

Forum: General Assembly 1 (GA1)

Issue: *Preventing the sale of nuclear materials on the international black market*

Student Officer: *Lydia Chen*

Position: *Deputy Chair*

Introduction

After the serious damage that the nuclear bomb had caused in World War II, the prevention of nuclear weapons has always been a serious international problem. According to the United Nations Office of Disarmament Affairs, nuclear weapons are considered to be the most destructive weapons ever created, which results in not only mass destruction of the city but also radiation that will permanently damage a person's health. Since World War II international treaties have been signed among countries to regulate and use and develop nuclear weapons and technology. However, despite the international treaties that countries signed, there are still trafficks of nuclear materials in the black markets.

Trafficking of nuclear materials not only disobeys international law and creates tension between countries but also creates opportunities for terrorist groups to have access to the materials that can potentially create detrimental nuclear weapons. Illegally trafficked nuclear materials will have the potential to be used in any armed group in any country, which has the potential to cause millions of deaths which in turn would affect society and international peace. It is essential to adopt and strengthen resolutions in preventing nuclear materials from flowing into the black market and preventing the effects it can cause to the global community.

Definition of Key Terms

Nuclear Proliferation

Nuclear proliferation is the spread of nuclear weapons fissionable materials, and weapons-applicable nuclear technology and information to nations not recognized as "Nuclear Weapon States". Proliferation has been opposed by many nations due to the increasing possibility of nuclear warfare. (Encyclopedia Britannica)

Nuclear Materials

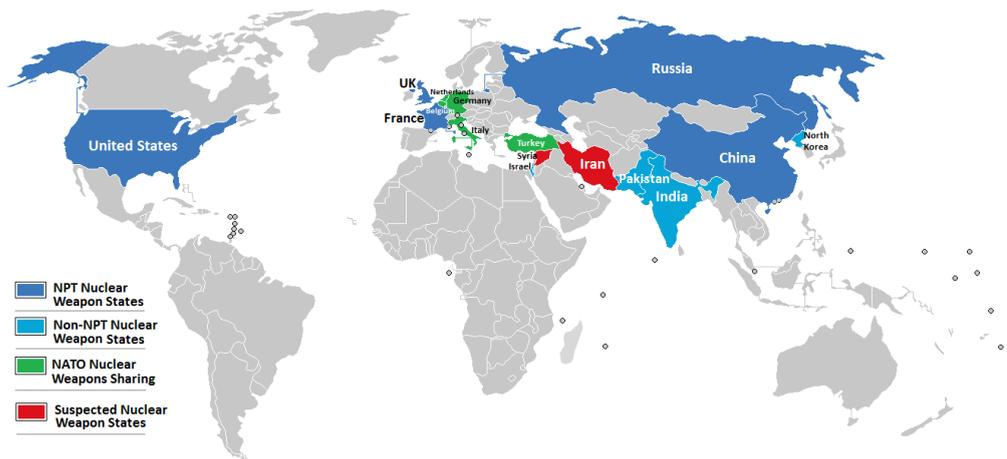
Nuclear materials is a collective term for any materials that can result in nuclear weapons, an explosive device that derives its destructive force from nuclear reactions (USDE). Nuclear weapons are often not smuggled. Instead, nuclear materials such as uranium and plutonium are often smuggled out of hospitals, or any institution that has access to nuclear materials. The smuggled materials are often on sale in the black market, where illegal trafficking occurs.

Nuclear Terrorism

Nuclear terrorism is the use of nuclear weapons in an act of terrorism.

Nuclear Weapon State

The nuclear-weapon states (NWS) are the states that are officially recognized as possessing nuclear weapons by the Treaty of Nonproliferation of Nuclear Weapons.



The graph of countries recognized, not recognized, and suspected as NWS

Canadian Nuclear Safety Commission (CNSC)

The Canadian Nuclear Safety Commission is an organization that is responsible for regulating the use of nuclear energy and materials to protect the health, safety, security, and the environment. THE CNSC highlights Canada's international commitments for the peaceful use of nuclear energy (CNSC).

