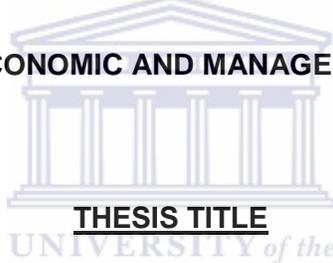


UNIVERSITY OF THE WESTERN CAPE



FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES



THESIS TITLE

**AFRICA'S CONTRIBUTION TO THE HUMANITARIAN APPROACH OF NUCLEAR
WEAPONS DISARMAMENT: THE PELINDABA TREATY**

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**A Mini-thesis submitted in fulfilment of the requirement for the Degree of
Masters of Administration in the Political Studies Department, Faculty of Economic and
Management Sciences, University of the Western Cape.**

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[Date] November 2015

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KEYWORDS

Nuclear Weapons

Disarmament

Humanitarian Approach

International Humanitarian Law

Nuclear Weapon Free Zones

Pelindaba Treaty



ABSTRACT

This thesis attempts to assess the role Africa has played to further the humanitarian approach to nuclear weapons disarmament. Particular focus is on the Pelindaba Treaty and whether it has been able to strengthen the call for disarmament based on the humanitarian approach.

The findings of this research are that the Pelindaba treaty did contribute indirectly to the strengthening of the humanitarian initiative of nuclear weapons disarmament because the Treaty serves as an important contribution towards the achievement of a world without nuclear weapons, which is the key objective of the humanitarian initiative of nuclear weapons disarmament. In addition, the Pelindaba Treaty has also contributed in strengthening the call for overall nuclear disarmament. This is the case as 53 states signed the treaty to rid the continent of nuclear weapons and any direct threats associated with those weapons. In so doing, it has contributed greatly to disarmament efforts. A nuclear weapons free zone across the continent is a powerful statement about the desire for a nuclear free world. It has provided African states with a foundation for engaging in the humanitarian initiative, as it led to some standardisation of statements/positions.

Also, since the inception of the humanitarian approach to disarmament, African states have contributed greatly to the initiative. In terms of numbers, in the three conferences on the humanitarian impact of nuclear weapons use that have taken place between 2013 and 2014 (in Oslo, Nayarit and Vienna), it was witnessed that the number of participating African states increased from 34 in the first meeting to 45 in the last meeting. This alone indicates the determination and commitment by these African states to the initiative.

Conclusively, this research determined that the Pelindaba Treaty and efforts of African states in general have contributed towards strengthening the call for not only the humanitarian initiative to nuclear weapons disarmament but also to disarmament overall.

DECLARATION

I declare that the thesis **Africa's Contribution to the Humanitarian Approach of Nuclear Weapons Disarmament: Pelindaba Treaty** is my own work and has not been submitted before for any degree or examination in any university. All the sources I have used or quoted have been indicated and acknowledged by complete references.



Peggy S Mhone

Date [November, 2015]

Signature

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In the course of writing this thesis, I received a lot of support from several people that should be acknowledged. Among them, Prof Joelen Pretorius- my supervisor. Not only did she introduce me to the field of IR and especially to the interesting subject of nuclear weapons, but also for her financial and moral support throughout my master's, for this I thank you. Thank you also to staff members at the Political Studies Department especially Nadia Jansen, Dr Cherrel Africa and Professor Laurence Piper, your support throughout my academic life at UWC means a lot to me.

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Finally I wish to express my deep gratitude to my family. The love, encouragement and prayers I got from my immediate and extended family throughout this endeavour is deeply appreciated. To my parents whom I dedicate this thesis to, my gratitude to you is beyond words, I just thank God for such wonderful parents.

LIST OF ABBREVIATIONS AND ACRONYMS

AEC:	Atomic Energy Commission
AU:	African Union
CD:	Conference on Disarmament
CSOs:	Civil Society Organizations
CTBT:	Comprehensive Test Ban Treaty
CTBTO:	Comprehensive Test Ban Treaty Organisation
ENDC:	Eighteen Nation Disarmament Committee
DIRCO:	Department of International Relations and Cooperation
IAEA:	International Atomic Energy Agency
ICAN:	International Campaign to Abolish Nuclear weapons
ICJ:	International Court of Justice
ICRC:	International Committee of the Red Cross
IHL:	International Humanitarian Law
ILPI:	International Law and Policy Institute
ISS:	Institute of Security Studies
LTBT:	Limited Test Ban Treaty
NAC:	New Agenda Coalition
NAM:	Non Aligned Movement

NGOs: Non-Governmental Organisations

NNWS: Non-Nuclear Weapon States

NPT: The treaty on the Non Proliferation of Nuclear Weapons

NWFZ: Nuclear Weapon Free Zones

NWS: Nuclear Weapon States

OAU: Organisation of African Unity

SA: South Africa

SAPP: Southern African Power Pool

UK: United Kingdom

UN: United Nations

UNGA: United Nations General Assembly

UNODA: United Nations Office for Disarmament Affairs

UNSC: United Nations Security Council

US: United States

USSR: Union of Soviet Socialist Republics

WMD: Weapons of Mass Destruction



Chapter One: Introduction

1.1 Introduction

On the international stage, nuclear weapons have often been regarded as a sign of status and power. This has resulted in some states making efforts to acquire nuclear weapons while those states that already have nuclear weapons are unwilling to give these weapons up despite the severe humanitarian consequences that are associated with their use. Nuclear weapons are the most dangerous, destructive and inhumane weapons that have ever been created. Not only do they have the potential of killing millions of people, but they also have devastating global consequences such as: severely negative environmental impacts including global climate change, widespread famine and heritably damaging radioactive effects years after their use (Rydell 2012).

Due to this, over the years, there has been an increase in the call for nuclear non-proliferation and disarmament by both state and non-state actors. Various agreements and treaties have been negotiated to combat the spread of nuclear weapons, such as the African Nuclear Weapon Free Zone Treaty: The Pelindaba Treaty which came in effect in 2009, making the African continent a Nuclear Weapons Free Zone (NWFZ). This thesis aims to determine to what extent the Pelindaba Treaty has contributed to the cause of nuclear disarmament around the globe. The focus of the research is on the humanitarian approach that has been adopted by some advocates of nuclear disarmament, who place the importance of securing human lives and livelihoods over that of status and power. As such, the thesis aims, in particular, to establish how African states have contributed to this initiative by creating a nuclear weapon free zone.

1.2 Background to the Study

Despite numerous disarmament efforts, 15375 nuclear weapons still exists to date (Ploughshares Fund, 2016) with no sign of those states with nuclear weapons ready to give them up any time soon. Borrie and Caughley (2013, p. 2) note that “there is considerable frustration among non-nuclear-weapon states at the conspicuous absence of progress towards nuclear disarmament in

multilateral forums, and at the difficulties they face in influencing the nuclear-weapon states to reduce reliance on these arms.” Over the years the focus has been on non-proliferation rather than total elimination of existing nuclear weapons. For as long as some states are still in possession of these weapons, other states will also feel the need to acquire similar weapons not only as a defence mechanism but also for the sake of acquiring power and status that is associated with the possession of nuclear weapons.

One of the steps towards disarmament has been that of creating NWFZs. This means that some states and regions have taken the initiative of giving up the option of having nuclear weapons, thus improving regional, national and international peace and security by lessening the risk of nuclear attack. This not only demonstrates that states can be secure without nuclear weapons, but it also shows that the entire world can be more secure if it was free of nuclear weapons.

The Pelindaba Treaty ensures the safety of the African continent from nuclear attack in that signatory states would use nuclear technology for civilian purposes only and not for military purposes. The Treaty also argues for the complete elimination of nuclear weapons. The Pelindaba Treaty and other NWFZ treaties, such as the Rarotonga Treaty (of the South Pacific region) have been an important and concrete contribution to the nuclear disarmament regime. This study will assess the contribution that Africa has made in terms of disarmament and evaluate if the African NWFZ Treaty has made any significant contribution to the strengthening of the humanitarian initiative of disarmament.

1.3 Research question and hypothesis

The purpose of this research is to assess Africa’s contribution to nuclear disarmament. Specifically, the research question focuses by way of a case study, on the contribution that African states made to the humanitarian initiative to nuclear disarmament by establishing a NWFZ through concluding the Pelindaba Treaty. Thus, the following research question serves to guide the investigation:

How has Africa contributed to nuclear disarmament? In particular, how has the Pelindaba Treaty contributed towards the so-called humanitarian approach to nuclear weapons disarmament?

As the above question aims to describe Africa's contribution, the following sub-questions are structured to help answer the research question:

What is Africa's position in the global nuclear order?

What is the history of Africa's nuclear weapons disarmament, especially the history of the Pelindaba Treaty?

What is the humanitarian approach to nuclear disarmament?

What is the African contribution to current nuclear disarmament discourse and praxis (especially the discourse and praxis evolving around the humanitarian approach)?

The hypothesis is that the Treaty has helped to directly strengthen the humanitarian initiative of nuclear disarmament discursively, drawing on language in the Treaty that is associated with International Humanitarian Law (IHL), as well as in practice by reversing nuclear deterrence logic (mutually assured deterrence) to that of mutually assured abstinence.

1.4 Research rationale /significance

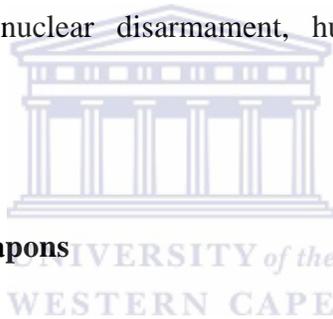
It is important to recognise the contribution made by Africa towards nuclear disarmament. Not only does it provide lessons for other regions to follow suit, but it also shows the need for urgency in the nuclear order. There is now a greater need to focus on the humanitarian consequences of nuclear weapons because it offers the potential to appeal to a wider set of audiences throughout society as it focuses on the real consequences of weapon detonation. This humanitarian initiative could change the mind sets of people as it appeals more to ethics than prestige. Therefore, it could be a successful contribution to the strengthening of the disarmament appeal where other initiatives have failed.

Nuclear weapons are not often regarded as a security concern for African states and yet the consequences of nuclear weapons use will have global humanitarian consequences and therefore

remains an important issue for all states, including African states (Laursen 2012). In addition, nuclear weapons proliferation and disarmament remain multilateral foreign policy and geopolitical issues on the international stage. Hence, African states cannot avoid taking a position in nuclear matters. The Pelindaba Treaty is a key instrument in African nuclear relations, which builds on African history in the global nuclear order. As such, an analysis of the Treaty can provide valuable insights into Africa's contribution to nuclear disarmament, especially how the African discourse on nuclear weapons relates to the humanitarian approach.

1.5 Literature Review

This section presents a literature review, describing the key concepts associated with the above research topic. Literature is reviewed under the following headings: nuclear weapons, international humanitarian law, nuclear disarmament, humanitarian approach and liberal institutionalism.



1.5.1 Nuclear weapons

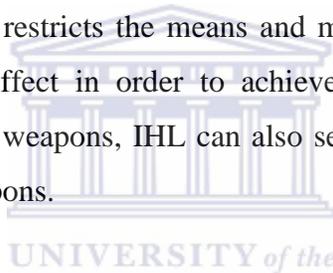
The United Nations Office for Disarmament Affairs (UNODA) (n.d) describes nuclear weapons as “the most dangerous weapons on earth. One nuclear weapon can destroy a whole city, potentially killing millions, and jeopardizing the natural environment and lives of future generations through its long-term catastrophic effects.” There are eight states that have nuclear weapons, namely the United States (US), Russia, the United Kingdom (UK), France, China, Pakistan, India and North Korea. Other countries may have nuclear weapons or are working towards acquiring them, most notably Israel. On the African continent, South Africa had nuclear weapons and has since disarmed, whereas Libya was also reported to have plans to develop the capacity of producing nuclear weapons, but never got as far as having nuclear weapons.

Nuclear weapons, also known as Weapons of Mass Destruction (WMD), have only been used twice in history (the bombing of Hiroshima and Nagasaki by the US) in 1945. Nevertheless, their effects are still felt today. The dangers from such weapons arise from their very existence and as

a result nuclear weapons introduce more insecurity than security to the international system, especially viewed from the side of human security. Furthermore, Hanson (2002, p. 1) argues that “nuclear weapons serve no useful purpose in military calculations; moreover, their continued retention invites the dangers of further proliferation and of accidental use. They are thus defined as obstacles to, rather than as facilitators of, international security.”

1.5.2 International Humanitarian Law

International Law also plays a crucial part in achieving the goal of nuclear disarmament. The International Committee of the Red Cross (ICRC) defines International Humanitarian Law (IHL), which is part of International Law, as “a set of rules which seek, for humanitarian reasons, to limit the effects of armed conflict. It protects persons who are not or are no longer participating in the hostilities and restricts the means and methods of warfare.” States need to adapt to and put this law into effect in order to achieve international peace and security. Moreover, with respect to nuclear weapons, IHL can also serve as a step towards disarmament because of the nature of these weapons.



The International Court of Justice (ICJ) in 1996 assessed the effects of a detonated nuclear weapon (such as the blast, radiation fall out, the heat) and evaluated that the effects were uncontrollable. Therefore when subjecting nuclear weapons to IHL, it was found to use nuclear weapons would have effects contrary to some of the rules of IHL (Granoff & Granoff 2011, p. 55). Nuclear weapons violate certain principles of IHL such as their inability to discriminate between targets and civilians, they cause unnecessary suffering and they lead to indescribable deaths (Thürer 2011, p. 112). Although the Court could not conclude that the use or threat of use of nuclear weapons would be lawful or unlawful in an extreme case of self-defence where the survival of a state is at stake, it advised states to pursue in good faith negotiations that would lead to disarmament (Granoff & Granoff 2011, p. 55).

1.5.3 Nuclear disarmament

One of the most important issues on the international security agenda is that of nuclear disarmament. There is need for states to commit to nuclear disarmament as part of efforts of strengthening international security, preventing nuclear weapons proliferation and also as a means of confronting nuclear terrorism (Podvig 2012, p. 1). This study will use the term nuclear disarmament as simply the act of complete nuclear weapons elimination as opposed to so-called arms control, which originated in the Cold War to limit nuclear weapons, but not abolish them (Sauer & Pretorius 2014). Disarmament is the best protection against dangers associated with nuclear weapons; yet, it has been an extremely difficult challenge to achieve. Conversely, Podvig (2012, p. 2) further notes that “the experience that has been gained in the nuclear disarmament process so far demonstrates that there are no fundamental technical or political reasons that would make progress towards comprehensive disarmament impossible.” This means that a future without nuclear weapons is possible.



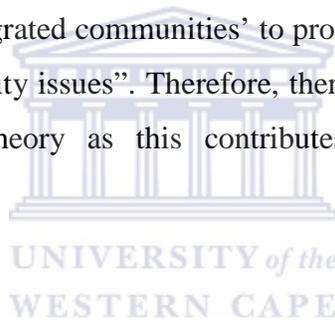
1.5.4 Humanitarian approach to nuclear disarmament

The humanitarian approach to disarmament is one of the initiatives that have been adopted as a way of tackling nuclear disarmament. This approach focuses on the humanitarian impact associated with the use of nuclear weapons. This approach is led by notions of protecting members of the public from particular and tenacious harm and suffering due to such weapons by looking at the actual consequences of a detonated nuclear weapon. “Humanitarian approaches to disarmament work from the logic of positive sum games, offering benefits for everyone, in contrast to the alternative zero sum game of competitive power politics in a world of nation state winners and losers” (Rydell 2012). Seeing nuclear weapons use through a humanitarian perspective, as was the case with landmines and cluster munitions, could also help governments to set aside their differences that obstruct them from making any meaningful and collective progress (Borrie & Caughley 2013, p. 2).

