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Nuclear proliferation and terrorism: Threat to global security

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Abstract

This work focused on Nuclear Proliferation and Terrorism: Threat to Global Security. Early efforts at a worldwide non-proliferation drive started in 1953 with the atom for peace programme. But it was not until in 1957, when, in order to forestall the proliferation of nuclear weapons technology by too many states, the United States, Russia (The Soviet Union) and 22 other countries which possessed nuclear energy as well as the technology, signed and ratified the statute which created the International Atomic Energy Agency (IAEA) on July 27th of that year. This paper examined that terrorists have tried to acquire nuclear weapons or the technology to make one in order to inflict danger on perceived enemies and gain public attention. Focusing on the danger of nuclear weapon proliferation, the paper finds out that efforts at safeguarding and monitoring the use of radioactive materials by the IAEA are inadequate as some radioactive materials are unaccounted for. The paper, thus, argues that the IAEA experiences lack of cooperation by some countries which have refused it access to its nuclear facilities inspection. Also the failure by some countries especially the US and Russia, to fully disarm or eliminate their nuclear weapon stockpiles has inadvertently increased the risk of nuclear proliferation and have encouraged some other countries to develop and stockpile their own weapons for defensive purposes. This paper is historical; hence, it adopts a qualitative method of analysis. Useful piece of information were obtained from important relevant documents, reports and array of secondary sources.

Keywords: Nuclear, Proliferation, Terrorism, Threat, Global Security

Introduction

Many scholars have, right from the beginning advocated against the use and spread of nuclear weapons. Former United States President Dwight D. Eisenhower delivered a speech title "Atoms for Peace" to the United Nation General Assembly in New York City on December 8 1953. In his speech he said,

I feel impelled to speak today in a language that in a sense is new, one which I, who have spent so much of my life in the military profession, would have preferred never to use. That new language is the language of atomic warfare [1]

Eisenhower used his speech to argue against the development of nuclear weapons and also to form an international forum whereby the need for the establishment of an agency whose job it is in preventing other countries from developing and spreading nuclear weapons would be resolved. His idea would later form the basis of the origin of the International Atomic Energy Agency (IAEA).

On the work of the IAEA regarding nuclear verification, EL Baradei sees the IAEA as a "watchdog". The Agency, in its role of verifying nuclear non-proliferation, has been much in the public view, often referred to as "The world nuclear watchdog". He also says that "given the increasing threat of proliferation both by states and by terrorists, one idea that may now be worth serious consideration is advisability of limiting the processing of weapons usable material in ycivilian nuclear programmes" [2].

He also observed that the most dramatic outcome has been the clandestine pursuit of nuclear weapons and nuclear weapons capability by a number of countries, coupled with what has been the emergence of a 'nuclear supermarket' – an illicit network of trade in sensitive nuclear equipment and designs [3]. He says further that "The linkage between nonproliferation and disarmament should be obvious by now. As long as some countries continue to rely on nuclear weapons for their security, others will be inclined to emulate them" [4]. Mary H. Cooper in her work, "Nuclear Proliferation and Terrorism", looks at the issue of nuclear proliferation and terrorism. She points out that concern about nuclear terrorism rose to new levels when Abdul Oadeer Khan, the father of Pakistan's nuclear weapons programme confessed to peddling nuclear weapons technology to some rogue states. Given the grim realities of the post September 11 world, fear of nuclear terrorism has dominated the international community as well as its response to Khan's revelations. As a result, keeping weapons grade plutonium and Highly Enriched Uranium (HEU) out of hands of terrorist is the only sure way to block terrorist from building nuclear bombs ^[5]. Leonard S. Spector who argues alongside cooper opines that a 'dirty bomb' can be made easily with radioactive materials by terrorists. Moreover, he points out that civilian nuclear waste facilities are much easier to penetrate than weapon facilities [6].

The paper is divided into seven parts. The first part is introduction. The second section deals with the theoretical framework on which the work derives its analysis. This is followed by an analysis of nuclear proliferation and terrorism and its threat to global security. The fourth part discusses nuclear instability in South Asia using India and Pakistan as a cash study. The fifth part examines IAEA and the Islamic Republic of Iran. The penultimate section looks at the International Atomic Energy Agency and the Democratic Peoples' Republic of Korea (North Korea). The last part is the conclusion. The argument tends to suggest that nuclear proliferation and terrorism are very deadly and cause serious damage to a country's socio-political and economic system as well as pose threat to global security and as a result if IAEA is given right kind of support and cooperation, could do better and achieve better results.