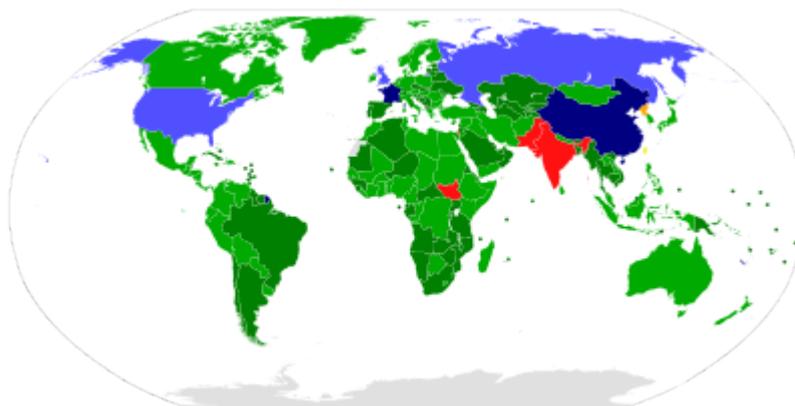
Background Information

History of nuclear technologies

In 1942 during World War II, the Manhattan Project in the United States of America was established to develop the first nuclear weapon in human history. On August 6th, 1945, the United States detonates a uranium bomb over Hiroshima, Japan, resulting in more than 140,000 deaths and causing millions of people to die from radiation-related illness. Three days later, on August 9th, 1945, a second plutonium bomb was exploded in Nagasaki, Japan, resulting in approximately 74,000 deaths by the end of 1945. After World War II, the UN General Assembly called for the elimination of Nuclear Weapons; however, the resolution failed and ended up creating a divide. The resolution divided countries between nuclear weapon states, which refers to countries that will test and develop new nuclear technologies, or no- nuclear weapon state -- which countries will prohibit any development associated with nuclear technologies.

Treaty of Nonproliferation of Nuclear Weapons

Although nuclear weapons remain unused after World War II, tensions regarding the potential of nuclear war among nuclear-weapon states or the use of nuclear weapons as a threat to other countries were high in the global community. In 1968, the General Assembly of the United Nations opened signatures for the Treaty of Non-Proliferation of Nuclear Weapons for the purpose of “prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy and to further the goal of achieving nuclear disarmament and general and complete disarmament” (UN). Among nations all around the world, 191 states had signed the treaty, including 5 nuclear weapon states.



The graph of parties that signed the Treaty of Nonproliferation of Nuclear Power

IAEA involvement

IAEA, founded on July 29th, 1957, is “the world's central intergovernmental forum for scientific and technical co-operation in the nuclear field. It works for the safe, secure, and peaceful uses of nuclear science and technology, contributing to international peace and security and the United Nations'

Sustainable Development Goals.” The work of the IAEA includes establishing legally binding international rules in the areas that cover nuclear safety, nuclear security, safeguards and nuclear non-proliferation, and civil liability for nuclear damage. Among all nations, 173 States are members of the IAEA, which are all bound to the international laws the IAEA established.

Convention on the Physical Protection of Nuclear Material

The Convention on the Physical Protection of Nuclear Material (CPPNM) is the main international legal instrument in the area of nuclear security created by the IAEA, which it adopted on 26 October 1979 and amended in 2005. The CPPNM “establishes legal obligations for Parties regarding the physical protection of nuclear material used for peaceful purposes during international transport; the criminalization of certain offenses involving nuclear material; and international cooperation, for example, in the case of theft, robbery or any other unlawful taking of nuclear material or credible threat thereof” (IAEA).

