

Research Report

GAI – International Security and Disarmament
Evaluating measures to prevent the production of
nuclear weapons

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Forum	GA1- International Security and Disarmament
Issue:	Evaluating measures to prevent the production of nuclear weapons
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Introduction

Since the events of 6TH and 9th August 1945 in the Japanese cities of Hiroshima and Nagasaki claimed approximately 200,000 lives, the monstrous and murderous capacity of nuclear weapons was brought to the world's attention. Since then, treaties have been circulated amongst nations and agencies such as the International Atomic Energy agency (IAEA) have been established so as to allow the use of nuclear power to enhance technological advances whilst preventing the somewhat criminal use of nuclear technology. Many organizations have urged nations to prohibit the production of such weapons regardless of whether it is lawfully permitted in a particular country, primarily due to the destructive effects of such weapons of mass destruction.

The level of destruction is of such a large magnitude that it can shred cities to pieces and strip them of any buildings, monuments and people that defined them. The International Court of Justice situated in The Hague advised nations on the physical threats that nuclear bombs could pose and how such events would not only breach international law but would significantly infringe the UN Charter, the Universal Declaration of Human Rights and numerous widely accepted conventions. The role that nuclear disarmament has played within the political and international arena is most definitely of immense significance and therefore there is no doubt that eliminating the production of nuclear weapons is a matter of international security.

A number of nations worldwide have proclaimed themselves as Nuclear-weapon-free-zones however a number of counties are widely suspected of manufacturing nuclear weapons such as Iran and North Korea. The possession and production of nuclear weapons gives rise to uncertainty with regards to international security and has therefore been a pressing issue on the United Nation's agenda for decades.



Definition of Key Terms

Nuclear weapons: 'Weapons of mass destruction that are powered by nuclear reaction. Types of nuclear weapons include atom bombs, hydrogen bombs, fission bombs, and fusion bombs'¹

Nuclear proliferation: This term refers to the spread of nuclear weapons, fissile materials (primary materials used in the production of nuclear explosives as they can undergo sustained chain reactions with neutrons) and technology which is applicable to the manufacture of nuclear weapons to states which have not been recognized by the Non-Proliferation Treaty as Nuclear-weapon states.

Nuclear Disarmament: This term refers to the reduction and eventual eradication of nuclear weapons worldwide.

Umbrella States : The so-called 'umbrella' states refer to 'a guarantee by a nuclear weapons state to defend a non-nuclear allied state'.

General Overview

Prior to delving into the dynamic and tense arena of non-proliferation a little knowledge from a scientific perspective with regards to such weapons is crucial:

'An atomic explosion is a chain reaction in which atoms are split. This releases colossal amounts of energy, and particles that collide with more and more atoms causing an exponentially growing chain reaction. This process is called fission. The most powerful fission explosion is achieved by using enriched uranium and plutonium atoms, which are unstable and radioactive.

- Atomic bombs (also known as A-bombs or fission bombs) produce their explosive energy purely through nuclear fission reaction.
- Hydrogen bombs (also known as H-bombs, thermonuclear bombs or fusion bombs) produce energy through nuclear fusion reactions, and can be over a thousand times more powerful than fission bombs. In a similar process to the sun, they work by using fission energy to compress and heat fusion fuel.¹
- The destructive power of a nuclear explosion is measured in kilotonnes (which are equivalent to thousands of tonnes of TNT) and megatonnes (equivalent to millions of tonnes).²

¹ Starr, Steven. "An Explanation of Nuclear Weapons Terminology - Steven Starr." *Nuclear Age Peace Foundation*. Web. 03 Oct. 2011.

<http://www.wagingpeace.org/articles/2007/11/29_starr_explanation_terminology.php>

² "Nuclear Weapons - the Facts." *New Internationalist*. Web. 03 Oct. 2011.

<<http://www.newint.org/features/2008/06/01/nuclear-weapons-facts/>>.



Nuclear non-proliferation is defined as the effort to completely eradicate the production of nuclear weapons as well as the spread of nuclear weapon technology. Nations who are in the possession of nuclear weapons are evidently reluctant to allow other nations from obtaining the technology, whilst nations who feel threatened often want to obtain this technology in their possession. On the other hand, member states in favour of nuclear proliferation work hand in hand in order to monitor facilities which have the capability of producing such weapons and do their utmost to minimise the spread of such facilities.