Theoretical Framework

The theoretical conception of this work is based on the system theory. System theory basically is a theory in which the world or international community is seen as a system. According to Joshua Goldstein, one of the proponents of this theory views the world as an international system based on a set of relationships among the world's states, structured according to certain rules and patterns of interactions. Some of such rules are explicit, some implicit. They include who is a member of the system, what rights and responsibilities the members have and what kind of actions and responses normally occur between states [7]. Going by this view of the world as an international system, then theoretically, this system is divided into sub-system. Each sub-system makes up the complete international system. These subsystems are represented by actors, in this case nation state actors while an international organization, in this case International Atomic Energy Agency (IAEA) represents the main system [8].

In system theory, any problem or defect in the sub-system affects the rest of the system as a whole. The nation state actors are members of the IAEA and have decided

collectively to abide by its statute in order to protect global security. Going by this analogy of the IAEA being the system or the representatives of their own individual or regional systems, therefore, any problem or potential problem within the various sub-systems would inadvertently affect the general system. The IAEA is an international organization made of states that are member of it. The IAEA of the representative of the international system tries to forestall any problem or breakdown of global security by preventing states, both members and non-members states of the IAEA from proliferating nuclear weapon, then it becomes a problem which will affect the international security (in this case the IAEA) as it would lead to political and military tensions which ultimately, would lead to a breakdown of global peace and security. The IAEA thus tries to uphold the values of the international system through its functions. It also tries to uphold peace and security in the international system.

Nuclear Proliferation and Terrorism: Threat to Global Security

Since the September 11, 2001 attacks on the United States by terrorists, the IAEA and the rest of the international community have faced the prospect of terrorists acquiring nuclear weapons to use against the civilised world. Concern about nuclear terrorism rose to new levels when Abdul Qadeer Khan, the revered father of Pakistan's nuclear bomb, confessed in 2004, to peddling nuclear weapons technology to some rogue states such as Libya. Khan's dramatic confession punctured any remaining illusions that 60 years of non-proliferation efforts had kept the world's most dangerous weapons out of the hands of countries hostile to the US and her allies [9]. Giving the grim realities of the post September 11 world, fear of nuclear terrorism has dominated the international response to Khan's revelations. Countries of the world especially the US and her allies are increasingly getting worried about nuclear materials falling into the hands of terrorist and terrorist group such as Al Qaeda led by Osama Bin Laden, which are hell bent on destroying the US and her western allies [10].

Khan's confession followed the revelation that he had operated a busy black market trade in nuclear materials, blueprints for nuclear weapons making and missiles capable of delivering nuclear warheads. Khan's vast network involved manufactures in Malaysia, middlemen in the United Arab Emirates and the governments of Libya, North Korea and Iran. Several countries within Khan's illicit network were known to have violated the treaty (The 1968 Nuclear Non-Proliferation Treaty) and hidden their weapons programmes from inspectors of the International Atomic Energy Agency (IAEA). Terrorists especially radical extremist, many of whom have a burning hatred for the US and her policies have never hidden their desire to acquire a nuclear weapon or any other weapons of mass destruction, while the ability of terrorist stage a full scale nuclear attack is of paramount concern, some experts say the use of a conventional explosive device containing radioactive waste – a so called 'dirty bomb' is far more likely.

The breakup of the Soviet Union in late 1991, which brought an end to the rigid controls of the Soviet internal security apparatus and began a period of social and economic turmoil, introduced a major new proliferation threat. This was the risk that portions of the massive Soviet nuclear weapons arsenal might leak to terrorist organisations seeking nuclear weapons. The Soviet nuclear legacy included tens of

thousands of nuclear weapons, hundreds of tens of highly enriched uranium and plutonium not yet incorporated into weapons and many thousands of scientists with expertise in the production of nuclear arms. To address this threat, in 1991, the United States launched the cooperative threat reduction programme, also known as Nunn-Lugar programme, named after the two US Senators who launched the initiative - Democrat Sam Nunn and Republican Richard Lugar. The programme provides monetary and other assistance for Russia [11]. This assistance is intended to help Russia improve security over nuclear weapons and materials; eliminate excess highly enriched uranium and plutonium and employ former Soviet nuclear scientists in non-military research activities. Assistance is also provided to other countries of the former Soviet Union to address similar proliferation risks within their borders.