1.5.5 Liberal Institutionalism

Liberal institutionalism according to Devitt (2011) “argues that emphasis should be placed on global governance and international organizations as a way of explaining international relations. Institutionalism places emphasis on the role that common goals play in the international system and the ability of international organizations to get states to cooperate.” Nuclear disarmament is a common goal for most (if not all) states in efforts of achieving international peace and security. Disarmament efforts require input from not only from state actors, but also international institutions that ensures/monitors that states cooperate to achieve nuclear disarmament goals. Moreover, it is not only state actors that call for nuclear disarmament especially on humanitarian grounds, it’s also the efforts of international institutions that drive the disarmament agenda with the final goal of ensuring international peace, security and cooperation.

Furthermore, Devitt (2011) highlights that liberal institutionalism also argues “ that in order for there to be peace in international affairs states must cooperate together and in effect yield some of their sovereignty to create ‘integrated communities’ to promote economic growth and respond to regional and international security issues”. Therefore, there is need for commitment by states to the liberal institutionalism theory as this contributes towards securing regional and international security.



1.6 Research methodology and design

The research method used is the descriptive method which attempts to “describe systematically a situation, problem, phenomenon, service or programme, or provides information about, say, living condition of a community, or in this case it describes attitudes towards an issue” (Kumer 2011, p. 31). The data gathering method is qualitative in nature which consisted of reviewing various secondary sources of information such as books, journals and newspaper articles, that gave an overview of the current situation in terms of nuclear disarmament, as well as primary sources through conducting in-depth interviews with selected Non-Governmental Organisations (NGOs) officials, academics and a government representative (which will be discussed in the research plan).

The research investigation focused on a single case study. A case can typically be anything from a person, an entity such as a classroom, a country and in this case the Pelindaba Treaty. Rule and John (2011, p. 3) state that “a case study is a particular instance ..., a circumstance or problem that requires investigation”, thus offering a better understanding of the case since more details will be extracted. Case study research, Shields (n.d) also notes, “Is a research method which allows for an in-depth examination of events, phenomena, or other observations within a real-life context for purposes of investigation, theory development and testing, or simply as a tool for learning.” This research method is used to narrow down a very broad field of research into one easily researchable topic, in this case the contribution made by the Pelindaba Treaty to the humanitarian approach to nuclear disarmament.

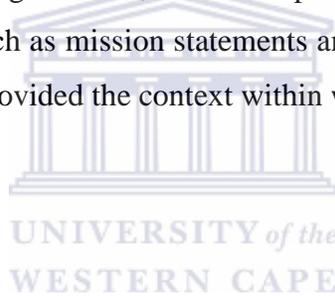
1.7 Data collection methods

Two forms of primary data gathering were used: In-depth interviews and data collected from speeches and official documents, e.g. the Pelindaba Treaty text. Document analysis was used as the third form of data gathering method. This secondary data collection method used literature on the topics of IHL, African law, policies and historical sources, such as books, journal articles and newspaper articles. The use of multiple methods and sources of data in research is used to triangulate data and corroborate the findings, which also provides more credibility for the findings so that the researcher may not be accused of relying on a single source or method or being biased.

In-depth interviews are a useful qualitative data collection technique that can be used for a variety of purposes. In-depth interviews according to Cook (2008, p. 423), “are interviews in which participants are encouraged and prompted to talk in depth about the topic under investigation without the researcher's use of predetermined, focused, short-answer questions.” Chilisa (2012, p. 205) identified three ways in which interview questions are structured, i.e. the unstructured interview that starts with a general question in the study area and interviewer asks questions in any order depending on the answers, the semi structured interview which focuses on the issue to be covered where the sequence is different for every participant, and finally the structured interview that has a schedule containing a number of pre-planned questions and participants are asked the same questions in the same order. For the purpose of this research, the researcher conducted a semi structured interview which has questions contained in an interview

guide that ensures that the researcher collects similar types of data from all informants. However, as the questions were open-ended, they provided room for asking follow-up questions outside the guideline (Cook 2008).

“Document analysis is a systematic procedure for reviewing or evaluating documents—both printed and electronic (computer-based and Internet-transmitted) material” (Bowen 2009). Document analysis is conducted in order to gain information and understanding and to develop empirical knowledge. These documents may be in the form of words (text) or pictures and may include adverts, meeting agendas, meeting minutes, attendance registers, letters, books, journals, diaries, maps, newspapers, etc. Document analysis simply means taking the raw data from these sources and then organising it into specific themes or categories in order to make sense of it. Document analysis is useful in qualitative case studies that require intensive in-depth understanding of a phenomenon, organisation, event or a program and in this case the Pelindaba Treaty. In this case documents such as mission statements and minutes from the meetings taken during the drafting of the Treaty provided the context within which the Treaty exists.



1.8 Research plan

The data gathered was from three different sources (data triangulation). Firstly the views of sources that specialise in IHL were collected. Secondly, data was collected by looking at the views of sources that specialise in nuclear weapons and disarmament. Finally, input from those that have a perspective on the African contribution (especially by the Pelindaba Treaty) was also collected.

Interviewees from Non-Governmental Organisations (NGOs) and the South African Department of International Relations and Cooperation (DIRCO) helped in giving insight to Africa's influence in this area. Two NGO representatives were interviewed. The reason why NGOs were selected as participants is because over the years they have played a key role in bringing various disarmament efforts to governments and also to the attention of the public. These NGOs ranged from those that deal with International Humanitarian Law (IHL) and those that advocate

disarmament. Four NGOs were approached: the Institute of Security Studies (ISS) that has done extensive research on the topic of Africa's role in disarmament and Mr Noel Stott was the key contact person there. The African Council of Churches that was at the fore in pushing for the signing of the Pelinda Treaty. The ICRC that has dealt with humanitarian issues for many years around the globe, emphasising on the enormous suffering that would result from the use of nuclear weapons and the contact person was Sarah Swart who is the Regional and Legal Advisor of the organization. Finally, the International Law and Policy Institute (ILPI) where the contact person was Mr Torbjorn Graff Hugo, the Project Leader in WMD Project for the institute who has extensive expertise in areas of good governance, peace and conflict, human rights, and international law. However, the researcher was only able to get information from two of the four: ILPI and ICRC. The DIRCO proved to be a good source of information as it is the government department responsible for South Africa's participation in nuclear matters. The researcher was able to interview the Deputy Director in Biological, Chemical, Missile and Arms Control, Mr Michiel Combrink.

1.9 Research ethics

Ethics has been defined by Remenyi *et al* (2011, p. 1) as “a branch of philosophy which addresses issues of human conduct related to a sense of what is right and what is wrong and as such it may be regarded as a society's code of moral conduct.” The researcher therefore, followed the necessary ethical procedures of conducting research, which involved the drafting of three documents of which two were issued out to research participants. The first document was a Research Participants Document which Remenyi *et al* (2011, p. 123) describe as having the purpose of explaining the role that the possible informant will play in the research. This document consisted of the description of the study, what it involved, why the participants have been asked to participate, information guaranteeing confidentiality and anonymity amongst other assurances. Also, a letter of informed consent was issued which participants signed after agreeing to the terms set out in the Research Participants Document. By signing, they indicated that they voluntarily agreed to take part in the research project. Finally a letter of consent to record the interview was also drafted assuring that the records, once the transcript has been created will be erased. However, as all communication with participants was done via email, this document was disregarded.

1.10 Limitations and challenges of the study

One major challenge of the study was the access to information. The researcher was unable to find information to establish a direct link that the drafting and signing of the Pelindaba Treaty was a result of humanitarian concerns that states party to the Treaty had. Another limitation pertaining to information was the geographic location of the researcher. The research topic focuses on Africa's contribution, but the researcher is geographically limited to South Africa. Although email correspondence was used to interview informants, the researcher was unable to secure any interviews with state officials outside South Africa. Also, as most organisations that deal with the humanitarian aspect of nuclear disarmament are not located in Cape Town or South Africa where the researcher is based, it was difficult to set up face-to-face interviews with these organisations. Even though the geographic limitation could have impacted the findings of the research as in-depth interviews were only conducted on representatives of a small segment of the African region-which might not be a full reflection of the African view. This, was however rectified, through data triangulation where various governments' views on the matter were extracted from a wide range of primary and secondary sources thus making the research arguments well evidenced.

1.11 Structure of thesis

The thesis consists of the following chapters:

Chapter one

Introduction: this chapter offers a background to the study as well as an outline of the research design and the methods used to carry out the research.

Chapter Two

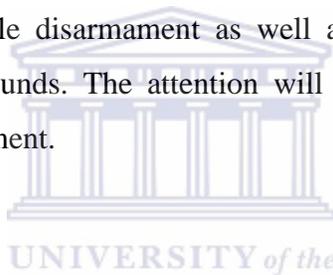
History and nature of nuclear weapons: emphasis in this chapter will be on the history of nuclear weapons, the measures that are in place at present to secure nuclear order, as well as the possible events that could lead to nuclear disorder.

Chapter Three

This chapter focuses on Africa and nuclear weapons. It offers a background analysis on the history Africa has had with nuclear weapons as well as the current position of the continent and the role it plays in matters relating to nuclear weapons. Also, the Pelindaba Treaty will be looked at as it was a measure undertaken by African states to secure the continent from nuclear threats.

Chapter Four

Nuclear weapons disarmament and the humanitarian approach: This chapter will outline all the efforts that are underway to tackle disarmament as well as an analysis of nuclear weapons disarmament on humanitarian grounds. The attention will be on efforts by African states at humanitarian approach to disarmament.



Chapter Five

This chapter provides the analysis and findings of the study: The focus will be on whether the Pelindaba Treaty contributed to strengthening of the humanitarian approach and a discussion of other outcomes.

Chapter Six

Conclusion and recommendations: this concluding chapter summarises the key findings of the research. It reviews the answers that were established for the stated research questions as well as provide recommendations based on the findings, and avenues for further study.

Chapter Two: History and Nature of Nuclear Weapons

2.1 Introduction

This chapter will focus on the historic background of nuclear weapons and global efforts for nuclear order to sketch the context in which the research question has significance. To start off, the chapter will give an overview of nuclear weapons. This will be followed by a look at the origins of nuclear weapons from the first discovery of nuclear fission to the first use of nuclear weapons. Thereafter, the chapter will highlight the period after the discovery of nuclear weapons where there was a spread of nuclear weapons, labelled “nuclear arms race.” That will be followed by a discussion of the various efforts that have been carried out to ensure global nuclear order by looking at a number of treaties that are in place to address the problem of nuclear weapons. Finally the chapter will look at the various factors that pose as elements that will lead to possible future nuclear disorder if nuclear weapons elimination is not achieved.

2.2 Nuclear Weapons

Nuclear weapons, also known as Weapons of Mass Destruction (WMD), are powerful explosive devices in the form of bombs or missiles that use nuclear energy to cause an explosion. They are some of the most devastating weapons of war ever created. One nuclear bomb has the potential of killing hundreds of thousands of people as well as wiping out an entire city (Nuclear and Conventional Weapons, n.d). Williams (2012, p. 335) highlights that “it is estimated that to destroy civilisation globally, fifty would be sufficient.” This illustrates the destructive nature of these nuclear weapons and the potential they have of completely wiping out the entire world. Nuclear weapons have only been used twice in warfare history, namely the US bombing of the Japanese cities of Hiroshima and Nagasaki in 1945 (UNODA n.d).

Nuclear weapons were an innovation of a few powerful states in a period where these states were seeking a superior position in global politics. At the height of the arms race, being in possession of nuclear weapons was seen as a statement of political and military superiority. Being in possession of nuclear weapons meant political power as those states with such weapons were respected and feared on the international stage. The original idea behind nuclear weapons was

that a state would be able to defend itself in an event of war, however during the Cold War the doctrine of nuclear deterrence was developed, and some argued that nuclear weapons are why those states has gone to war. As a result of their destructive nature, those nuclear weapons states rather resort to negotiations than going to war with each other for fear of mutual destruction (Coleman 2002). This doctrine is however questionable since India and Pakistan have gone to war (the Kargil War of 1999) despite being in possession of nuclear weapons.

As stated previously that nine states are believed to have nuclear weapons; this resulted in a tremendous increase in the number of nuclear weapons over the years since they were first used. The current nuclear arsenals that the US and Russia have in their possession are eight to forty times more lethal than those first used on Hiroshima and Nagasaki, and between them they possess about 95 percent of the total of all known nuclear weapons (Magnarella 2008, p. 507). Additionally, Swart (2013, p. 196) notes “37 states are implicated in the potential use of warheads, whether they be possessing states, host states, or states part of nuclear alliances.” This makes the “nuclear issue” an issue involving many states even those that do not directly possess nuclear weapons.

Even though nuclear weapons have not been used since Hiroshima and Nagasaki, over the years, there have been many incidents where state leaders such as US Presidents Johnson, Kennedy and Eisenhower as well as Soviet Premier Leonid Brezhnev had seriously considered using nuclear weapons (Magnarella 2008, p. 508). This shows that for as long as these weapons exist, there is a possibility of them being used on mankind with devastating outcomes.

2.3 The birth of nuclear weapons: 1940-1945

The years 1940-45 can be viewed as the fundamental years to the birth of nuclear weapons. These were the years during the Second World War and were characterised as the race for the atomic bomb. There was a lot of activity during this period in terms of the discovery of atomic fission to the manufacturing of the first nuclear bomb, its testing and finally the world’s first encounter of a nuclear weapon explosion in Hiroshima in 1945.

2.3.1 Discovery of atomic fission

There are a number of scientists that made the breakthrough in nuclear technology, among the first were Rudolf Peierls and Otto Frisch who discovered a way of using uranium 235 as a crucial component in the process of making nuclear weapons. Their discovery was motivated by the fear of Hitler invading Britain as well as fear of Hitler being the first to possess nuclear weapons through the efforts of scientists like themselves working for Germany. The reasons they made their discoveries known was due to the fact that they being Jews, had fled from Hitler and sought refuge in Britain at a time when Germany was advancing on Europe after defeating Poland. This meant that there was a possibility of Germany invading Britain, their only refuge at that time. They were driven by the fear of Hitler being armed with atomic bombs and they argued that the only defence would be if Britain was to be first in possession of such weapons which could then act as a deterrent (Arnold 2003, p. 112-115).

According to the Nuclear Weapons Archive (1997) the invention and discovery of the atomic bomb took the efforts of many scientists both in Europe and the US. It was a combination of discoveries of the neutron in the early 1920s, the chain reaction process-fission in the 1930s and that of uranium 235 and 238 in the late 1930s as necessary components in the process of making an atomic bomb. From the early 1940s, efforts were made to actually manufacturing the bomb.