Nuclear power comprises a significant proportion of energy sources within countries worldwide. In effect, the main question is how nuclear reactors give rise to concerns in relation to nuclear proliferation? The answer is relatively straight forward: considering the definition of nuclear weapons the two distinct elements that are required in the production of nuclear weapons are plutonium and highly-enriched uranium. Within nuclear reactors plutonium is created as a by-product which can then be extracted and directed towards the manufacture of such weapons. In addition, in order to fuel the plants enrichment facilities are required which can be utilised in such a way so as to produce weapon materials.

Considering the fact that nuclear power is a source of energy it would be irrational to consider the elimination of all nuclear power facilities, consequently organisations, treaties and conventions have been created so as to allow the continual use of such power plants whilst preventing the manifestation of nuclear weapons. The UN nuclear weapon watchdog is known as the International Atomic Energy Agency (IAEA) and is one of the key parties involved in this debate. The organisation inspects nuclear facilities on a regular basis worldwide in order to verify that nuclear power is being directed solely towards peaceful causes.

In order for a programme which promotes nuclear non-proliferation, co-operation on an international scale is mandatory if it is to succeed. When considering measures which have been taken to prevent the spread of weapons of mass destruction, * the 'Nuclear Non-Proliferation Treaty' (NPT) springs to mind. Currently 189 countries have signed the treaty and include the five recognised Nuclear Weapons States (NWS): People's Republic of China, France, The United States of America, The United Kingdom and The Russian Federation. More information with regards to the treaty will follow in the following sections.

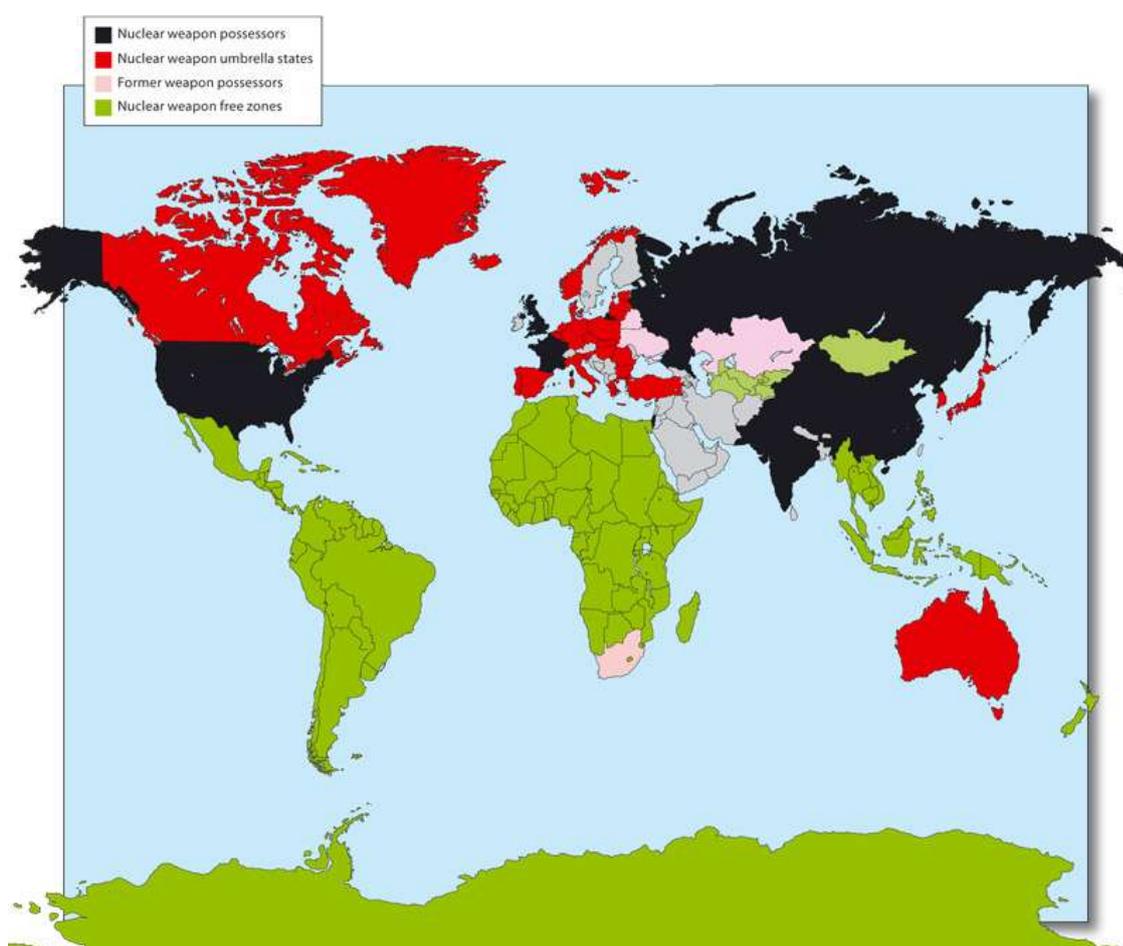
Furthermore, safeguards have been put in place. They are arrangements that highlight the control of nuclear materials. The ability to verify that nuclear plants are not using uranium for example for purposes in relation to the creation of weapons plays an essential role both within the political arena and with respect to international security.