In a similar development in 2003, the US launched a major new effort to address the threat of nuclear weapons falling into the hands of terrorist. This new effort was called the Proliferation Security Initiative. The initiative seeks to aggressively enforce national and international laws to seize cargoes containing equipment and material that could be used to manufacture weapons of mass destruction. Recently, more than 30 countries are participating in this effort ^[12].

In April 2004, the UN Security Council adopted resolution 1540. The resolution requires UN members to implement effective measures to secure within their borders the knowhow, equipment and other materials that could be used to make nuclear weapons and to adopt effective export controls. This resolution was passed because of growing concerns about terrorists' acquisition of nuclear weapons and other weapons of mass destruction. It was also passed because of the revelations of the Pakistani scientist Abdul Qadeer Khan that he sold or proliferated nuclear weapons and materials secretly to rogue states [13].

Nuclear Instability in South Asia (India and Pakistan)

India and Pakistan are two countries that continue to pose challenges to the IAEA. Both countries are members of the IAEA. Both countries are not signatories to the NPT. Both India and Pakistan began their nuclear weapons programmes in the late 60's and early 70's respectively. They have continued to test and develop nuclear weapons ever since. In 1998, India and Pakistan conducted a series of nuclear weapons tests in a tit for tat manner. Both countries have been rivals and see each other as enemies. Interestingly they have a common history, a common colonial past as well as a common culture. They have been enmeshed in conflict ever since independence from Britain in 1947 and 1948 respectively. India and Pakistan have fought 3 conventional wars against each other over the disputed land of Kashmir, claimed by both countries. The issue of the disputed territory of Kashmir has always been a sore point in the relationship between the two countries. The conflicts between India and Pakistan have seriously threatened the peace and stability of

India and Pakistan both possess nuclear weapons. Many international scholars are of the view that any likely future conflict between them might be a nuclear conflict. India and Pakistan both came close to using nuclear weapons against each other in a conflict. In the spring and summer of 1999, one year after the exchange of nuclear tests, India and Pakistan did fight a war in the mountain along the line of control separating the portions of Kashmir controlled by each

country, near the Indian town of Kargil. The 1999 Kargil conflict is disturbing not only because it demonstrates that nuclear armed states can fight wars, but also because the organisational biases of the Pakistan military were a major cause of the conflict. Such conflict increases the risk of a deliberate but limited use of nuclear weapons on the battlefield [14].

The public stance of the two states on non-proliferation differs markedly. Pakistan has initiated a series of regional security proposals. It has repeatedly proposed a nuclear free zone in south Asia and has proclaimed its willingness to engage in nuclear disarmament and to sign the non-proliferation treaty, if India is willing or would do so. It has endorsed a US proposal for a regional five power conference to consider non-proliferation in South Asia. India has taken the view that solutions to regional security issues should be found at the international level rather than at the regional level, since its chief concern on nuclear issues is with China. It therefore rejects Pakistan proposal [15].

The United States for some years, especially under President Bill Clinton, pursued a variety of initiatives to persuade India and Pakistan to abandon their nuclear weapons programmes and to accept comprehensive IAEA safeguards on all their nuclear activities. To this end the Clinton administration proposed a conference of the nuclear weapon states, Japan, Germany, India and Pakistan. India refused this and similar previous proposals and countered with demands that other potential weapons states, such as Iran and North Korea, should be invited and that regional limitations would only be acceptable if they were accepted equally by China. It is pertinent to note that India and China are rivals and have fought a war between themselves in 1962. Both countries possess nuclear weapons. However, the US would not accept the participation of Iran and North Korea and these initiatives have collapsed.