There are different kinds of nuclear weapons but the most common ones are the fission and the fusion nuclear weapons. The fission, also known as the atomic bomb, is a type of nuclear weapon whose explosive yield is entirely from fission reactions as its energy derives from the nucleus of the atom, hence the name atomic bomb. On the other hand, the fusion weapon also known as the hydrogen bomb produces a great section of its energy in nuclear fusion reactions and it relies on fusion reactions between elements of hydrogen, hence the name hydrogen bomb (CTBO, n.d).

2.3.2 The manufacturing of the atomic bomb and the first testing

As stated earlier, what started off as a race to beat Nazi German scientists to the bomb led to the birth of one of the most destructive weapons ever created. Two European scientists; Albert Einstein and his Hungarian colleague Leo Szilard, wrote a letter in October of 1939 to convince the then President of the US Franklin Roosevelt of the need to join in the race of the atomic bomb. With Roosevelt's approval, the Manhattan project was launched. This project involved the recruitment of thousands of scientists, engineers and workers coming together to find ways of creating the first nuclear bomb which took a period of over four years with the help of the governments of Canada and Britain (Nobelprize.org. n.d).

During this four year period, a lot of research was conducted on the use of uranium and plutonium components as necessary for manufacturing a bomb as well as the use of uranium as a source of energy, the actual process development, engineering design, procurement of materials and the selection of a location for experimental plants. The outcome of this enormous work, with aid from the British teams, was that adequate Plutonium (Pu-239) and highly enriched Uranium (U-235) was produced by mid-1945 (Nobelprize.org. n.d; World Nuclear Association 2014a). The uranium mostly originated from Africa in the Belgian Congo now called the Democratic Republic of the Congo (Dasnois 2012; World Nuclear Association 2014a). After this, the first ever nuclear weapons were manufactured during that same period by mid-1945.

The history of nuclear weapons testing started in 1945 when on July 16th the US exploded the first nuclear bomb in Alamogordo, New Mexico under the code name Trinity. The powerful outcome of this first test surprised even those that had contributed to the manufacture of the weapon as the effects of the weapon exceeded their expectations. After this first testing, other states also carried out similar tests with the Soviet Union on August 29, 1949; then Britain on October 3, 1952; followed by France on December 3, 1960 and China on October 16, 1964. Thousands of tests have been conducted worldwide since then (Moorthy 2006, p. 01).

2.3.3 Events leading to the first use of nuclear weapons.

Even though the original plan was to beat Hitler to the atomic bomb and also to use the bomb if there was a possible attack by Germany, it turned out that by the time the testing of the first nuclear weapon took place, Germany had already surrendered. This therefore meant that the possible threat of a German atomic bomb attack no longer existed. However, in other regions of

the Pacific; the war was still on going (Nobelprize.org. n.d). On December 8, 1941 the US declared war on Japan following the bombing of Pearl Harbor by a Japanese Naval Task Force on December 7

, 1941. Three years into the war on July 26, 1945 the Potsdam declaration was made where the US, Britain and China gave Japan the ultimatum to surrender or face complete and utter destruction. Following Japan's initial rejection to surrender, US president Truman ordered the newly manufactured nuclear weapons to be used on Japanese cities (Bombing of Hiroshima and Nagasaki 2009; Nobelprize.org. n.d).

On August 6, 1945 the first ever nuclear weapon called "Little Boy" was detonated on the city of Hiroshima and three days later on August 9 another weapon called "fat man" was detonated on the Japanese city of Nagasaki (Borrie & Caughley 2014; Nobelprize.org. n.d). "The accounts of what those two bombs did to the cities and their inhabitants are horrifying. About 100,000 people in Hiroshima suffered torturous deaths from severe burns. Their skin peeled away from their flesh; their eyes were melted, leaving empty sockets. About 60,000 died from lethal doses of radiation. Both cities were largely contaminated and destroyed" (Magnarella 2008, p. 507). Five days later on August 15, 1945 Japan surrendered, resulting in the end of the Second World War. Five years after the detonation of these two nuclear weapons, it is reported that as many as 340,000 people or rather 54 percent of the original inhabitants of Hiroshima and Nagasaki, had died from the two detonations (Nobelprize.org: n.d).

In the years that followed, the US, Union of Soviet Socialist Republics (USSR), Britain and other countries embarked on efforts to develop, manufacture, test and modernise their nuclear weapons, a period referred to, by some, as the nuclear age.

2.4 The spread of nuclear weapons: 1945-1968 (The nuclear age)

As from 1945 onwards, the US fear of its vulnerability to a Soviet missile attack increased; hence the fast pace of technological breakthroughs in nuclear weapons technology. US nuclear weapons acquisitions were mainly triggered by the fear of others getting to them before they did.

The fear was that if American scientists were able to create a certain weapon then so could the Soviet Union and they were not wrong (Jameson 2013). Thus nuclear arms race ensued between the US and the USSR.

2.4.1 Nuclear arms race

During the nuclear arms race between the US and USSR strategists were deployed to find ways and means of developing more efficient weapons than those first used on Japan. The race consisted of the US trying to monopolise on nuclear technology and to find means of preventing a possible attack by the Soviet Union. On the other hand, the states in the Soviet Union were busy trying to find ways to match and exceed the nuclear technology capabilities of the US (Rowen 2004, p. 1).



Figure 1: Estimated worldwide nuclear warheads, 2013

COUNTRY	DEPLOYED WARHEADS ^a	STOCKPILED WARHEADS	RETIRED WARHEADS	TOTAL INVENTORY
United States	2,150 ^b	4,650	~3,000	~7,700
Russia	1,800	4,480	~4,000	~8,500
United Kingdom	160 ^c	225	–	225
France	290 ^d	300	–	300
China	–	250	few	250
India	–	110	–	110
Pakistan	–	120	–	120
Israel	–	80	–	80
North Korea	–	n/a	–	n/a
TOTAL	~4,400	~10,200	~7,000	~17,200

a Deployed warheads are defined as warheads that are on missiles or at bases with operational launchers.

b This includes nearly 200 non-strategic bombs deployed in Europe.

c Of these 160 "operationally available" warheads, 48 are normally deployed on one nuclear submarine at sea.

d Of these, one or two submarines with about 80 warheads are normally deployed at sea.

The years 1945-49 were regarded as the first few years of the atomic age. Figure 1 (Kristensen & Norris 2013) indicates the total inventory of the nine Nuclear Weapons States (NWS) as of 2013, to date, 15375 nuclear weapons exist (Ploughshares Fund, 2016). The US during this period

proved to be supreme in nuclear weapons technology as they were the first and only state to have manufactured, tested and used a nuclear weapon. After the end of the Second World War the US went on to manufacture the hydrogen bomb which was much more superior and more destructive than the atomic bombs that were used on Hiroshima and Nagasaki (Atomic archives n.d). According to the United Nations (n.d.), the US conducted 1,032 nuclear weapons tests between 1945 and 1992 and it is believed that the US has produced more than 66 500 warheads since 1945 but this number has reduced drastically after having to disassemble almost 59 000 of those weapons (Kristensen & Norris 2013, p. 77).

The Soviet Union can credit its early nuclear weapons knowledge to information gathered by its spies who worked on the Manhattan project. After the end of Second World War, the Soviet Union started working on their nuclear weapons program. They began constructing their own nuclear bomb which closely resembled the US's "Fat Man" as they had used detailed design descriptions from its spies who were working on the US project. On August, 29, 1949 the Soviets Union conducted its first atomic bomb test in Kazakhstan to the shock of many around the world (Atomic archives n.d). In the years that followed, the Soviet Union went on to manufacture an estimated 55 000 nuclear weapons. However, as of the year 2013, it was recorded to be in possession of approximately 8 500 warheads (Kristensen & Norris 2013, p. 79) and carried out 715 tests between 1949 and 1990 (United Nation n.d). From the years 1978 to 2001, the Soviet Union surpassed the US in the number of warheads in their possession to a point that in 1986 it is estimated that the Soviet Union had about 40 159 nuclear weapons stockpile while the US had 23 317 weapons (Kristensen & Norris 2013, p. 78).

Britain, even though not the first state to produce nuclear weapons, was the first to explore the development of nuclear weapons. It was through the work by scientists Otto Frisch and Rudolf Peierls in February 1940, who at that time lived in Britain that showed the feasibility of fission weapons as well as British scientists being among some of the major contributors of the Manhattan project (Arnold 2003, p. 112). Even though Britain helped in the production of the first ever nuclear weapon, Britain did not independently possess a nuclear weapon. Therefore, in early 1947, plans were underway for the development of a British nuclear weapon. However, it took them almost five years to produce a nuclear weapon and they detonated their first ever atomic bomb on October 13, 1952 on the Monte Bello Island west coast of Australia and their

hydrogen bomb was tested five years later November 1957 on Christmas Island on the west coast of the Pacific (Atomic Archives, n.d). It is estimated that since its first testing, Britain has produced approximately 1 250 warheads but as of 2013 it had reduced its stockpile to an estimated 225 nuclear weapons (Kristensen & Norris 2013, p. 79) and between 1952 and 1991 it carried out 45 nuclear weapons tests (United Nations n.d).

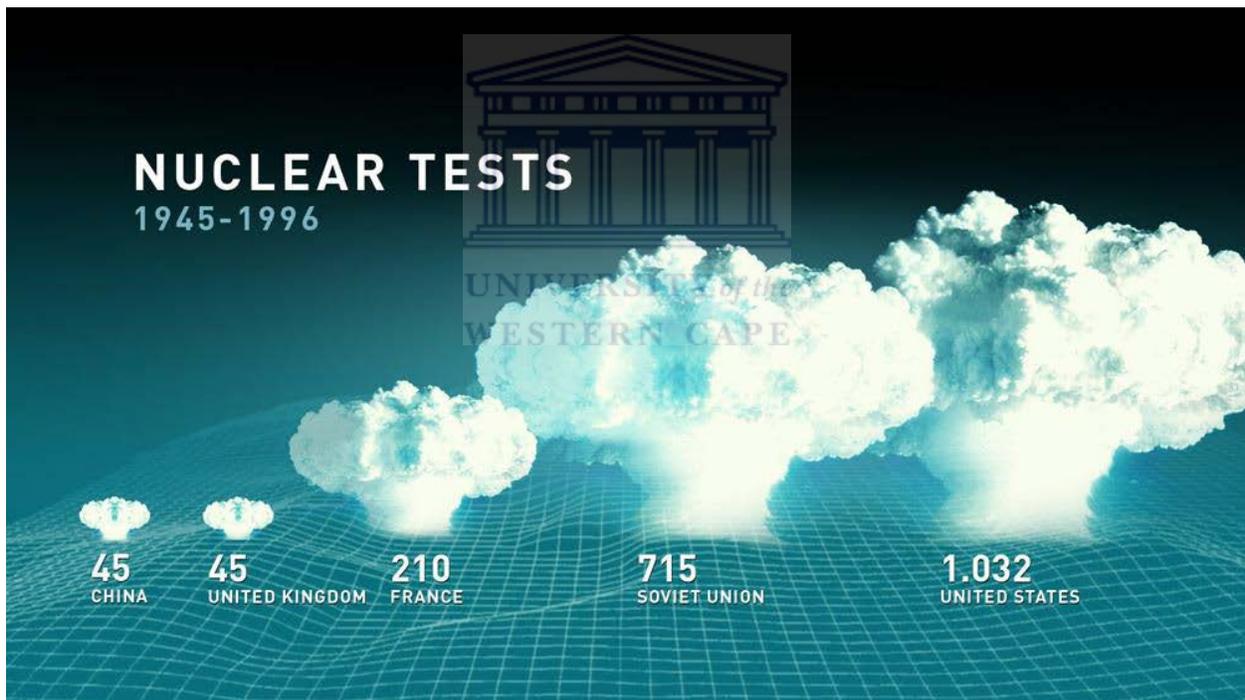
France embarked on its nuclear weapons program shortly after the Second World War. However, due to domestic political factors, France was only able to carry out its first test of a plutonium fuelled nuclear weapon device on February 13, 1960 in the African region of Algeria (Atomic Archive, n.d). The United Nations (n.d) notes that “France carried out 210 tests between 1960 and 1996” and as of 2013, France is estimated to have 300 nuclear warheads in its stockpile, a decrease in number from the approximate 1 260 warheads it is believed to have produced since its first testing (Kristensen & Norris 2013, p. 79). Even though France reduced the number of nuclear weapons in its possession, it still continues to modernise its current nuclear weapons (just like other NWS) and still remains the third most powerful NWS in terms of its nuclear arsenal (Atomic Archive n.d).

The Atomic Archive (n.d) asserts that China began its nuclear weapons program in the late 1950s with the help of the Soviet Union. A secret agreement was signed between the two states whereby China provided the Soviet Union with uranium ore, a key component in the manufacture of nuclear weapons and in return, the Soviet Union would assist China with the development of its nuclear technology. On October 16, 1964 China conducted its first nuclear weapons test involving an atomic bomb and in June 1967 it conducted a test of its first hydrogen bomb. Even though the exact number of Chinese warheads is not known, it is estimated that as of 2013, China had about 250 warheads and since its first testing in 1964 it had manufactured about 610 nuclear warheads (Kristensen & Norris 2013, p. 79).

Other countries: Israel, India, Pakistan, North Korea and South Africa also joined in the race for nuclear weapons. However, South Africa dismantled its nuclear weapons by 1991 when it joined the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). India and Pakistan started production of their nuclear weapons around the same time, Kristensen & Norris (2013, p. 80) note that “the two countries are in an arms race to deploy new weapon types and are believed to be increasing their stockpiles.” It is believed that Israel started manufacturing its nuclear

weapons in the 1950s even though the official Israeli position on the topic has been neither to confirm nor deny these allegations. Israel is estimated to be in possession of about 80 nuclear warheads which is at par with India and Pakistan (Borger 2014). North Korea has an active nuclear weapons program and is in possession of an estimated 4-8 nuclear warheads and has tested a number of times in the last decade after its withdrawal from the NPT in 2003 (Kim 2013). Below figure 2 (CTBTO Preparatory Commission, n.d) illustrates the sizes of nuclear tests as of 1996 that were conducted by the permanent members of the UN Security Council who all states with nuclear weapons.

Figure 2: Nuclear Explosions



2.4.2 Advancements in nuclear weapons technology

One of the most serious implications to nuclear weapons disarmament is that of nuclear weapons modernising programs that are currently underway by states with nuclear weapons to improve the nuclear arsenals and related technologies that they have in their possession (Acheson 2012;

Kristensen & Norris 2013). From the 1940s to the 1960s there was rapid technological advancement followed by mainly additional improvements in most fields. Lodgaard (2011, p. 47) notes:

“During the first nuclear era, nuclear weapons were tailored to all sorts of delivery systems – to land-, air- and sea-based missiles of various ranges, to land- and carrier-based aircraft, and to artillery systems. The Soviet Union had nuclear land-mines as well. Nuclear weapons substituted for conventional munitions to such an extent that by the 1960s and 1970s, important US and Soviet force categories had little capacity for conventional warfare.”