These measures are often carried out by the IAEA and Parties that have signed the NPT allow the agency to inspect every nuclear facility in the nation- on a regular basis. Various means of surveillance i.e cameras are also put in place so as to supervise the works within the nuclear plants.

Some of the items listed on the safeguard also apply to nations that have not signed the treaty, however should a member state that has accepted all articles on the treaty and consequently signed it and breach the code in the form of say, reluctance towards letting the IAEA inspects its facilities, their actions can be reported to the UN Security Council which then has the right to impose sanctions which are often trade related.

The map below provides one with an overall overview of the nuclear status of nations worldwide:



Major Parties Involved

IAEA

As was highlighted above the IAEA monitors nuclear facilities worldwide. The organisation was established independently of the United Nations in 1957 however



today it reports back to the General Assembly and the Security Council. It promotes the peaceful use of nuclear power and prohibits its use in any military purpose. The organization has its headquarters in Vienna with two other regional offices in Tokyo and Toronto. The programs of the IAEA encourages the development of the peaceful applications of nuclear technology, provide international safeguards against misuse of nuclear technology and nuclear materials, and promote nuclear safety (including radiation protection) and nuclear security standards and their implementation.³

UN Security Council

The UN Security Council is one of the fundamental organs of the United Nations. The council's main objectives revolve around international peacekeeping operations and security. They are the only organ within the UN that are capable of deploying troops so as to implement a particular operation. Recently, the IAEA reported Syria to the security council as being a nuclear weapon state, the council then demanded that the nation suspend all its nuclear activities. Numerous resolutions have been passed in the past with regards to non-proliferation within the Security Council. An example would be when Iran was referred to the Council in mid 2006. The Council drafted a resolution which contained sanctions for non-compliance. The idea that this organ can directly influence the production of nuclear weapons is of extreme importance. Information encompassing all non-proliferation resolutions and issues presented to the council can be found on the Security Council's website.

Iran

The terms 'Iran' and 'Nuclear weapons' have often been witnessed in the same sentence making headlines worldwide. Iran became a member of the Non-Proliferation Treaty when the treaty was published. However, in 2003, the IAEA expressed its discontent with Iran's compliance with the treaty including the fact that the nation had failed to declare its uranium enrichment program. However, the key event in the history of the Iranian nuclear program was in 2006 when the Council demanded that Iran suspend its nuclear enrichment operations and by the end of the year Iran had completely dismissed the Council's demands², therefore a new resolution was drafted imposing sanctions on the nation. Over the past five years the list of sanctions grew from one imposed on certain individuals to an arms embargo and extension of the asset freeze. In 2011 adjustments were made to the 1929 Resolution that was passed with a 12-2 majority in 2010 (with Brazil and Turkey voting against and one abstention from Lebanon). Today a total of seven resolutions have been passed on Iran within the council. Iran insists enrichment activities are

³"IAEA Safeguards Overview: Comprehensive Safeguards Agreements and Additional Protocols."

International Atomic Energy Agency (IAEA): The Nuclear Safety Culture: Strengthening Safety at Nuclear Installations. Web. 05 Sept. 2011.

⁴"Nuclear Weapons - Iran." *GlobalSecurity.org - Reliable Security Information.* Web. 05 Sept. 2011.



intended for peaceful purposes, but much of the West, including the United States, allege that Iran is pursuing nuclear weapons, or a nuclear weapons "capability".⁴

North Korea

Vast amounts of information can be found with respect to DPRK's nuclear program. However the nation's current status stands as follows:

- North Korea would freeze its existing nuclear program and agree to enhanced International Atomic Energy Agency (IAEA) safeguards
- Both sides would cooperate to replace the D.P.R.K.'s graphite-moderated reactors for related facilities with light-water (LWR) power plants.
- Both countries would move toward full normalization of political and economic relations.
- Both sides will work together for peace and security on a nuclear-free Korean peninsula.
- And that both sides would work to strengthen the international nuclear non-proliferation regime.⁵

Following the establishment of the agreement, tensions between the two states escalated as The US began to suspect that North Korea was in non-compliance with the agreement and this was later confirmed by North Korea official in 2003 where they proclaimed their nation as a nuclear state they confirmed that they did indeed have a nuclear weapon program. After having expelled IAEA officials, the most recent developments in relation to the North Korean nuclear arms development are notably the nuclear explosions that Russia claims to have been carried out by DPRK in 2008 and the statement issued on 25th April 2009 by North Korea affirming that they had officially reactivated all their nuclear facilities.