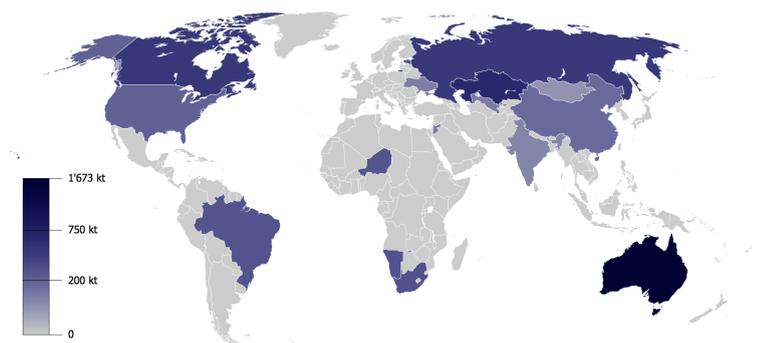
Nuclear smuggling incidents

Between 1992 and 2001, nuclear materials were smuggled out of nuclear states such as Germany, Russia, the United States of America. The nuclear materials that were smuggled were extremely radioactive and could potentially have been made into nuclear bombs if it had landed in the hands of terrorists or criminals. Despite the fact that the people who smuggled nuclear materials had been caught and sent into prison, the incident of smuggling that occurred across the States has yet to be resolved.

Key Issues

The illegal trading of nuclear materials

The nuclear materials demanded for developing nuclear technologies have always been a resource that nuclear states try to acquire. As the demands for materials increased while the use of nuclear technologies increased, the price of uranium skyrocketed in the past years. Due to the fact that the price of nuclear material remains high in the trading market, the trading of nuclear materials in the black market became a potential route for countries and terrorist groups to obtain nuclear materials illegally. Countries that are enriched in nuclear materials could secretly trade nuclear materials in the black market to other countries or, worse, terrorist groups, resulting in the potential for the development of nuclear weapons or dirty bombs.



Graph of countries with uranium reserves

Stolen nuclear materials

Nowadays, as nuclear technologies improve, nuclear materials are easy to access in hospitals that need nuclear materials for medical use. According to the United States Nuclear Regulatory Commission (U.S. NRC), “Radioactive materials can be helpful to diagnose and treat illnesses or in medical research.” and “about one-third of all patients admitted to hospitals are diagnosed or treated using radiation or radioactive materials.”; Furthermore, nuclear technologies had spread through the industry due to the convenience and the energy production it created. Not surprisingly, most of the radioactive materials used in the hospitals and industries have the potential to become a nuclear bomb, in which if stolen, it could potentially be used to develop nuclear weapons and result in thousands of deaths and injuries. While previous records of the stolen nuclear materials are not obtained or sold in the black market, the potential that the selling of nuclear materials in the black market still exists.

Major Parties Involved and Their Views

Russia

History of nuclear weapon

Russia, formerly the Soviet Union, is one of the five “Nuclear Weapon States” in which the production of nuclear weapons and technology started in 1943 during World War II. The reason why nuclear weapons were highly desired by the Soviet Union during WWII is because of their competition with the United States of America. Throughout 1949 and 1990, approximately 715 nuclear tests had been conducted.

Nuclear weapons, deterrence, and black market

Currently, Russia has 6,400 nuclear warheads, which is the country with the largest nuclear stockpile in the world. The country itself desired lots of nuclear weapons due to deterrence

theory: the threats of military retaliation directed by the leaders of one country to the leaders of another in an attempt to prevent the other country from resorting to the threat or use of military force in pursuit of its foreign policy goals. Russia is storing more and more nuclear weapons in order to control other nations by military power, since nuclear weapons are detrimental to a nation, countries that have less military power often obey countries with more power.

In Russia, the income that comes from trading in the black market is called the second economy of Russia. It is reported that approximately 20% of Russia’s economy--approximately \$315.9 billion USD--are from the black market. For a country that is constantly developing, designing, and testing nuclear weapons, materials of the nuclear weapons are always in demand. While it is true that there are plenty of natural resources in Russia, the process of mining the nuclear materials and purchasing it from the miners are costly and time consuming. It is possible for Russia to purchase nuclear materials from the black market since it not only allows Russia to have fast materials in hand, but also allows Russia to avoid taxes in trading.