From the 1980s onwards efforts were placed on developments in missile accuracy and defence and also in computer simulation and non-explosive testing. “By the end of the Cold War in the early 1990s, the United States possessed 116 different nuclear delivery systems, including 11 types of ballistic missile, 11 types of strategic bomber, and 3 types of ballistic missile submarines” (Jameson, 2013, p. 42). This clearly shows that the years from the 1940s to the 1990s (more than half a century after the initial discovery of nuclear weapons) states with nuclear weapons were determined to increase the capabilities of their arsenals at all levels and cost.

Billions have been spent by the states with nuclear weapons in efforts of advancing the “few” nuclear weapons that they possess. The delivery system of these modern warheads could mean that at a touch of a finger and within minutes, they can reach their target and cause catastrophic damage. According to William (2012, p. 335), “approximately 40 per cent of those 22,000 warheads...are on some form of very rapid alert. It is estimated that the average length of time between a warning and a decision about whether to use a nuclear bomb is between four and eight minutes.” By spending billions in modernising their nuclear weapons and their delivery systems, these NWS are actually investing in the future of nuclear weapons rather than investing in disarmament (Acheson 2012, p. 88).

2.5 Preventing the spread of nuclear weapons: 1969- Present

The first efforts towards the prevention of the spread of nuclear weapons happened immediately after the Second World War with the formation of the United Nations (UN). During the first

United Nations General Assembly (UNGA), a commission called the United Nations Atomic Energy Commission (AEC) was created to oversee among others the elimination of all WMD including the atomic bomb. The commission has been credited for some reduction in nuclear weapons possessed by NWS. However, the commission has not been able to achieve the goal of total elimination of all WMD (Adeniji 2002, p. 11). The best hope for nuclear weapons elimination lies with treaties that prevent the spread and the use of nuclear weapons as well as nuclear disarmament. Even though the exact number of nuclear weapons is not known, it is estimated that at present there are more than 10000 nuclear warheads that are being possessed by NWS reflecting a decrease in numbers from the 125 000 that were calculated to have been built since 1945 (Kristensen & Norris 2013, p. 75). This decrease can be attributed to the various treaties that have been established as a means of stopping the spread as well as the eventual total elimination of nuclear weapons. Below are some of the treaties that are in effect in the prevention of the spread and elimination of nuclear weapons.

2.5.1 Limited Test Ban Treaty

The very first major nuclear arms control agreement was the Limited Test Ban Treaty (LTBT) that was signed by US, UK and Soviet Union on August 5, 1963 and entered into force on October 10, 1963. Also referred to as the Partial Test Ban Treaty (PTBT) or the Nuclear Test Ban Treaty (NTBT), the Treaty basically bans all kinds of nuclear testing apart from those conducted underground. Article 1 of the Treaty prohibits signatory states from conducting military and/or peaceful nuclear test explosions in any place under its jurisdiction and control and further bans the testing of nuclear weapons in the atmosphere, in outer space and under water. According to the CTBTO (n.d.), the Treaty was a result of domestic and international pressure the signatories faced due to the implications of nuclear weapons testing for the environment, health and overall global security. The main concern came to light when the US tested one of their nuclear weapons in the atmosphere. The result was that radioactive materials were released in the environment causing major health and environmental damage.

Even though the Treaty managed to address important environmental issues as a result of nuclear weapons testing, it failed to address the issue of disarmament and/or proliferation. Therefore, the

world witnessed an increase in nuclear proliferation and testing (underground) years after the enforcement of the LTBT. It is also important to note that some countries that were not signatories to the Treaty such as France and China went on to conduct atmospheric nuclear weapons test as they were not bound by the Treaty thereby rendering the Treaty weak.

2.5.2 Treaty on the Non-Proliferation of Nuclear Weapons (NPT)

With time, many people including world leaders realised the dangers of the spread of nuclear weapons. The Irish government in 1959 at the 14th session of the UNGA was first to suggest the need for negotiations for a treaty to counter the increasing proliferation of nuclear weapons (Adeniji 2002, p. 13). As a result, during the 1960s, negotiations were initiated to try and limit the spread of these weapons. Through the UN, government representatives pushed for a non-proliferation agreement that resulted in the NPT which was open for signature in 1968. The current UN secretary general Ban Ki Moon reaffirmed the NPT's importance as he was quoted saying "the Nuclear Non-Proliferation Treaty is one of the most important multilateral accords in history. Though not perfect, it is the cornerstone of the world's nuclear non-proliferation regime" (Swart 2013, p. 199). The Treaty has been ratified by all states with nuclear weapons except India, Pakistan, and Israel and it entered into force on the 5th of March 1970 (Magnarella 2008, p. 509). From 193 Members of the UN, 188 States are the parties of the NPT (the five outside the Treaty are India, Pakistan, Israel, North Korea, and South Sudan).

The Treaty comprises legally binding non-proliferation commitments and is the basis for international cooperation to stop the spread of nuclear weapons. The Treaty is reinforced by three "pillars": (i) nuclear non-proliferation- where Non-Nuclear Weapon States (NNWS) will not seek to acquire nuclear weapons; (ii) disarmament- for NWS; and (iii) the peaceful use of nuclear energy for all states (Magnarella 2008, p. 509).

The Treaty is also regarded as the legal and political foundation of the nuclear non-proliferation regime. The NPT has many important provisions such as article 1 that states that NWS that signed the treaty will not transfer nuclear weapons or any technology relating to nuclear weapons to NNWS; also they are prohibited from encouraging or assisting NNWS in manufacturing nuclear weapons. Article 2 directed at NNWS states that all parties to the treaty are prohibited

from acquiring, manufacturing and controlling nuclear weapons and other nuclear explosive devices. Article 3 states that NNWS will follow safeguard measures monitored by the International Atomic Energy Agency (IAEA) to ensure that they are meeting the obligations of the treaty and that the nuclear technology they might have is only being used for civilian purposes. Article 6 states “Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a Treaty on general and complete disarmament under strict and effective international control.” Article 7 states “nothing in this Treaty affects the right of any group of States to conclude regional treaties in order to assure the total absence of nuclear weapons in their respective territories.”

The basis of nuclear tension that is happening around the world rotates around those states with nuclear weapons that want to assert their nuclear weapons monopoly on one hand and on the other hand those states that are challenging this monopoly. There is now an increase in forces around the world that are challenging this “right” of a select few states to have nuclear domination and these forces are now refusing to be subjected to this reality. The Middle East in particular provides a good example of this nuclear monopoly and how it puts at risk the welfare of people in that region and world peace (Makhoul 2010, p. 83).

The NPT has a number of shortfalls. The first is that the treaty does not make provisions for prohibiting NWS from attacking NNWS (so called negative assurances) which is regarded as a security threat by these NNWS. Another shortcoming is that the Treaty failed to take into consideration states that can be involved in proliferation (who are not signatories to the Treaty) such as North Korea which withdrew from the treaty in 2003 and went on to test a nuclear device in 2006, such states also pose a threat to international peace and security yet the NPT did not make provisions for such cases (Magnarella 2008).

The most notable shortfall has been the reluctance of NWS to engage in disarmament. As a matter of fact, some of these NWS such as US and Russia have even gone a step further to enhance their nuclear weapons (Magnarella 2008, p. 509-511). Also the NPT has been criticised as just being an agreement by NNWS to not acquire nuclear weapons which they abide by whereas the NWS has not lived to the end of their bargain in regards to disarmament. This has caused much concern by NNWS as they feel that their counterparts are not committed to the

Treaty (Keks 2011, p. 25-26). The withdrawal from the Treaty by North Korea was a signal of this dissatisfaction, thus weakening the Treaty.

Another shortfall is that the IAEA's verification ability remains in question as it lacks sufficient funding and manpower to fully investigate compliance of the non-proliferation agreement by NNWS. This weakness leads to lack of trust and confidence in the Treaty (Keks 2011, p. 26).

As the NPT made no provisions to prohibit NWS from attacking NNWS using nuclear weapons, these states without nuclear weapons have taken it upon themselves to secure their states and regions from nuclear weapons attack through the creation of nuclear weapons free zones as is the obligation in article 7 of the NPT.

2.5.3 Nuclear Weapons Free Zones

The concept of Nuclear Weapons Free Zone (NWFZ) came before that of the NPT and was in the beginning established only in uninhabited areas (Antarctica and outer space). Thereafter, each NWFZ treaty that followed has progressively developed the concept to address various regional concerns as well as developing awareness of possible threats and the need to eliminate them (Tabassi 2009, p. 31).

The creation of NWFZ by states, Tabassi (2009, p. 31) argues, is consistent with article 1 of the UN Charter that provides for states to take necessary collective measures to prevent and remove any threats to peace. Signatory states aim to achieve this by removing nuclear weapons in their zones and preventing others from using these weapons on them thereby securing international peace and security in the long run.

A NWFZ according to Magnarella (2008, p. 511) "is a populated region whose member states have formally agreed by a multilateral treaty to prohibit the acquisition, stockpiling, deployment, and testing of nuclear weapons within their territories, airspace, and waters." A large number of states that did not possess nuclear weapons joined forces and created NWFZs as a response to the shortcomings of the NPT or can also be viewed as a complement to the NPT by some. In doing that, "they emphatically rejected nuclear weapons on their soil, in their territorial waters, and in their air space. In addition, they ask nuclear weapon states to solemnly promise not to use

nuclear weapons against zone members and to do nothing to promote nuclear weapons in their zones”, Magnarella (2008) notes.

The formation of NWFZs has contributed to the enhancement in security of member states of such zones, to the prevention of the proliferation of nuclear weapons and can also contribute to the objectives of overall and complete disarmament (Magnarella 2008; Tabassi 2009). This has also resulted in confidence building among states in NWFZs due to the joint promises made by these states not to develop or allow any form of nuclear weapons on their territories. Each treaty contains one or more protocols that must be ratified by NWS where they agree “not to use or threaten to use nuclear weapons against NWFZ members, not to test or assist in the testing of nuclear weapons within an NWFZ, and not to contribute to any act that would constitute a violation of the NWFZ treaty” (Magnarella 2008, p. 511-12)

The first NWFZs to ever be established were the Antarctic (1959) and the Outer Spaces Zones. These two NWFZs are in uninhabited areas as a result nuclear weapons tests were conducted in these areas. However, this still posed as threats to the environment even though the areas were desolate but the main aim for creating these two NWFZs was to prevent the militarisation of these designated areas (Tabassi 2009, p. 31).

At present, there are five NWFZ in inhabited areas. The first one was the Latin America and Caribbean NWFZ called the Treaty of Tlatelolco which was opened for signature in February of 1967, which was 18 months before the NPT (Adeniji 2002, p. ix; Magnarella 2008, p. 518). The Treaty entered into force in 1969. This was followed by the South Pacific NWFZ referred to as the Treaty of Rarotonga that entered into force in 1989. The Southeast Asia NWFZ came next and it entered into force in 1997 and it was called the Treaty of Bangkok. Then came the African NWFZ which was referred to as the Pelindaba Treaty and it opened for signature in 1996 and came into force in 2009. Finally, the Central Asian NWFZ was opened for signature in 2006 (Magnarella 2008, p. 513-518).

Magnarella (2008, p. 518) further notes that: “It is ironic that the Northern Hemisphere, which contains those permanent members of the UNSC, whose responsibility it is to ensure international peace, contains all of today’s nuclear weapons. The large arsenals of these Security Council permanent members endanger our planet the most.” At present, all the NWFZs are

allocated in the southern hemisphere and the hope is that the Northern Hemisphere can learn and follow the example provided by their southern partners by making their region a NWFZ and thereby achieving the goal of a nuclear weapons free world (Magnarella 2008, p. 519).

NWFZs also serve as deterrence from external pressure brought by NWS who might want to station nuclear weapons or parts of its support systems in parts of that region. Also the establishment of a NWFZ maybe the utmost important and effective political and legal instrument a state can use to contribute towards nuclear disarmament (Tabassi 2009, p. 33). Another advantage of NWFZs is that they serve as a first step towards integrating those states that are not party to the NPT into the Treaty as has been demonstrated by the Treaties of Tlatelolco and Pelindaba (Tabassi 2009, p. 57)

2.5.4 Comprehensive Nuclear Test-Ban Treaty (CTBT)

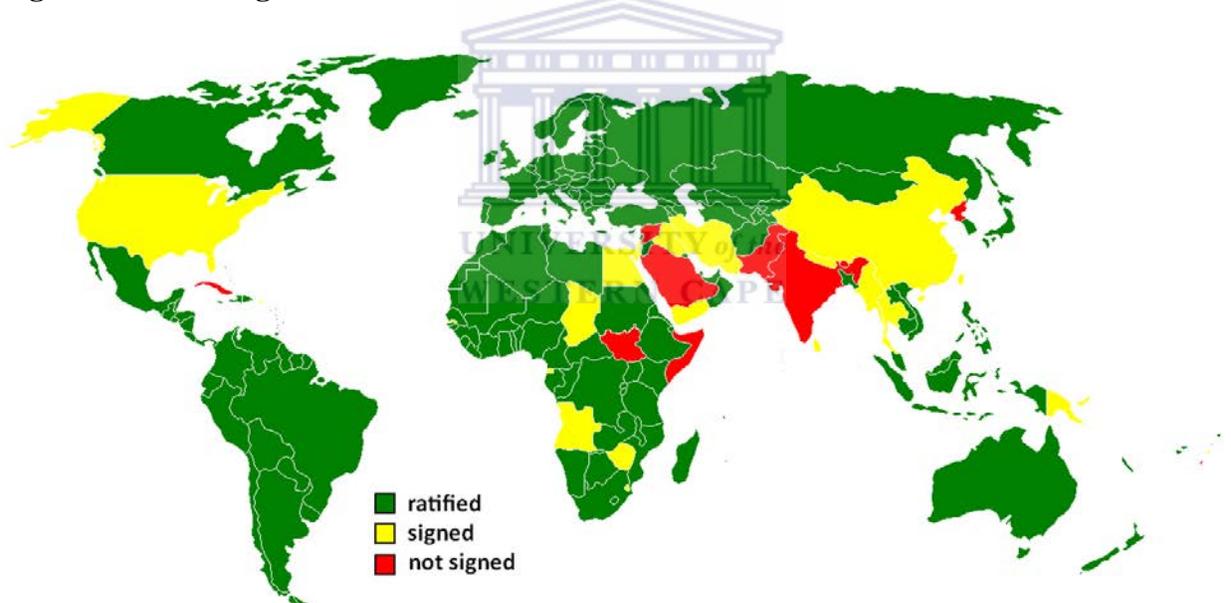
The CTBT goes beyond the LTBT as it completely bans all forms of nuclear testing (military and civilian) on earth be it surface, atmospheric, underground or underwater. Although the primary goal of the Treaty was to ban nuclear weapons testing, there were also great expectations that it could also contribute towards nuclear weapon disarmament and non-proliferation. One of its main aims was to block the development of nuclear weapons as the treaty makes it nearly impossible for NNWS to develop nuclear weapons as well as making it almost impossible for NWS to develop or advance their existing nuclear weapons without testing. Swart (2013, p. 198) argues that “the CTBT makes an important contribution in that it makes it difficult for countries to develop nuclear weapons for the first time or, for countries that already have them, to make more powerful bombs”. The US and other nuclear weapons states whose ratifications are required in order for the Treaty to come to effect are yet to do so.