Another more recent approach to encourage non-proliferation centres on 'capping' the production of fissile material for weapons purpose, which would hopefully be followed by a 'roll back' of a nuclear weapons programme. To this end, India and the USA jointly sponsored a UN general assembly resolution in 1993 calling for negotiations for a 'cut-off' convention [16]. Should India and Pakistan join such a convention, they would have agreed to halt the production of fissile materials for weapons and to accept international verification on their relevant nuclear facilities (enrichment and reprocessing plants). It appears that both countries are not prepared to join negotiations regarding such a cut-off treaty, under the UN conference on disarmament.

Bilateral confidence-building measures between India and Pakistan to reduce the prospects of confrontation have been limited. In 1990 each side ratified a treaty not to attack the others nuclear installations and at the end of 1991, they provided one another with a list showing the location of all their nuclear [17] plants, even though the respective lists were regarded as not being wholly accurate. Early in 1994 India proposed a bilateral agreement for a 'no first use' of nuclear weapons and an extension of the 'no attack' treaty to cover civilian and industrial target as well as nuclear installations.

IAEA and the Islamic Republic of Iran (Iran)

Ever since 2003, Iran has been a recurring decimal within the IAEA and the nuclear non-proliferation framework. Iran, like most other countries is a signatory to the nuclear non-proliferation treaty. It has also allowed the IAEA to carry out

safeguards activities on its nuclear facilities. It is also a member of the IAEA.

Iran started its nuclear programme in the 1980's with help from the then Soviet Union. In the late 1990's it began a secret uranium enrichment programme. Most of the materials and equipment it was using came from nuclear smuggling and proliferation networks of the Pakistani scientist Abdul Qadeer Khan, who sold some uranium enrichment equipment to Iran. When Khan's illicit trafficking network was discovered. In February 2003, Iran's secret nuclear programme was discovered. In February 2003, Mohammed El Baradei, the Director General of the IAEA travelled to Iran with a team of inspectors to investigate Iran's nuclear programme. In November 2003, Dr. El Baradei reported to the Board of Governors that Iran had repeatedly and over an extended period failed to meet with its safe guards obligations, including failing to declare its uranium enrichment programme. Although he stated that there was 'no evidence' that Iran was pursuing nuclear weapons, he added that he was "still not in a position to conclude that there are no undeclared nuclear materials or activities in Iran" [18]. On October 18, 2003, Iran signed the additional protocol at the IAEA headquarters in Vienna, and pledged to set in accordance with its provisions pending completion of ratification of the protocol. In response to a diplomatic initiative by the three biggest countries in Western Europe -France, Germany and the U.K. Iran pledged to suspend its plutonium reprocessing and Uranium enrichment related activities.

However, on August 1, 2005, following the change of government from the cooperative Ayatollah Mohammed Khatami to the fiery radical Mahmud Ahmedinejad, Iran ended its suspension of uranium enrichment activities and ended implementation of the additional protocol. Since then, all efforts to make Iran halt its uranium enrichment activities by the three European countries viz France, Germany and the UK have been unsuccessful. Instead Iran has continued to defy the international community by continuing to enrch uranium against the agreement reached with the 3 European countries. Iran has so far continued to justify its actions, claiming that its nuclear programmes are strictly for peaceful purposes (generating electricity). This has not cleared the doubts and suspicious which the US and her western European counterparts have and they have consistently accused Iran of secretly trying to develop a nuclear weapon. The IAEA so far, has not gotten the kind of cooperation it expected Iran to give it. In fact, the IAEA has not only accused Iran of failing to report its activities but has found Iran's nuclear activities as 'suspicious'.

On December 23, 2006, the UN Security Council passed a resolution requiring Iran to suspend its uranium enrichment activities and requiring all UN members and the IAEA to impose certain sanctions on Iran ^[19]. Thereafter, sanctions were imposed on Iran. Another round of sanctions on Iran were imposed by the UN security council in April 2007. So far, Iran has not changed its position and neither have the USA. Both countries have been trading words and making bellicose statements against each other. A third round of sanctions is being considered.

The IAEA and the Democratic People's Republic of Korea (North Korea)

The Democratic People's Republic of Korea (DPRK) or simply North Korea acceded to the NPT in 1985 as a

condition for the supply of a nuclear power station by the Soviet Union. However it delayed concluding its NPT safeguard agreement with the IAEA, a process which should take only 18 months, until April 1992. Ever since then, North Korea like Iran has been a problem for the IAEA and the international community [20].