Natural resource

Since the fall of the Soviet Union on December 26, 1991, the Russian Federation had been recognized as a legal State. According to the latest research in 2021, Russia has substantial economic resources of uranium, with about 9% of the world reasonably assured resources plus inferred resources up to \$130/kg – 505,900 tonnes of Uranium. Because of the rich resources of nuclear material -- uranium, a lot of countries suspect that the Soviet Union possibly sold some of the nuclear materials in the black market to the terrorist groups.



Graph of Soviet Union’s nuclear power plants

USA

Being one of the P5 nations and a “nuclear weapon state”, the USA had a stockpile of 3,750 active and inactive nuclear warheads plus approximately 2,000 warheads retired and awaiting dismantlement. Along with nuclear warheads, the USA also has 88 nuclear power plants in which at least 60 of them are operating.

History of Nuclear Weapons

The United States of America is the first country to manufacture nuclear weapons, and is the only country that has used nuclear weapons against another country. In the end of WWII, the United States of America dropped Hiroshima and Nagasaki, causing an estimated 140,000 people killed in Hiroshima, 74,000 people killed in Nagasaki, and the formation of Prohibition of Nuclear Weapons.

Current investment in Nuclear Weapons

Facing the nuclear inventions that are occurring along the nuclear weapon states, the United States of America didn't stop the use and investment in nuclear weapons. Although since the Cold War United States of America has decrease the rate of designing and building nuclear warhead, the National Nuclear Security Administration (NNSA) in the United States of America uses life-extension programs (LEPs) to extend the service lives of existing weapons in the stockpile, some dating back to the 1960s. The process of LEPs requires a lot of new nuclear materials. Due to the fact that legal training and the own production of nuclear materials are costly and time-consuming, there are possibilities that the United States of America will access their nuclear materials from the black market. Also, from all the nuclear weapons that were produced during WWII, there are possibilities that the US can tear down the nuclear weapons and sell the materials in the black market; The estimation of US black market is worth around \$2.55 trillion.

Israel

Israel has an estimated 90 nuclear warheads, with fissile material for up to 200, and is the only country in the Middle East that is developing nuclear weapons. Although Israel never publicly accepted or denied the claim of having nuclear weapons, they didn't sign the Treaty of Non-Proliferation.

Relationship with the Arabs

It is widely believed that the reason why Israel purchases and develops nuclear weapons is to serve as an insurance in case of extreme military emergencies. Also, Israel's investment in nuclear weapons might help smoothen the tension between the Arabs and Israel since the Arabs will recognize Israel's existence more.

China

Being one of the P5 nations and one of the nuclear power states, China has 47 operational nuclear power units and 11 nuclear power units under construction. Although the nuclear weapons held by China are not as tremendous as the USA and Russia have, the urge to modernize its military force in China forces the rapid development of nuclear weapons in the present days.

Before the fall of the Soviet Union, China had always been providing uranium ores to the Soviet Union in exchange for assistance in nuclear technology. After the fall of the Soviet Union, China still develops nuclear weapons on its own. As said by its previous leader, Mao Zedong, the development of nuclear weapons is to “avoid being coerced by nuclear-armed opponents”.

While it is true that China has natural resources for nuclear materials such as uranium, the process of mining and purchasing them are ineffective for the country. Therefore, possibilities of purchasing or selling nuclear materials in the black market could be a possible way to make profit for the country.

Germany

According to IAEA, Germany has six nuclear power reactors in operation and is in the process of phasing out its nuclear power programme. A total of 26 nuclear power reactors are undergoing decommissioning. However, despite the decommissioning of the nuclear power reactors, Germany have the highest reports of smuggling nuclear materials.

Timeline of Relevant Resolutions, Treaties, and Events

Date	Description of event
	Manhattan Project
August 13, 1942	The Manhattan Project in the United States of America was officially created. The project is the first research project that ultimately developed the first nuclear weapon.
	Bombing of Hiroshima
August 6, 1945	The United States of America denotes the first uranium bomb over Horishima, Japan, killing over 140,000 people and leave millions of individuals with radioactive-related diseases.
August 9, 1945	Bombing of Nagasaki

A second nuclear bomb was detonated by the United States of America in Nagasaki, Japan, resulting in the death of 74,000 people.