The Treaty was regarded as a breakthrough in terms of arms control. It was the first time the major powers made some progress in test banning at a period where they were fighting for military and geopolitical dominance. To date, the Treaty has 183 signatories and all but three African states (South Sudan, Somalia and Mauritius) have signed the Treaty, but nine African states have not ratified the treaty with Angola being the most recent state to have ratified the treaty on March 20, 2015 (CTBTO n.d). See Figure 3 below (CTBTO Preparatory Commission,

n.d) makes a clear illustration of world map with states that are signatories, those not signed and those that have ratified the Treaty, (note that Angola now falls in the green bracket).

However, as this treaty seems core to the limitation of nuclear weapons, it still remains effectively powerless as it is still to enter into force. The treaty requires 44 specific states to ratify it to come into force and as of 2010 China, North Korea, Egypt, India, Indonesia, Iran, Israel, Pakistan and the USA had not yet signed and/or ratified the Treaty. North Korea, India and Pakistan have yet to sign the CTBT and they actually went on to conduct nuclear tests after the treaty was negotiated in 1996 with India and Pakistan testing in 1998 and North Korea in 2006, 2009 and in 2013 (Swart 2013; United Nations n.d).

Figure 3: CTBT Signatures and Ratifications



2.6 Nuclear disorder

In the last decade, there has been growing concern over the possible spread of nuclear weapons with North Korea having nuclear weapons and Iran with its uranium enrichment program and more states seeking to acquire nuclear power plants for civilian purposes. Nuclear armed states that are not bound by NPT rules and norms such as India, Pakistan, Israel and North Korea are

most likely to cause nuclear disorder as exemplified by North Korea. The growing need for alternative means to the production of electricity has led to states pursuing nuclear energy, which uses enriched uranium and plutonium. The latter is also used for the manufacturing of nuclear weapons. Therefore, the line between the fuel for nuclear power reactors for peaceful purposes or military purposes can be misleading due to the dual-use nature of the materials (Sagan 2011; Perkovich 2008). All these cases have been identified as possible avenues that could lead to future nuclear disorder. The problem of non-compliance with treaties and laws that have been put in place to limit and eliminate the threat posed by nuclear weapons is definitely a threat to international peace and security as it renders all disarmament measures as effortless.

Creation of the Israeli and Indian exceptions is also another concern that could bring disorder in the international community. The West and some of their allies have allowed or turned a blind eye to Israel and India acquiring nuclear weapons while they reprimand and sanction other states that have made similar efforts such as Iran and North Korea. This has contributed to resentments because of the obvious double standards (Walker 2014a). All disarmament and non-proliferation measures need to be applied equally to all parties without exceptions as this can create tension which could result in future nuclear disorder.

Another of the threats to nuclear order is the failure of the nine NWS to take necessary action towards the destruction of all their nuclear weapons (Perkovich 2008, p. 10). The failure by NWS to eliminate their nuclear arsenal is cause for concern which could be reason enough for some NNWS to argue for possible acquisition as a result. For as long as nuclear weapons are in existence and in possession by some states, other states will also seek to acquire them for the same reasons or benefits that they offer. Therefore there is growing need for those NWS to comply with nuclear disarmament measures that are in place to oversee the eventual complete elimination of nuclear weapons.

Ways of future nuclear proliferation also poses a threat to nuclear order as there is a chance that some state or non-state actors will in the future be able to get their hands on nuclear weapons or illegally be able to manufacture nuclear weapons. It is a serious cause for concern especially if those weapons were to be in the hands of terrorist groups. Secret violations of the IAEA safeguards by some states (North Korea, Iraq, Iran, Libya, and Syria), withdrawal from the NPT and acquisition of nuclear weapons as demonstrated by North Korea also pose as threats to

nuclear order (Walker 2014a). It is argued that complete elimination of nuclear weapons will reduce these challenges and risks to nuclear disorder.

2.7 Summary

Even though the NPT provides a sound framework for nuclear non-proliferation and disarmament, and even though the number of nuclear weapons has decreased, a number of states have embarked on advancing the nuclear weapons in their possession thereby making those nuclear arsenals more lethal than they initially were in their inception. Moreover, due to the indiscriminate nature of these weapons whether small all large, it means that the existence of nuclear weapons pose a threat to humanity. Also, there is a risk that states which have embarked on the acquisition of nuclear programs for peaceful purposes could pursue military goals because the technology is dual-use. With that in mind, it remains an urgent matter for the international community to address the problem of nuclear weapons that poses a threat to international, regional and national security. Africa's role in this matter will be discussed in the following chapter.

Chapter Three: Africa and nuclear weapons

3.1 Introduction

This chapter aims to further describe the context in which the research question (Africa's contribution through the Pelindaba Treaty to nuclear disarmament using the humanitarian approach) has significance. Not only was the continent used as a testing ground for nuclear weapons, it also offers the best example of the possibility of nuclear weapons disarmament. Moreover, the continent has the only state to have ever manufactured and voluntarily destroyed its nuclear weapons. This chapter is, therefore, dedicated to the discussion of efforts that have been undertaken by African states collectively and individually to contribute to nuclear weapons disarmament. To begin, the chapter will look at the history of Africa in terms of its first involvement with nuclear weapons discourse mainly that of a "testing ground". Then, the chapter will look at the nuclear weapons ambitions of some states that had nuclear programs for military purposes and those seeking the program for peaceful purposes. This will be followed by a discussion of uranium mining in Africa which is one of the main reasons that Africa is drawn into nuclear discourse as the continent has abundant deposits of uranium, a key component in the manufacturing of nuclear weapons. Thereafter, the chapter will look at the position of Africa in relation to nuclear weapons as well as the Pelindaba Treaty that made the continent a nuclear weapons free zone. Finally, the chapter will look at Africa's participation at multilateral groupings on the issues of nuclear weapons.

3.2 Nuclear weapons testing in Africa

At the time of the start of the NPT negotiations, African states had already become aware of the problems related to nuclear weapons mainly as a result of the French nuclear testing in the Sahara Desert (Adeniji 2002, p. 14). The BBC on December 27, 1960 reported that in February 1960 France carried out its first nuclear weapons test in the Saharan desert of Algeria at a place called Reganne Oasis, followed by two more tests, one in April and another in December. All these were surface and atmospheric tests. The CTBTO (n.d) notes that: "France switched to

underground testing at another site in the Algerian Sahara, named In Ecker, where it conducted a further 13 nuclear tests until 1967.” The French tests in the Sahara was met with much protest and outrage from the international community as this was seen as a serious challenge to disarmament efforts that were underway at that time. The third test which was carried out in December of 1960, a day before the African summit in Morocco, was met with much outrage by African states who viewed the tests as “nuclear imperialism” (BBC 1960).

A number of newly independent African states in the 1960s insisted on keeping the region a nuclear weapons free zone to the extent that some took drastic measures against the nuclear activities of some great powers such as France when it conducted its nuclear tests in the Sahara desert. The then deputy secretary general of the Arab League, El Dardiri Ismail, called for all Arab states in the League to cut off political and economic ties with France whereas Sudan recalled its ambassador from France (BBC 1960). The Nigerian government severed its diplomatic ties with France in 1961 and closed Nigeria's ports and airports to French ships and planes, while Ghana under Kwame Nkrumah froze the assets of France in its country altogether (BBC 1960; Ogunbadejo1984).

Following the suggestion by the Irish delegation in 1959, for the need of a treaty to prevent further nuclear proliferation, a committee was set up by the UNGA comprising of 18 countries mandated with the special priority of considering a treaty to prevent nuclear proliferation. The committee called the Eighteen Nation Disarmament Committee (ENDC) comprised of NWS, non-aligned and neutral states. This committee would eventually be responsible for the negotiations and drafting of what we now call the NPT. Three African states also formed part of the committee: Egypt, Ethiopia and Nigeria, and these three were vocal in the negotiations of the treaty. Egypt brought into light the efforts by African states to rid the continent of nuclear weapons whereas Ethiopia expressed the need for the treaty to encompass a comprehensive test ban and denuclearisation of certain areas while Nigeria highlighted a number of principles that the treaty should be based on (Adeniji 2002, p. 14).

When the NPT came into effect in 1970, it served as a big relief for most African governments. The NPT proved to benefit these states as not only did it prevent the super powers from conducting nuclear tests in the region which had dangers of radio-active contaminations, but it also served as a barricade to other states in the region who had nuclear weapons ambitions thus it

acted as a security instrument for most of these African states (Ogunbadejo 1984, p. 21). However, the BBC (1960) argues that “no amount of protest - be it from small African states to major superpowers like the USSR - prevented the French from carrying out even more tests in the Sahara in the race to catch up with America and Britain in nuclear arms technology.”

Despite the outrage by some African states, within the continent efforts were also under way by some African countries to mine uranium (an important component in the manufacturing of nuclear weapons) as well as the actual acquisition of nuclear weapons by some African states such as South Africa and Libya.

3.3 African states with nuclear weapons programmes

South Africa (SA) is the only African state to have successfully manufactured nuclear weapons. Until it dismantled them in 1989 it had managed to produce an estimate of seven nuclear warheads (Albright 1994). Albright further argues that SA's nuclear weapons were not necessarily for military purposes but rather as a political tool engineered to bring the West to the aid of SA in the event of a possible attack by the Soviets. Among some of the reasons for SA's nuclear weapons was the hostile neighbours-war relationship it had with Angola in 1987; those nuclear weapons were to provide SA bargaining power in relation to Soviet and Cuban involvement in Angola. Another reason was that the state was internationally isolated as a result of the apartheid rule so no nuclear weapon state would come to SA's help should they be attacked (John 2007). De Villiers *et al* (1993) also confirms that due to its deteriorating relations with the international community, SA felt isolated, therefore, the state felt the need to secure itself or to be able to defend itself if ever there was a possible attack on the country.

SA can attribute its success in being the only African state to have fully manufactured nuclear weapons to the abundance of uranium reserves the country has. Starting off as suppliers of uranium to countries that had nuclear weapons programmes such as the US and Britain, SA later decided to launch a nuclear research program for peaceful applications in the late 1950s (De Villiers *et al* 1993). Horton (1999, p. 04) notes “South Africa's quest for a nuclear deterrent capability required the acquisition of at least four basic elements: raw materials (uranium or plutonium), the ability to enrich the materials to weapons grade, trained personnel and adequate

facilities, and the capability to acquire or manufacture components required for the nuclear device.” By the late 1960s, the government constructed a uranium enrichment plant for commercial purposes. However, the facility also meant the possibility of developing a nuclear weapon. In 1978, SA changed its nuclear research program to focus on military rather than peaceful applications. The first fully assembled nuclear weapon was produced in 1979 and later on an additional six nuclear weapons were manufactured (De Villiers et al 1993).

F.W. de Klerk, after taking over as President, issued an order in 1989 for the termination of the nuclear weapons program that was underway and destruction of existing nuclear weapons as the state was moving towards becoming a member of the NPT (which they joined on the 10 July, 1991).SA followed the same policy as Israel, one of nuclear ambiguity. It was only in 1993, four years after calling for their destruction, that SA’s former president de Klerk admitted that the country had nuclear weapons (Albright 1994).

Schmitt and Kawashima writing on behalf of the Arms Control Association (2014) noted that Libya had a nuclear weapons program but at the time of its dismantlement it is not clear if it had succeeded in the actual manufacturing of a nuclear warhead. Nigeria is also suspected to have had nuclear weapons intentions, however details of these claims are unknown (GlobalSecurity.org).

3.4 African states with nuclear plants for peaceful purposes

Most of the peaceful use of nuclear energy in Africa is associated with the generation of electricity. According to Adeniji (2002, p. 05) “the study of energy needs in Africa shows that demand growth is projected to be well above the global forecast.” This means that the continent is facing increasing demand for electricity and states on the continent are struggling to meet this ever increasing demand. The challenge of electricity shortage has had impacts on the social economic development as well as the enhancement on the quality of life of many people on the continent. The shortage of electricity which is a common problem in most African countries has led to the need to explore other alternative sources of electricity from the conventional sources such as coal, oil, gas and hydro. Nuclear energy is now seen as the answer/new source to tackle

the increasing demand for electricity, a challenge experienced by many African states (Adeniji 2002, p. 05).

According to the 2014 report by the World Nuclear Association, there are more than 45 states around the world that are actively considering embarking upon nuclear power programs. These states range from those that have advanced economies to developing nations. All North African countries (Egypt, Tunisia, Libya, Algeria, Morocco and Sudan) have embarked on nuclear research programs. Nigeria, Ghana, Senegal, Kenya, Uganda and Namibia are among the sub-Saharan countries who are actively considering the initiative.

There are a number of African states that have expressed interest in developing nuclear energy to combat the challenge of electricity shortages and there are already eight research reactors across the continent (Broodryk & Stott 2012, p. 29). A report by IAEA reveals that at present Algeria, Egypt, Ghana, Libya, Morocco, Nigeria and SA have functioning nuclear research reactors (Laursen 2012, p. 12). The IAEA September 2010 report on international status and prospects of nuclear power revealed that there were about 65 states that did not have nuclear power who were either showing an interest in, considering, or actively planning for nuclear power and of those, 21 were African states.

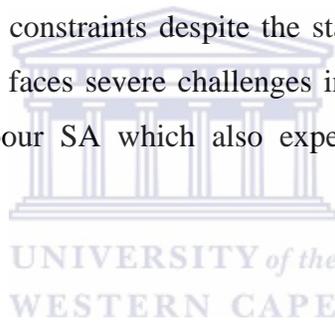
The World Nuclear News (2013) notes that the Koeberg nuclear power plant in SA is the only operating power plant in Africa. 5% of SA's electricity is generated from the nuclear reactor it has at Koeberg. SA's first commercial nuclear power reactors began operating in 1984. The country is part of the Southern Africa Power Pool (SAPP) and is responsible for 80% of the generating capacity of SAPP which is fuelled by coal (World Nuclear Association 2014 a).

Nigeria currently generates its electricity from plants, gas, hydro and oil and it still fails to meet the demands of its populous country. The government is currently planning on increasing its solar power systems as well as develop plans (with the aid of the IEAE) for nuclear power plants to meet power shortages which have greatly affected the country to the extent that it has caused industries to relocate to neighbouring countries like Ghana. The Nigerian government signed an agreement with Russia in 2009 which included the provision for the exploration and mining of uranium in the country as well as the construction of Russian power and research reactors. Other

major powers such as China and the US are also working with the Nigerian government in nuclear power plants and research plant programs (World Nuclear Association 2014c).

Ghana relies mostly on its own locally produced electricity generated mostly from hydro power plants. It aims to be an electricity exporter with the aid of nuclear power plants it intends to install. Ghana signed a nuclear cooperation agreement with Russia in mid-2012 which aims to build infrastructure for nuclear power in the country. Senegal and Uganda were also considering nuclear power plants as alternatives to power generation to meet the domestic demands for electricity in their respective countries (World Nuclear Association 2014 c).

Kenya's electricity production comes from hydro, oil and geothermal. With the recommendation by the country's National Economic and Social Council, the government aims to start using nuclear power by the year 2020 to meet its growing electricity demand. Namibia like the other states also faces electricity supply constraints despite the state being one of the world's major suppliers of uranium. As the state faces severe challenges in power supply, it relies mostly on electricity supplied by its neighbour SA which also experiences supply constraints (World Nuclear Association 2014 c).



