of the smaller nuclear states, i.e. by China, which is expected to be a serious competitor of the two giant nuclear states as Russia and the United States of America in the future. From the history of each country regarding their nuclear program, it allows us to understand that the future of nuclear weapons is unpredictable due to the secret work of these weapons by some countries, especially Israel. From the conclusions of the various research scenarios regarding the consequences of a nuclear war, they are alarming. The world is threatened with weapons capable of exterminating life on planet earth. Therefore, the efforts for a free-world of nuclear weapons should be more powerful and continuous until reaching the final goal, the total disappearance of nuclear weapons.

The structure of the argumentation of the hypothesis that the current legal framework in international law regarding to nuclear weapons is not effective or fails to be effective, results in the fact that no state that possesses nuclear weapons has even the slightest interest in participating and to ratify the Treaty on the Prohibition of Nuclear Weapons, which Treaty represents the most important recent development in the field of international law. The three nuclear states such as the USA, France and United Kingdom of Great Britain have publicly

stated that they never claim to be part of this Treaty. In general, the Treaty has been ratified by small states that do not have a significant impact in the field of nuclear weapons. The treaty itself has a special importance, for the reason that the term "prohibition of nuclear weapons" is used for the first time, but without the inclusion of all states that possess nuclear weapons in the ratification of a treaty that they will be parties to the initiative from the start, any other instrument will remain hostage to the "stubbornness" and interests of the NWS and will not be effective, since any treaty related to nuclear weapons only applies to states that possess nuclear weapons. The participation of other states in these Treaties has no impact and influence. So, it is of no consequence if any state that does not have nuclear weapons ratifies a tretay that obligates the "immediate elimination of all nuclear arsenals". The lack of interest and public declarations of disapproval of this Treaty reflect the fact that these countries will continue the "path of modernization" and competition among themselves, not excluding at any moment the risk of the concerning rhetoric about the use or threat to use nuclear weapons in Ukraine-Russia war. After the appearance in scene of this Treaty, a new situation appears in the field of international law. In this context, the International Court of Justice must give an Advisory Opinion regarding if this Treaty "concretely" and not "generally" prohibits the use and threat to use nuclear weapons, as the Treaty contains the word "prohibits".

The failure to enter into force of the Comprehensive Nuclear Test Ban Treaty represents a major gap in international law related to nuclear weapons. The pending into force of this convention allows the NWS to test various nuclear weapons. More than 2,000 nuclear weapons tests present the urgent importance of the entry into force of this convention. So, its entry into force means preventing states from testing nuclear weapons. The damage caused by the testing of nuclear bombs in the living environment, climate change, and the health of the people living in the vicinity of the test site are beyond what is allowed.

The role of the UNSC should be much stronger in leading the campaign for a free-world of nuclear weapons, but this seems difficult considering that the 5 permanent UNSC states are states that possess nuclear weapons. Any agreement agreed at the international level without the inclusion of all states that possess nuclear weapons as ratifying and implementing parties is claimed to be ineffective. First of all, in order to have successful international agreements regarding these weapons, close cooperation is needed between the NWS itself.

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