UN Calls for Elimination of Nuclear Weapon

January 24, 1946

After witnessing the detrimental effect that nuclear weapons caused, the UN General Assembly calls for the elimination of all nuclear weapons and sets up a task to address nuclear weapons.

Nonproliferation Treaty Open Signature

July 1, 1968

Under the Treaty on the Non-Proliferation of Nuclear Weapons, which states to “prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy and to further the goal of achieving nuclear disarmament and general and complete disarmament”, non-nuclear-weapon states agree never to acquire nuclear weapons, and the nuclear-weapon states make a legal undertaking to disarm (ICAN).

Establishment of International Atomic Energy Agency

July 26, 1957

The International Atomic Energy Agency (IAEA) was established as a forum of peaceful international use of atomic energy across all nations.

Convention on the Physical Protection of Nuclear Material

October 26, 1979

The Convention on the Physical Protection of Nuclear Material (CPPNM), created by the International Atomic Energy Agency, states to “establish legal obligations for Parties regarding the physical protection of nuclear material used for peaceful purposes during international transport; the criminalization of certain offences involving nuclear material; and international cooperation, for example, in the case of theft, robbery or any other unlawful taking of nuclear material or credible threat thereof” (IAEA).

Luch Scientific Production Association Smuggling Incident

October 1992

In the Luch Scientific Production Association in Russia, a chemical engineer smuggled out of the institute a 1.5 kilograms small quantities of highly enriched uranium

Munich, Germany Smuggling Incident

1994

In Munich, Germany, 1994, prospective buyers undercover by Germany police intercepted approximately 0.4 kilograms of plutonium at the Munich Airport, which

the material was believed to be originated in Russia's Institute of Physics and Power Engineering

Relevant UN Treaties and Events

- UN Security Council Resolution 984, 1 July 1968, (**S/RES/984**)
- UN Security Council Resolution 1540, 28 April 2004, (**S/RES/1540**)
- UN Security Council Resolution 1887, 24 September 2009, (**S/RES/1887**)

Evaluation of Previous Attempts to Resolve the Issue

The discussion of the legal trading of nuclear materials increased after the world shifted gears to focus on more sustainable, eco friendly, and effective use of technology and energy. However, there are not a lot of effective attempts to resolve the issue. Previous attempts include creating international law and treaties for countries to sign, or preventing the smuggling and selling of nuclear materials by the nation's police force. Considering that international treaties are not as effective when it comes to illegal trading in the black market, hence police forces within a nation have limited human resources to combat every black market that illegally trades nuclear materials, better solutions should be established.

Possible Solutions

Transparency of trading

Transparency of trading for countries that produce nuclear materials could be a possible solution to the issue since it tracks every single movement of the nuclear materials, hence preventing the flow of nuclear material to the black market by the government. However, there are possibilities that the government lies about the actual production of the nuclear materials, or the nuclear materials have been second handed into the black market by a non-governmental institute.

New treaties

Currently, treaties with regards to the regulation of nuclear weapons didn't have specific ties to the trading of nuclear materials in the black market. Based on this aspect, new treaties, laws, agreements, or regulations could be drafted to specifically address the regulation of nuclear materials. However, international treaties are not a concrete way to prevent this issue since countries can perform behind the back of the public's eyes, or choose to not sign the treaty in the first place.

Collective information center

A collective information center from all nations -- especially the nuclear-weapon states -- to inspect and regulate the trading of nuclear materials could be a possible solution. The pros of this solution are that there will be a step-by-step procedure to ensure that countries didn't illegally sell nuclear materials to terrorist groups or in the black market, and the nuclear materials that are smuggled out can be reported instantly. However, cons such as: which country should take the charge of regulating the information? What is considered a legal trade? and what amount of nuclear materials traded are considered unthreatening? could be a possible argument among nation-states.

Disarmament of P5 nations

Encouraging disarmament of P5 nation can effectively let some nations

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Appendix or Appendices

- I. Information of smuggling incidents around the world
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- II. IAEA report of Nuclear Trafficking
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