3.5 Uranium exploration and mining in Africa

Africa has an abundance of mineral deposits of which uranium ore is one of them. Uranium, a key component in the production of nuclear weapons is also used as a fuel for the generation of electricity as well as used in other projects for peaceful purposes. Many African countries have uranium ore deposits, and four African countries were in the top 20 of the global uranium exporters of 2012: Niger (4), Namibia (5), Malawi (10) and SA (12). African countries also make up a total of 18% of the world's uranium production with 8% coming from Namibia, 7% from Niger, 1.2% from Malawi and 1% from SA and the rest from other African states (Dasnois 2012, p. 05). Other African countries that are exploring/mining uranium are Algeria, Botswana, Central African Republic (CAR), Democratic Republic of the Congo (DRC), Gabon, Guinea, Equatorial Guinea, Mali, Mauritania, Morocco, Tanzania, Zambia and Zimbabwe (Swart, 2013, p. 212).

The DRC, previously known as the Belgian Congo, was one of the major suppliers of uranium for the Manhattan project in the early 1940s (Dasnois 2012; Swart, 2013). Because of political instability in the country, there isn't much uranium mining activity; only the unofficial mining of the deposits for Cobalt which started in 1997. Despite no current mining in Gabon, there is active uranium exploration that continues in the country. Much of the uranium mining in Gabon was linked to Niger (World Nuclear Association, 2014 b).

Uranium was discovered in Niger by a French company looking for copper in 1957 but it was only in 1971 that the first commercial uranium mine began operating and since then Niger has gone on to produce some of Africa's highest grade uranium ores from its two important uranium mines providing 7.5% of world mining output. There is also robust government support for the expansion of uranium mining (Dasnois 2012; World Nuclear Association 2014 b).

In Namibia, uranium was first discovered in 1928 in the Namib desert but it was only in the late 1950s that intense exploration got underway and only in 1976 was the country's first commercial mine began operating. In Namibia there are two significant uranium mines which are capable of producing about 10% of the overall world mining output. Like Niger, there is strong government support for the expansion of uranium mining as well as an interest in using the uranium for domestic nuclear power purposes (World Nuclear Association, 2014b).

In Malawi, uranium was discovered in the 1980s but extraction only started in 2009. Despite this late discovery, Malawi has gone to be the third largest supplier of uranium in Africa. The country only has one uranium mine in the far northern part of the country and Paladin Energy, a Western Australian company is the only mining company that is operating the Kayelekera mine in the country's northern district of Karonga, the same company that also mines uranium at the Langer Heinrich mine in Namibia (Dasnois 2012, p. 07).

Uranium mining in SA was generally a by-product of gold/copper mining. SA is the fourth highest producer of uranium in Africa and the twelfth in the world. Uranium reserve that SA has is believed to be the second largest reserve in the world (Dasnois 2012, p. 07).

Even though Africa mines and uses uranium for peaceful purposes, it has been argued by some that due to factors facing the continent such as corruption and weak central authority, Africa

remains an ideal destination for potential nuclear weapon seekers such as Iran; thereby still contributing to the threat of nuclear weapons as they seem to sponsor materials (uranium) to the potential seekers of nuclear weapons (Swart 2013, p. 212).

3.6 Africa's position on nuclear weapons

The topic of weapons of mass destruction, especially nuclear weapons still remains an issue of low priority among African governments despite the successful initiative of the elimination of nuclear weapons in the African region. The reason for this is the existence of other national security and human security issues like intra-state conflicts, small arms proliferation, poverty, and HIV/Aids. Two African states stand out though in terms of the work they put into the cause of nuclear weapons elimination both at individual and multilateral level: SA and Egypt. Egypt has played a leading role in the discussions for a Middle East weapon of mass destruction free zone. This has been the case not only because of its (and other states north of the Sahara) close relations with Middle Eastern states, but also due to the close proximity it shares with the region. SA on the other hand being the only state in Africa to have voluntarily dismantled its nuclear weapons has been at the fore in pushing the disarmament agenda based on its own experience as well as for the sake of international peace and security (Laursen 2012, p. 16).

Speaking at the UNGA in 1998, former SA President and human rights advocate Nelson Mandela argued for joint efforts by states (especially the coalition of eight UN nations of which SA was amongst) against nuclear weapons. He did so to encourage the elimination of nuclear weapons and the threat of total destruction of mankind they pose. While addressing the 53rd UNGA Mandela was quoted saying “We must face the fact that after countless initiatives and resolutions, we still do not have concrete and generally accepted proposals supported by a clear commitment by the nuclear-weapons states to the speedy, final and total elimination of nuclear weapons and nuclear weapons capabilities”. This statement echoed the voice of the frustrated international community on how they could no longer remain complacent with the reluctance of disarmament by nuclear weapons states despite numerous disarmament efforts.

In addition, while representing Africa in the United Nations Security Council (UNSC) as a non-permanent member in 2010, Ugandan President Yoweri Museveni commented on Africa's position on nuclear weapons and called for a nuclear weapons free world. He encouraged states

to have access to nuclear technology for peaceful purposes only. He is quoted by Ntale (2010) as saying: “Nuclear weapons are dangerous for humanity-even more dangerous than all the other previous weapon systems...We should, therefore, work for a nuclear weapons-free world. This means that those who have these weapons should work to get rid of them under an internationally agreed and verifiable treaty.” It is clear that most if not all African states share the same sentiments as was evidence with the signing and ratification of the Pelindaba Treaty, which will be discussed below.

According to Swart (2013, p. 210): “African governments were reported to have played a more active role in the 2010 NPT Review conference... In addition, some African States have requested membership at the Conference on Disarmament, but these requests have been denied.” This shows that there are African states that, given the chance, would champion the call for disarmament. However, the numbers of those willing states are few, which have led to some accusing African states of a lack of interest in relation to their participation in nuclear weapons debates and discourse.

In terms of UNSC Resolution 1540 (2004), African states have proved how low priority the issue of nuclear weapons is on their agenda in a region where there are more immediate and possibly more relevant problems, such as combating poverty and the spread of HIV/Aids. As is the requirement of the resolution for all member states to submit a report to the committee on the measures they have taken or plan to implement to meet the provisions of the resolution, we see that the attitude of these African states towards the issue of proliferation of WMD comes to light as only 34 of the 54 African states have submitted their reports and most of which are incomplete. Those states that have submitted their reports have indicated their inability in assisting non state actors in acquiring nuclear weapons as they themselves are not in possession of any type of WMD (Dye 2008, United Nations official document, 2011)).

Swart (2013) identifies a number of factors attributing to this lack of involvement or engagement of African states in matters relating to nuclear weapons;

- a. Less involvement of African states in the production and use of nuclear weapons as a result of the Pelindaba Treaty. With the treaty in effect, African states are well aware of

their obligations not to participate in any activity that might lead to the development of nuclear weapons so with that in mind and after securing their continent of nuclear weapons or any direct threat of their use on the continent, states have now taken a passive role in the matter.

- b. Geographic location of Sub Sahara Africa makes the continent far removed from NWS plus less of a target. All of the southern part of the world is now a NWFZ therefore nuclear weapons are found in areas far from the southern region of which Africa is part of so these states do not have much to worry about unlike if the NWS were in neighbouring regions and also due to the continent's friendly ties with NWS it makes it less of a target therefore the inactive role Africa plays as they are not directly under threat.
- c. Perception that nuclear weapons are an issue of "first world countries" and that "African states are only dragged unwillingly into the debate by western countries". To be in possession of nuclear weapons and their maintenance requires great financial resources, which most African states do not have as they are among some of the poorest states in the world. Therefore they view nuclear weapons as a thing for those rich first world countries and they only get involved as part of the international community.
- d. African states tend to vote in line with donor states and most of these donor states happen to be NWS. Therefore, as noted earlier that these NWS seem to be reluctant in addressing the call for disarmament and complete elimination, we see most African states also following suit in making the issue of less urgency.
- e. The continent is currently dealing with issues such as small arms and light weaponry which in a sense are seen by Africa states as the real "weapons of mass destruction". Guns have killed millions of innocent victims in Africa as a result of a number of conflicts that have taken place (still are) in the continent. Because the light weapons (guns) have wiped out millions of people around the continent and not nuclear weapons, African states view them as WMD due to their destructiveness witnessed and not nuclear weapons per se.
- f. Competing priorities of security issues such as poverty, unemployment, diseases *etcetera*. Again there are more pressing real time threats to human, national and regional security that African governments have to deal with therefore less time is spent by these

governments discussing matters of potential threat to human security when they are currently dealing with humanitarian threats on a daily basis.

3.7 The Pelindaba Treaty

It was at the 1964 Organisation of African Unity (OAU) first summit that member states articulated their willingness to commit the continent as a NWFZ through a treaty; however it was not until thirty years later that these member states started on the actual negotiations of the treaty (Adeniji 2002; Pretorius 2011). After the negotiations and agreements, the Treaty was opened for signature in Cairo, Egypt on April 11, 1996 and came into force in 2009 after it was ratified by the 28th instrument as is the provision made in article 18 (2). In sum, the Treaty bans any form of nuclear activity on the continent unless it is for peaceful purposes. Research, development, manufacturing, stockpiling, acquisition, possession, testing and controlling of any form of nuclear weapon device are prohibited.

The Treaty at its conception had a lot of support from the international community and the UN. Speaking at the 1996 signing ceremony of the Pelindaba Treaty in Cairo, the then secretary general of the UN, Boutros Boutros-Ghali, cited in Adeniji (2002, p. 320) said: “Let us not forget that the most safe, sure and swift way to deal with the threat of nuclear arms is to do away with them in every regard by having a nuclear weapon-free world. This should be our vision of the future. No more production. No more testing. No more sales or transfers. Reduction, destruction and the eventual elimination of all nuclear weapons and the means of their manufacture should be humanity’s great common cause”. This statement is re-enforced in article 3(a) of the Treaty where member states pledge “not to conduct research on, develop, manufacture, stockpile or otherwise acquire, possess or have control over any nuclear explosive device by any means anywhere”.

Furthermore, article 3 of the Treaty pertaining to the “Renunciation of nuclear explosive devices” put more emphasis as it states that each party undertakes:

- (b) Not to seek or receive any assistance in the research on, development, manufacture, stockpiling or acquisition, or possession of any nuclear explosive device;
- (c) Not to take any action to assist or encourage the research on, development, manufacture, stockpiling or acquisition, or possession of any nuclear explosive device.

Africa's readiness to undertake all means necessary "in achieving the ultimate goal of a world entirely free of nuclear weapons, as well as of the obligations of all States to contribute to this end" (Adeniji 2002. P. 321) was demonstrated through the introduction and signing of the Treaty that eliminated nuclear weapons in the region. It was also evident in prohibiting member states in engaging in nuclear weapon activities directly and indirectly unless it was for the purposes of contributing towards disarmament or nuclear energy for peaceful use. In addition, the signing of the treaty was a possible suggestion of the increasing drive as well as the political willingness by those African member states to achieve actual progress towards nuclear weapon disarmament (Tabassi, 2009, p. 57).

Additionally, the importance of the Pelindaba Treaty was highlighted by Boutros Boutros-Ghali cited in Adeniji (2002, p. 319) who notes "the establishment of an African nuclear-weapon-free zone will advance global disarmament norms and contribute to efforts to prevent the proliferation of nuclear weapons and strengthen the international non-proliferation regime. It will accelerate the stride towards a world free from nuclear weapons. It is a promising example to others wishing to contribute to broadening the areas of the world from which nuclear weapons will be forever proscribed."

Fifty-three African states, excluding South Sudan (yet to become a member), signed the treaty and at present 16 states are yet to ratify. Some states have failed to ratify due to reasons of weak government structures or internal instability within their borders as is the case with Somalia. Other states like Egypt have not ratified due to political reasons (on condition that Israel comply to the NPT as a NNWS) while other states hesitate based on economic reasons whereby the ratification of the treaty would impact on their uranium exports- a breach to article 9 (c) of the Treaty (Pretorius 2011, p. 326). Table 1. (Disarmament treaties database: Pelindaba treaty, 2009) shows those African states that signed the Treaty but are yet to ratify it for various reasons.

Table 1: African states that have signed but not ratified the Pelindaba Treaty

State	Signed
 Angola	April 11, 1996
 Cape Verde	April 11, 1996
 CAR	April 11, 1996
 DRC	April 11, 1996
 Djibouti	April 11, 1996
 Egypt	April 11, 1996
 Eritrea	April 11, 1996
 Liberia	July 09, 1996
 Morocco	April 11, 1996
 Niger	April 11, 1996
 São Tomé and Príncipe	July 09, 1996
 Seychelles	July 09, 1996
 Sierra Leone	April 11, 1996
 Somalia	February 23, 2006
 Sudan	April 11, 1996
 Uganda	April 11, 1996

One of the most critical drawbacks of the Pelindaba Treaty, like all the zone treaties, is the Additional Protocol requirements, and the belief that if only the nuclear-armed states promise not to use nuclear weapons against the region, then Africa will be safe. Nothing can protect third-party states from the impact of nuclear weapons. Negative security assurances only consolidate further the divide between the nuclear-armed and the non-nuclear weapon states according to the Project Leader in WMD Project for ILPI: Mr Hugo (Interviewed 19/11/2014). In effect, it helps legitimize nuclear weapons as in a way it acknowledges that it is alright to have nuclear weapons as long as they will not be used on the continent.

Adeniji notes (2002, p. 02): “Non-proliferation was the primary reason for the African Heads of States’ Declaration on the Denuclearization of Africa in 1964”, this means that the driving objective for the Treaty was disarmament for security (military) reasons and not necessarily

humanitarian reasons. However, this does not imply that the motivation behind the drafting of the Treaty was not influenced by other factors such as the humanitarian concerns relating to the consequences of nuclear weapons use.

In addition, Mr Torbjorn Graff Hugo (interviewed 19/11/2014) highlights that the Pelindaba Treaty took a very long time to negotiate, and an equally long time to enter into force and to date there are still a two digit number of states that have not ratified. Hence, the impact of the Treaty on disarmament and the humanitarian initiative maybe in question. What has changed is that Africa as a group now can proclaim that they have already prohibited nuclear weapons regionally, and it is time to do the same globally. Also, it should be recognised that NWFZ cannot protect African states from the global effects of the use of nuclear weapons; this should be used as an argument to engage African states more actively as they are not safe/free from experiencing the consequences of nuclear weapons if ever used.

3.8 African engagements at multilateral groupings

According to Swart (2013, p. 215) “civil society has opined that nuclear weapons-possessing States would be deeply unsettled if there were to be a common African position on the prohibition of nuclear weapons. Many countries are calling for African States to contribute to the debate, both quantitatively, as a bloc of 54 States, and qualitatively, through norm-setting.” Over the years, some African states have taken heed of this call and have participated in forums that address the issues of nuclear weapons. When it comes to international forums that address nuclear weapons below are some of the forums that African states are involvement in: Treaty on the Non-Proliferation of Nuclear Weapons, The UN General Assembly First Committee on Disarmament and International Security, The Comprehensive Test Ban Treaty, The Conference on Disarmament, African perspectives on UNSC Resolution 1540 and the Nuclear Security Summit.