Israel

Israel has not confirmed that it has nuclear weapons and officially maintains that it will not be the first country to introduce nuclear weapons into the Middle East. Yet the existence of Israeli nuclear weapons is a "public secret" by now due to the declassification of large numbers of formerly³ highly classified US government documents which show that the United States by 1975 was convinced that Israel had nuclear weapons.⁶ Israel is regarded as being one of four nuclear-armed nations that have yet not been recognized as official nuclear weapons states by the NPT. Israel has not signed the Non-Proliferation Treaty however has expressed its support for the Middle-East to be a nuclear free zone.

⁵ Rang, Lee Wha. "Nuclear Weapons Program - North Korea." *Federation of American Scientists*. Web. 05 Sept. 2011.

⁶ "Nuclear Weapons - Israel." *Federation of American Scientists*. Web. 05 Sept. 2011. <<http://www.fas.org/nuke/guide/israel/nuke/>>.



The Nuclear Suppliers Group

This group consists of nuclear supplier countries whose main objective is to regulate nuclear exports and any such related exports via the implementation of various guidelines that all participating nations must abide by. Their objectives revolve around the reduction of nuclear proliferation. They limit the export of materials and technology that could be applicable to the production of nuclear weapons. The NSG currently has 46 members.

Relevant (UN) Documents

1. Security Council Resolution 1929:

http://www.iaea.org/newscenter/focus/iaeaairan/unsc_res1929-2010.pdf

2. Security Council Resolution 1887:

<http://www.cfr.org/un/un-security-council-resolution-1887-non-proliferation/p20316>

3. Non-Proliferation Treaty:

<http://www.iaea.org/Publications/Documents/Infcircs/Others/infcirc140.pdf>

4. IAEA Safeguards overview:

http://www.iaea.org/Publications/Factsheets/English/sg_overview.html

5. NSG Guidelines:

<http://www.nuclearsuppliersgroup.org/Leng/05-public.htm>

6. Comprehensive Test-Ban Treaty

<http://globalsolutions.org/prevent-war/nuclear-disarmament/comprehensive-test-ban-treaty-ctbt>

7. Solutions to Nuclear Disarmament

http://en.rian.ru/valdai_op/20110316/163031957.html

8. Campaign for Nuclear Disarmament (CND)

<http://www.cnduk.org/home>

Previous attempts at resolving the issue

Nuclear Non-Proliferation Treaty



As its title suggests, the NPT is most probably one of the key attempts at combating the issue. Since it was first established on 5th March 1970 189 countries have signed the treaty five of which are known to be Nuclear-Weapon States and are the permanent members of the Security Council. In addition, four non-party states, 3 of which have declared that they possess nuclear weapons: India, Pakistan and DPRK and the fourth being Israel. The treaty is composed of preambles and eleven articles, and although it is not explicitly stated within the treaty, we often refer to it as being based on three principle pillars:

1. Disarmament ⁴
2. Non-proliferation
3. The right to peacefully use nuclear technology.

The treaty serves as a tool in this case. If a nation does not sign the treaty then a high degree of speculation from other nation may result. Furthermore, as was stated earlier in this report should a party infringe any article in the treaty than he nation could be subject to an investigation which would be undertaken by the IAEA and should the nation refuse such investigation then they could be referred to the Security Council whereby sanctions could be imposed.

The Nuclear Suppliers Group, the Security Council and the IAEA are the key parties that focus on the issue at hand. The documents highlighted below are the most significant ones in relation to this issue.

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Possible Solutions to the Issue

Essentially the fundamental aim of all these treaties and organizations is to maintain international peace and security. The first step on this path towards a nuclear-free world would be to ensure that all countries sign the NPT. This may prove impossible for now however by being bound to the NPT a nation is somewhat protected from harm. Nations which have already signed the treaty but have not acted in compliance with it should face stricter consequences- as is the case with Iran. **The principle issue here is that many believe that the use of nuclear weapons during armed conflict violates international humanitarian law.** Although a negative approach is not the optimal way forward however when countries such as DPRK or Iran refuse to cooperate and my pose threats to international security imposing sanctions seems to be one of very few options. Various campaigns such as the Campaign for Nuclear Disarmament (CND) have been established and information in relation to their approach can be found on the link above.

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