In February 1993, the IAEA called on North Korea to allow for inspections on its nuclear facilities and storage sites to verify the initial stocks of nuclear materials. North Korea refused and on March 12 announced its intention to withdraw from the NPT (three months' notice). In April 1993, the IAEA Board of Governors concluded that North Korea was in non-compliance with its safeguard obligations and reported the matter to the UN Security Council. In June 1993, North Korea announced that it has 'suspended' its withdrawal from the NPT, but subsequently claimed a "special status" with respect to its safeguards obligations. This was rejected by the IAEA [21]. Once North Korea non-compliance had been reported to the UN Security Council, the essential part of the IAEA's mission had been completed. However, inspections in North Korea continued.

In order to defuse international concern over North Korea's activities and behaviour, the United States brokered a deal in 1994 with North Korea in which North Korea pledged to stop its nuclear weapons programme in exchange of US energy related assistance to North Korea. This agreement is known as the Agreed Framework between the USA and North Korea. Following bilateral negotiations between North Korea and the USA, and the conclusion of the Agreed Framework of 1994, the IAEA has been given additional responsibilities. The agreement requires a freeze on the operation and construction of North Korea's plutonium production reactors and other related facilities, and the IAEA is responsible for monitoring the freeze until the facilities are eventually dismantled. North Korea remains uncooperative with the IAEA verification work and is yet to comply with its safeguards agreement.

In June 2002, the USA and the IAEA accused North Korea of secretly enriching uranium to build nuclear weapons. Consequently, the USA stopped all oil shipments to North Korea. On January 10, 2003 North Korea gave notice of its withdrawal following these US allegations. The withdrawal became effective on April 10, 2003, making North Korea to be the first state ever to withdraw from the treaty. In response to North Korea's belligerent actions, a series of discussion between North Korea, USA, China, South Korea, Russia and Japan were build. These discussions are known as the six party talks. The first of such discussions started April 2004 concerning North Korea's weapons programme. Other negotiations within the six party talks followed with little success.

On January 10, 2005, North Korea declared that she was in possession of a nuclear weapon. At the end of 2005, North Korea halted all six party talks concerning its nuclear programme for 13 months due to the freezing of its financial assets by the US such as those in a bank in Macau.

On October 9, 2006, North Korea announced that it has performed its first ever nuclear weapons test ^[22]. This generated a crisis in the region as well as in the UN Security Council. On December 18, 2006, the six party talks finally resumed and on February 2007, North Korea pledged to halt all enrichment activities for its frozen financial assets and energy aid. The six party talks have stopped but would likely continue in the future.

Conclusion

The International Atomic Energy Agency (IAEA) has so far, been able to curtail the spread of nuclear weapons proliferation. Through its safeguards and verification programme, a lot of countries have abandoned the quest to acquire nuclear weapons. Many countries have instead opted to use nuclear power to generate electricity and for carrying out research on medical, agricultural and industrial uses [23]. Nuclear terrorism is a serious issue besides nuclear proliferation which needs to be tackled with a sense of urgency. Since the September 11 attack on the US in 2001, terrorist have sought to acquire nuclear weapons or the technological know-how needed to make a nuclear bomb. A grim scenario would be a terrorist organisation like Al-Qaeda possessing a nuclear bomb. This seems to be the ultimate aim of Al-Qaeda and other such likeminded terrorist group. Still, IAEA Director-General, Mohammed El Baradei paints a grim picture of the future of nuclear non-proliferation and calls for a revolutionary overhaul of international systems and policies to prevent nuclear terrorism [24].

In conclusion, the IAEA and its efforts at nuclear non-proliferation need to be better supported and equipped to face the arduous challenge of keeping the world safe from nuclear weapons. Through mutual co-operation and dialogue, the IAEA would be in a better position to encourage countries to resist the temptation of making nuclear weapons in order to ensure global peace and security.

September 11 has given a new sense of urgency to a danger that the world has been concerned about for some time and in that sense it provide an opportunity. The scope of these attacks has underlined the need for countries and the IAEA to take vigorous action now to end the possibility that terrorist groups or rogue states could launch even more devastating attacks in the future [25].

Proliferation of nuclear weapons and missiles is an urgent and profound threat to the security of all state and it requires urgent action. All states should elevate security against nuclear weapons and other weapons of mass destruction and missile proliferation to an overarching imperative that trumps other, secondary considerations [26].