According to Laursen (2012, p. 08): “The Conference on Disarmament (CD) is a multilateral negotiating forum for disarmament and arms control...The CD now counts 65 members, including all the nine nuclear-armed states. Only 12 African states are currently members of the CD: Algeria, Cameroon, Democratic Republic of Congo, Egypt, Ethiopia, Kenya, Morocco, Nigeria, Senegal, South Africa, Tunisia, and Zimbabwe.” Even though there is some contribution

by African states in the CD, there is still a need for more African states to contribute to the conference if the world is to witness nuclear elimination. As there is strength in numbers, and Africa comprises of 54 states, it would strengthen the cause if not only all African states participated in the CD, but all other states in the world as this should be the responsibility of everyone to oversee nuclear disarmament.

Also, African states engage in issues of nuclear weapons in multilateral groupings such as the African Union (AU), Non-Aligned Movement (NAM) and the New Agenda Coalition (NAC). The AU played a very important role in the whole process of making the continent a NWFZ. The organisation had a key role in the negotiating process and ratification of the Pelindaba Treaty. Despite having such a significant role in the elimination of nuclear weapons in the region, the AU is yet to put a mark on the global initiative of nuclear weapons elimination. This is the case as in terms of security, the AU has other more pressing issues on its agenda. Therefore much of its efforts are focused on these immediate challenges facing Africa's security than on issues of global nuclear weapons disarmament (Laursen 2012, p. 12).

NAM is a grouping of states that are not directly/formally aligned with or against any major block. All African states apart from the recently independent South Sudan are members of NAM. The long term commitment of NAM to the CD and nuclear weapons convention was portrayed in the October 2011 UN First Committee meeting where it contributed to the topic of nuclear weapons elimination by emphasizing the importance of starting with the CD for a program with a detailed timeframe that will oversee the complete elimination of nuclear weapons. Given that NAM is made up of 55% of the population of the world or two thirds of member states of the UN, it has the potential to play an important role in international negotiations on the topic (Laursen 2012, p. 12).

NAC was established in 1998 as a result of the absence of progress on nuclear weapons disarmament by the NPT with the aim of reviving the debate on the need for non-proliferation and disarmament. NAC is a coalition of seven states from around the world (two of which are from Africa -SA and Egypt) who are considered to be middle powers and are in quest of the creation of a nuclear weapons free world (Laursen 2012, p. 12). Further to this, Laursen (2012, p. 12) argues that "middle power diplomacy has been claimed to have had a crucial role in the

establishment of the nuclear non-proliferation regime, which includes the NPT, the various nuclear arms reductions treaties, the test ban treaties and the nuclear material export regulations.”

Africa’s role in the NPT context (as an example) has, on the one hand, been non-uniform: South Africa had a special position for a very long time, while the same can be said for the North African states. Egypt is generally more concerned about the Middle East context than the African context. The same goes for many of the other Maghreb countries. The one thing that has united them has been the NAM. The problem with NAM, of course, is that it is a very large group, with no particular African angle on issues. The effect of all this, it could be argued, is that most African countries have been relatively disengaged from the multilateral nuclear disarmament debate, for quite a long time (Mr Hugo interviewed 19/11/2014).

3.9 Summary

From the discussion above, it can be concluded that Africa has had a long history with nuclear weapons from the early years of nuclear weapons testing to the present where the continent is now a NWFZ. Uranium mining and supply has been one of the major ways that Africa has contributed to the manufacturing of nuclear weapons as uranium is a key component in the process. Over the years, African states have opted to use uranium for peaceful purposes especially for nuclear power generation. In respect to nuclear weapons, South Africa stands out as the only country to have voluntarily disarmed and the continent as a whole also stands out through the enforcement of the Pelindaba Treaty that bans nuclear weapons on the continent, thus contributing to the call for disarmament. Even though it was observed that African states in general are not at the fore in championing nuclear disarmament following the signing of the Pelindaba Treaty, the efforts of a few African countries in pushing the disarmament agenda at multilateral groupings should not be overlooked but rather should be commended. The following chapter will look at disarmament on humanitarian grounds and the role that Africa has played in regards to this humanitarian initiative of nuclear weapons disarmament.



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Chapter Four: Nuclear weapons disarmament and the humanitarian approach

4.1 Introduction

An organisation that advocates for the abolition of nuclear weapons called the International Campaign to Abolish Nuclear Weapons (ICAN) (n.d.) notes that: “Nuclear weapons are the only devices ever created that have the capacity to destroy all life on Earth.” Due to their destructiveness in nature, it led to many attempts by local and international communities to find ways and means of getting rid of this threat that could destroy all life. This chapter will primarily focus on the subjects of international and human security as well as IHL. This will be done by looking at the actual process of disarmament with particular emphasis on the humanitarian approach to nuclear weapon disarmament and how these efforts relate to the mentioned subjects.

4.2 Examining the humanitarian consequences of nuclear weapons use

Humanitarian efforts to ban WMD are not new in history. The respective banning of biological weapons in 1972 and chemical weapons in 1993 as well as the recent banning of conventional weaponry in the form of landmines and cluster munitions has all been attributed to the humanitarian initiative whose advocates focused their campaigns on the inhumane, indiscriminate and unacceptably harmful effects on innocent human beings that was caused by these weapons (Johnson, 2014). In addition, ICAN (n.d.) highlights that “the humanitarian threat posed by nuclear weapons can fairly be straight forward to solve. Compared to other global humanitarian and environmental challenges, such as climate change and poverty, a solution to the nuclear problem does not require comprehensive behavioural change, or restructuring of the global economic system.” Therefore if states were to be serious as they were with banning other WMD they would also succeed in getting rid of nuclear weapons on the planet.

Regarding nuclear accidents the Fukushima (Japan in 2011) and Chernobyl (Ukraine in 1986) nuclear accidents serve as reminders to the dangers of radioactive release on people and the environment. In these two cases thousands of people were displaced from their homes in the areas close to and surrounding the nuclear plants, the health of the people were also affected as

there has been cases of radiation-related thyroid cancer and other forms of cancer on some people exposed to the radiation fall out (in the case of Chernobyl) (Steinhauser *et al*, 2014).

Evidence produced by many studies and various meetings and conferences on the subject has shown that beyond the immediate devastation and deaths caused by nuclear weapon detonations, there are equally devastating consequences in the medium to long-term. A nuclear weapons detonation seriously affects human and animal health, economic activities, agricultural production and the environment through the contamination and nuclear fall-out and is not confined to space and time (Swart, 2013, p.201). It has a particularly devastating impact on developing countries that generally lack the necessary resources and support systems to manage the various effects of such an event (Combrink Interviewed 11/12/2014).

4.2.1 Impact of a nuclear weapon detonation on people

The results of a detonation of a nuclear weapon is that it could lead to the death of thousands or even millions of people over time depending on the size and the location of the bombing. The blast itself would not only flatten or destroy buildings and kill people within them. Also, people within kilometres from the blast would die from the shock waves, shattered glass and other lethal flying objects as a result of the blast. The fireball from the blasted nuclear weapon can reach over a million degrees Celsius making it impossible for nobody in the radius of the blast to survive the explosion. Not only would the blast burn people to death but it would also cause severe burns requiring immediate treatment, as well as spread mass fires to houses and forests (Atomic Archive n.d; Borrie & Caughley 2014; Campaign for Nuclear Disarmament, n.d.).

Radiation exposure as a result of the energy released from the blast would be lethal and result in death within days or weeks of exposure. Health problems relating to radiation exposure would also occur such as declining resistance to infections, damages to the nervous system and different types of cancer in the long term (Atomic Archives, n.d; Borrie & Caughley 2014).

Another human impact of the blast would be the high numbers of displaced people caused by the blast. Due to infrastructure damages and exposure to radiation, it would cause people to lose their homes and vacate the affected areas for much safer zones. All the above mentioned

scenarios could also cause severe psychological effects to the survivors of the blast as that in itself would be a very traumatising experience with having to lose loved ones, health concerns, and the experience of being homeless (Borrie & Caughley 2014, p. 23-36).

4.2.2 Impact on society

The blast would also cause serious socio-economic damages. Not only would the blast damage houses but it would also damage structures such as roads, schools, hospitals, communication and transport networks (Borrie & Caughley 2014, p. 29).

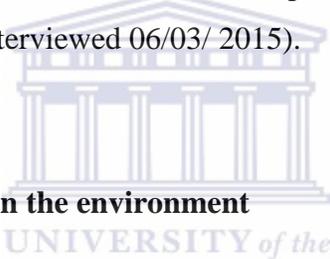
The blast would also have an effect on food security. The radiation fall out would affect farming land and contaminate water necessary for food production as was exemplified in the Chernobyl incident where the nuclear accident resulted in hundreds of thousands of hectares of land being removed from cultivation (Swart, 2013, p.201). According to ICAN (n.d.): “it would take only 0,1% of the explosive yield of the current global nuclear arsenal to bring about devastating global agricultural collapse and widespread famine. This makes the continued existence and deployment of nuclear weapons into one of the most serious humanitarian problems of our time.” Affected areas would resort to importing food from safer regions which in turn would lead to increased food prices caused by the increase in demand.

The blast would also have an impact on the global economy. The damages to infrastructures and communication networks would hamper social and economic development. It would affect domestic, national, regional and even global trade as is evident with the September 11 events that followed the attack of the USA. It would take years to stabilise the economic and financial chaos that would arise from the event of a nuclear weapon detonation (Dumas & Nelson, 2013, p. 53).

Another challenge that would arise from the blast is that of the provision of humanitarian assistance to the bomb victims. The overwhelming number of injured by the blast would pose a number of challenges for those equipped to provide assistance. This would undermine the ability of national staff to operate as they themselves would directly be affected by the blast. Not only that but there also would be logistical problems, communication problems, insufficient resources such as medical and health personnel and equipment and the lack of these would hamper

effective humanitarian assistance to the affected civilians ((Borrie & Caughley 2014; Ruff, 2013).

The effects of a nuclear weapon explosion are not constrained by national borders; as a result it should be an issue of deep concern shared by all states. On capabilities at national, regional and or international levels, the response to such an outcome as the denotation of a nuclear weapon would have many challenges. Based on a risk assessment carried out by the ICRC between 2006 and 2009, the challenges faced by ICRC in its response to incidents of alleged use of nuclear, biological and chemical weapons it shows that “there is no adequate international response capacity that could address these consequences and assist the victims of a nuclear war, whatever its scale” (Swart 2013, p. 202). As the means to assist a substantial portion of survivors of a nuclear detonation are not currently available in most countries, and is not feasible at the international level. There is therefore a humanitarian imperative to prevent the use of nuclear weapons in the first place (Swart interviewed 06/03/ 2015).



4.2.3 Impact on the environment

The nuclear bomb would damage various sources of food and water due to radiation contamination. According to the *nuclearfiles.org*, the soot arising from the blast would have dangerous implications on global climate which would then affect global production. On top of that it is estimated that the world could witness some of the coldest temperatures ever recorded in over 1000 years. This would cause global disaster on temperatures across the world and, most importantly, on agriculture as farming seasons could be eliminated for over a decade.

Research has also shown that “the ozone layer, which protects the surface of the Earth from harmful ultraviolet radiation, would be depleted by 40% over many inhabited areas and up to 70% at the poles” (Jha 2006). This would result in the earth being vulnerable to all sorts of environmental changes. As the world would experience different weather patterns never experienced before which would affect the wellbeing of people. Needless to say the impact this would also have on wildlife both on land and water will be devastating. Radioactive fallout would result in food derived from plants and animals being too contaminated for consumption (Borrie & Caughley 2014, p. 23-36).

4.3 International and Human Security

Fiore (2013) indicates that “International security consists of the measures taken by nations and international organizations, such as the United Nations, to ensure mutual survival and safety.” These measures comprise military action and diplomatic arrangements such as conventions and treaties e.g. the Pelindaba Treaty and the NPT that has a key role in articulating the call for the banning of nuclear weapons.

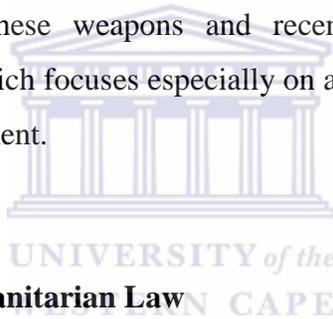
Human security according to Gregoratti (2015) is an “approach to national and international security that gives primacy to human beings and their complex social and economic interactions. The concept of human security represents a departure from orthodox security studies, which focus on the security of the state. The subjects of the human security approach are individuals, and its end goal is the protection of people from traditional (i.e., military) and non-traditional threats such as poverty and disease.” Additionally with respect to the issue of human security Nanda (2009, p. 336) states that “the focus on human security is to ensure that adequate attention is given to addressing the real sources of insecurity from which so many people all over the world suffer. Nuclear weapons constitute a major source of people’s insecurity.” Many African states in recent years have emphasised the significance of dealing with human security at multiple levels to address the insecurities brought about by the existence of these nuclear weapons. Through making the continent a NWFZ, Africa demonstrated its commitment to safeguarding human security in the continent.

NWS rely on nuclear weapons for security (Nanda 2009, p. 343) while other states especially those in NWFZs view those same weapons as a cause for insecurity. Even though nuclear weapons were acquired with the idea of ensuring national and territorial security, their existence poses a threat to international and human security. It can be argued that one of the main threats to international peace and security is caused by those NWS who are reluctant and have failed to disarm as was the provision in article VI of the NPT. Some states are still in possession of nuclear weapons and are not forthcoming in fulfilling the obligations they have of eventual disarmament and at the same time they prevent other states from seeking “security” in forms of possessing nuclear weapons. It has led to a lot of tension with some states withdrawing from the NPT and challenging this idea of only a select few being in possession of nuclear weapons, thus

they have also embarked on fulfilling their nuclear ambitions as is the case with North Korea. This then brings about insecurities for the international community as there is lack of trust.

Nuclear weapons cannot and should not be considered as a source of security as they are in fact a source of insecurity. Stott cited in Swart (2013, p. 217) insists that “the only absolute guarantee against the use of nuclear weapons is their complete elimination and the assurance that they will never be produced again. The longer nuclear weapons are possessed, modernized and their use legally rationalized by some, the harder it will be to achieve their elimination or to prevent their proliferation.” Prevention is the best alternative to securing international peace and security.

With that in mind, disarmament efforts try to address this challenge to international security. As a result, all efforts toward disarmament should be encouraged, supported and adhered to for the better purpose of international peace, stability and security. Both state and non-state actors work collectively to do away with these weapons and recently stakeholders have drawn on international humanitarian law, which focuses especially on aspects of human security to address the challenges of nuclear disarmament.