States should increase the effectiveness of their export control systems and assist other states in the same end. The loopholes in the NPT should be closed or amended and only countries which are signatories of the NPT's Additional Protocol should be allowed to import equipment for civilian nuclear reactors. Non-proliferation initiatives such as the Proliferation Security Initiative (PSI) should be improved upon and expanded to allow more countries to participate in it. Research into the peaceful application of nuclear energy in the fields of medicine and agriculture should continue. Also, less developed countries of the world should be allowed to benefit from this. The best way to defeat a man in a battle is to cripple his economy [27]. The economy of the less developed countries can be boosted when allowed to participate in research into the peaceful application of nuclear energy in the fields of medicine and agriculture.

Finally, it is recommended that countries being investigated for alleged NPT violations should be barred from holding positions of influence in the IAEA. Moreover, countries which possess nuclear weapons like the USA, Russia etc., should disarm stop, gun-boat stratagem and engage in disarmament negotiations to ensure cooperation, equity as well as security [28].

With the foregoing done, the called for the globalization of

worldwide security to prevent nuclear proliferation and terrorism shall be greatly, realised.

References

- 1. Dwight D Eisenhower. Atoms for Progress and peace, Washington, US Department of State Publication. 1954; 53(3):3
- 2. Mohammed El Baradei. Security Today and Tomorrow, IAEA Bulletin. 2007; 48(2):2
- 3. El Baradei. Security Today and Tomorrow... 2
- 4. El Baradei. Security Today and Tomorrow... 3
- Mary H Cooper. Nuclear Proliferation and Terrorism", The CO Researcher. 2004; 14(13):294.
- 6. Leonard S Spector. Nuclear Weapon Proliferation, Microsoft Encarta Encyclopaedia, www.microsoft.com/encarta/nuclearweaponsproliferation, 3.
- 7. Joshua Goldstein. International Relations, fifth Edition: New Jersey: Pearson Educational Publishing Co., 2002.
- 8. KA Opuware, JC Chukwu. International Atomic Energy Agency (IAEA) and Nuclear Non-Proliferation: An Assessment, The International Scholar Journal of Arts, 2018. 1(1).
- 9. Cooper. Nuclear Proliferation and Terrorism... 314
- 10. Cooper. Nuclear Proliferation and Terrorism... 315
- 11. Spector. Nuclear Weapon Proliferation... 4
- 12. Spector. Nuclear Weapon Proliferation... 4
- 13. Spector. Nuclear Weapon Proliferation... 5
- 14. Robert J Art, Robert Jervis. (eds.) International Politics Enduring Concepts and Contemporary Issues, New York: Pearson Educational Publishing Co, 2007, 240.
- 15. Art, Jervis, (eds.) International Politics Enduring... 240
- 16. Art, Jervis, (eds.) International Politics Enduring... 242
- Nuclear Proliferation, Wikipedia: The Free Encyclopaedia. www.wikipedia.org/wiki/nuclear_proliferation
- 18. "Nuclear Proliferation"
- 19. "Nuclear Proliferation"
- 20. "Nuclear Proliferation"
- 21. "Nuclear Proliferation"
- 22. "Nuclear Proliferation"
- 23. JC Chukwu. The Proliferation of Nuclear Weapons and the Arms Race: The Post War Deterioration of Relations between United States and Soviet Union 1949 1964", International Journal of Research in Education Humanities and Commerce. 2018-2022; 3(2):256.
- 24. Mohammed El Baradei. Saving Ourselves from Self-Destruction, The New York Times, 2004, 37.
- 25. US Foreign Policy Agenda, Electronic Journal of the US Department of State. 2002; 7(3):10.
- 26. US Foreign Policy Agenda, Electronic Journal...10
- 27. JC Chukwu. Boko Haram Insurgency and its Implication on National Security, International Scholars Journal of Arts and Social Science Research. 2019; 1(2):9. www.theinterscholar.org/tisja
- 28. JC Chukwu. The Dualism in the Activities of the International Atomic Energy Agency (IAEA) Towards Nuclear Non-Proliferation, Scientific Journal of Arts, Humanities and Social Sciences. 2022; 2(3):59.