4.4 International Humanitarian Law

International Law is essential in the efforts of successfully controlling, limiting and eliminating nuclear weapons (Granoff & Granoff 2011, p. 54). “Not only does international law preclude the use of nuclear weapons, but it also precludes threats to use nuclear weapons” (Granoff & Granoff 2011, p. 53). IHL serves as an important reference point in relation to the international legal framework pertaining to nuclear weapons. The goal for IHL is to limit the effects of armed conflict as well as inhumane means of armed conflict, which in turn would lessen human suffering

Granoff & Granoff (2011, p. 54-55) summarize some of the rules that are at the core of IHL that define acceptable military conduct as follows:

“Rule of distinction prohibits the use of a weapon that cannot discriminate in its effects between military and civilian targets. This law recognizes that the use of a particular weapon against a military target may cause unintended collateral or incidental damage to

civilians and objects and permits such damage, subject to compliance with the other applicable rules of law, including the rule of proportionality. However, the weapon must have been intended for and capable of being controlled and directed against a specific military target, and the civilian damage must have been unintended.

Rule of proportionality prohibits the use of a weapon if its probable effects upon non-combatant persons or objects would likely be disproportionate to the achievement of a specific, legitimate military objective.

Rule of necessity provides that in conducting a military operation, a state may use only such a level of force against its adversary as is necessary or imperatively necessary to achieve its military objective, and that any additional level of force is unlawful.

Corollary requirement of controllability means that the rules of distinction, proportionality, and necessity prohibit the use of weapons whose effects cannot be controlled by the user.”

When applying the above highlighted IHL to the use of nuclear weapons, “it becomes clear that these weapons cannot comply with international law. The effects of nuclear weapons are inherently uncontrollable and do not meet international criteria for discrimination between military and civilian targets, for proportionality, and for necessity” (Granoff & Granoff 2011, p. 53). However, IHL does not directly address the issue of nuclear weapons thereby making it difficult to charge people for violations of an internationally binding law which is not addressed in the conventions. This is why there is the issue on noncompliance or lack of interest by NWS in disarmament. If there was an international law banning nuclear weapons on the other hand based on the devastating impact they bring to humanity as well as the threat they pose to international peace and security, then legally it would be possible to bring these NWS to book.

4.5 Nuclear Disarmament

The Collins English dictionary defines nuclear disarmament as “the gradual reduction and eventual elimination of all nuclear weapons in the world”. From this definition, the various treaties that were discussed in the previous chapters (and of course the numerous not mentioned),

mostly address the “gradual” aspect of the definition whereas the humanitarian approach of nuclear weapons disarmament focuses on the “elimination” aspect of the definition as this approach not only questions the existence of nuclear weapons but calls for total abolition of nuclear weapons in the entire world.

In the first paragraph of the Preamble of the NPT, it addresses the humanitarian concerns of nuclear weapons as it states that “considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples...”. This shows that among others, the discussions leading to the Treaty had its basis on the humanitarian impact of nuclear weapons use.

Much focus on disarmament has been on the technical aspects, as well as the military and security reasons for their existence and not on the humanitarian aspect. The destructive nature of nuclear weapons and their inability to distinguish between military targets and civilians raises questions of how humanitarian rules can be observed as they would be targeted at populated areas (as was the case with Hiroshima and Nagasaki). The humanitarian approach therefore calls for the disarmament and eventual elimination of all nuclear weapons as the humanitarian consequences of their use are unacceptable.

The humanitarian initiative also paves the way for other stakeholders to participate/contribute in nuclear weapons discussion, from what was previously only a state/ government centred debate. The humanitarian approach draws into the debate other actors such as civil society thereby making it possible for the ordinary citizen to take part and have a say in the discussion and not just the “expert” in the field.

4.6 Humanitarian approach to nuclear weapons disarmament

The lack of progress in a number of forums that focus on nuclear non-proliferation and disarmament such as the NPT and the Conference on Disarmament have resulted in a number of Civil Society Organisations (CSOs) and states (especially NNWS) to find other means of strengthening the debate around nuclear weapons disarmament. The objective of these

stakeholders is to shift the attention of the world to focus on the humanitarian impact of nuclear weapons, stressing the point that the onus for disarmament does not only lay with NWS, but it being the obligation of all states collectively (Broodryk 2014). “This development is attributed to factors such as increased attention to international humanitarian law in relations among states, and a growing public awareness driven by scientists and physicians of the impact of any use of nuclear weapons on the global environment, climate, and agricultural resources,” (Borrie and Caughley 2013, p. 08).

According to Stott (2013) “a nuclear weapon detonation, whether intentional or accidental, could have catastrophic short- and long-term humanitarian, economic, developmental and environmental effects. Such a detonation would have global implications.” It is then unfortunate that despite the obvious impact the use of nuclear weapons would have on humanity, it is only recently that most nuclear weapon debates have revolved around the international security and military perspective and not the humanitarian perspective. This brings in the need the debate to focus on the impact on human beings and not on state security. This call for a shift was asserted by the former ICRC president Jakob Kellenberger (cited in Swart 2013, p. 203) who argues that “the currency of this debate must ultimately be about human beings, about the fundamental rules of international humanitarian law, and about the collective future of humanity.”

Much focus on the humanitarian approach to disarmament started in 2010. Since then, a number of activities have taken place that have helped to highlight the humanitarian impact of nuclear weapons as well as reshape the discourse of nuclear weapons (Broodryk 2014). These activities have been through anti-nuclear weapons campaigns carried out by organisations such as ICAN, awareness campaigns on the humanitarian consequences of nuclear weapons use, and debates and discussions in various multilateral groupings on ways of pushing the disarmament agenda based on humanitarian grounds.

In addition, some disarmament activists such as the ICRC call for the application of the additional protocols of IHL to the use of nuclear weapons, protocols such as “distinction, proportionality and the prohibition on causing superfluous injury or unnecessary suffering” (Swart 2013, p. 198). There are treaties that limit/prohibits certain aspects of possession, testing and or use of nuclear weapons but no international law that focuses solely on banning nuclear weapons. The main principles of IHL were established in the Geneva Conventions of 1949 and

the additional protocols of 1977. However, it is unfortunate that in these instruments there is no explicit mention of nuclear weapons, even though the IHL general principles apply (Swart 2013, p. 197).

According to Borrie and Caughley (2013, p. 6-7) the plan to use nuclear weapons in warfare must be in line with IHL where there is a clear distinction between targets and non-targets as well as to limit collateral damage through the protection of civilians something that nuclear weapons are not capable of distinguishing due to their levels of destruction in radius. Furthermore Borrie and Caughley (2013, p. 07) observe that the “humanitarian approaches offer useful starting points for pressing policymakers to explain how such contradictions are reconcilable, and to adjust their actions accordingly with a view to civilian protection.”

As states have taken up initiatives to refine their weapons, to be more powerful than those bombs originally dropped on Hiroshima and Nagasaki, the results of the impact after the use of these refined weapons are unquestionable. It would have severe impact on life, environment, food production, global climate and societies at large. The humanitarian approach therefore provides a powerful framework for nuclear weapons disarmament.

As stated previously, the humanitarian approach has been credited for the successful banning of other forms of WMD such as biological and chemical weapons and as such the humanitarian approach may increase value to multilateral negotiation processes on international security. As the main focus of the initiative is that of human suffering that will be caused by the detonation of such weapons, it appeals to a wider audience outside the interests of just political/state actors. It involves other stakeholders such as CSOs that advocate in the health, economic, social and development sectors. The approach therefore centres on promoting human security and protecting the individual from violence and insecurity.

One challenge to the humanitarian initiative is that it fails to draw the attention of all relevant stakeholders more especially the permanent members of the UN Security Council. States should therefore look for other ways of strengthening the disarmament initiative that will draw the attention of all parties such as an initiative that focuses on legally banning nuclear weapons. Chapter two highlighted the importance of treaties in solving various nuclear weapon problems. As such, over the years the world has witnessed the commitment and dedication of many states

in addressing the challenges posed by nuclear weapons. Although not all treaties were as effective as they lacked the commitment of some key actors to render them effective, they have been instrumental in addressing the concerns of the international community. The next step is a treaty that will ban nuclear weapons in efforts of securing international peace, stability and security. The treaty which participants of the humanitarian initiative support will address the threat of the possibility of a nuclear weapon detonation which would cause catastrophic damage to the entire globe and affect all living being.

The humanitarian approach aims to break the deadlock that is experienced in nuclear disarmament by following the model of banning other inhumane weapons, e.g. the Landmine Ban Treaty and the Chemical Weapons Convention. There have been three conferences (in Norway, Mexico and Austria respectively) to promote the humanitarian approach.

4.7 Conferences on the humanitarian impact of nuclear weapons

So far there have been three conferences on disarmament that focused on the humanitarian impact of nuclear weapons use. The first was held in Oslo, Norway in March 2013, followed by the Nayarit conference in Mexico in February 2014 and the Vienna conference in Austria in December of 2014. According to the Reaching Critical Will Organisation (2013 & 2014) these conferences drew various stakeholders such as state actors, experts in the field of nuclear weapons, international organisations as well as nongovernmental organisations that specialise in public health, environmental issues, economic and developmental issues, human assistance, climate change, food security, and risk management.

4.7.2 Oslo Conference

The Oslo conference primarily focused on the effects of nuclear weapons denotation. Discussions were on the impact that it would have on economies, development, human health, the environment and many more. As the first ever conference on the humanitarian impacts of nuclear weapons, the Oslo meeting, which took place on the 4th and 5th of March 2013 was attended by government representatives, UN agencies and other international organisations (11),

and civil society organisations (5). There were 34 African states that took part in the Oslo conference out of a total of 127 states that participated.

Of key note is that the five permanent members of the UN Security Council boycotted the conference and only two states in possession of nuclear weapons (India and Pakistan) attended the conference (Fihn & Acheson 2013). This shows how NWS are reluctant to take all necessary measures that will lead to disarmament. The contributions of all parties (nuclear haves and the have not's) would have been important in pushing the agenda on disarmament forward in this regard. In addition, as the conference aimed to address the dangers that nuclear weapons pose to international peace and security, it would have been right for those members that sit on the Security Council to be involved in addressing the concerns of the international community on the humanitarian consequences of the use of nuclear weapons.

Many of the states that participated agreed that the weapons had devastating consequences and certain states admitted that they were not capable to effectively prepare for a nuclear weapons detonation e.g. Brazil, SA and Zambia. Some states, such as Sudan, Sierra Leone and Zambia called for a ban on nuclear weapons where as other states like Mozambique and Nigeria criticised the role of nuclear weapons in security doctrines and the modernisation of these weapons (Acheson 2013).

The Reaching Critical Will Organisation (2013) further reported on some of the speeches made by participants at the Vienna conference. Some of the African states had the following to say:

Algeria through its delegates acknowledged the importance of the conference as a step forward towards disarmament which relates to/results in international peace and security. Speaking mainly as an African state that has experienced the consequences of nuclear weapon testing, Algeria highlighted the need to learn from Hiroshima, Nagasaki and other cases and find suitable approaches to overcome the effects of nuclear weapons. Algeria also drew attention to concerns pertaining to the lack of preparedness; international cooperation and technical assistance at international, regional and national level in situations relating to nuclear weapons detonation. Nigeria through its delegation voiced its condemnation of nuclear weapons and insisted that the best way of preparedness was through the prevention of a nuclear explosion as the international community is not prepared to address the consequences. Nigeria stated that the biggest threat to

humanity lay in nuclear weapons and it argued that the total elimination of nuclear weapons was necessary as it is the best and more credible guarantee to international security.

Zambia joined in the call for the total ban of nuclear weapons and expressed its concern in that nuclear weapons are not included in the agreement banning WMD yet they are perhaps the most destructive weapons of mass destruction. Zambia also emphasised its commitment to fight against proliferation and join hands with states that are committed to world peace processes. Egypt stressed that nuclear disarmament was top on its priority and foreign policy objectives as exemplified in its promotion of the agenda on the international scene. Because nuclear weapons pose a threat to the survival of humanity, Egypt like Nigeria argued that the best and effective guarantee in eliminating this threat to humanity is the complete elimination of nuclear weapons.

Much of the discourse was centred on the humanitarian consequences of nuclear weapons use which was a shift from the traditional dialogue on the significance of nuclear weapons to state security (Fihn & Acheson 2013). The three key findings of the conference can be summarised as “no state or international body could adequately address the humanitarian emergency caused by a nuclear weapon detonation; that nuclear weapons have demonstrated devastating immediate and long-term effects; and that such effects will not be constrained by national borders, and will have a regional and global impact” (Fihn & Acheson 2013).

Despite the non-commitment by the seven NWS to the humanitarian initiative, Fihn & Acheson (2013) argue that “in the end, the conference was important not only because it provided the space needed to reframe the discourse around nuclear weapons, but also because it was a significant first move towards negotiations of a treaty banning nuclear weapons.”

4.7.3 Nayarit Conference

The Nayarit conference was a follow-up conference to the Oslo meeting. It took place from the 13th-14th of February 2014 in Mexico. The number of states that participated in the second conference was more than the first conference with 146 states compared to the 127 states that attended in the previous year. In summary, some of the key issues that were discussed at the conference as noted by Acheson, Fihn & Harrison 2014 were:

- “Reconstruction of infrastructure and regeneration of economic activities, trade, communications, health facilities, and schools would take several decades, causing profound social and political harm.
- Radiation exposure could result in short and long-term negative effects in every organ of the human body and would increase cancer risks and future hereditary pathologies.
- Today the risk of nuclear weapons use is growing globally as a consequence of proliferation, the vulnerability of nuclear command and control networks to cyber-attacks and to human error, and potential access to nuclear weapons by non-state actors, in particular terrorist groups.
- As more countries deploy more nuclear weapons on higher levels of combat readiness, the risks of accidental, mistaken, unauthorized or intentional use of these weapons grow significantly.
- It is a fact that no State or international organization has the capacity to address or provide the short and long term humanitarian assistance and protection needed in case of a nuclear weapon explosion. Moreover, it would not be possible to establish such capacities, even if attempted.”

As such, many states were explicitly vocal on the need for a total ban including some African states in attendance as Acheson, Fihn & Harrison (2014) highlight: “Tanzania and Nigeria expressed concern that there is no international treaty banning these weapons of mass destruction and stressed the absolute necessity to abolish them from earth. Malawi stated that the conferences in Nayarit and Oslo have cemented the conviction among states that nuclear weapons must be banned once and for all and that it is the duty of states to start the negotiations of a legally-binding ban.”

Of course there were other states at the meeting that also drew attention to the need for nuclear weapons on the international stage, states such as German, Pakistan, India, Canada and the Netherlands highlighted the key role nuclear weapons played during the cold war as their presence had contributed to keeping peace for the international community at that time. However, the call for the need to eliminate nuclear weapons on humanitarian grounds outweighed the remarks made by these few states who justified the existence of nuclear weapons (Acheson, Fihn & Harrison 2014).

4.7.4 Vienna Conference

The Vienna conference on the humanitarian impact of nuclear weapons was the most recent meeting that took place on the 8th and 9th of December 2014. To date, it is the conference that has drawn the most attendance. Austria's Federal Ministry for Europe, Integration and Foreign Affairs recorded that 158 states were in attendance at the conference and of those 158 states, 45 were from the African continent which is a total representation of almost 84% of all African states. As the number of states participating in the conference has grown in the two years since it first started to almost 160 state representatives in the Vienna meeting, this shows that there is an increase in the official government concern, also in Africa about nuclear weapons disarmament (Wilson 2015, p. 50). The conference also attracted a larger number of international organisations (21) and CSO's (53) compared to the previous conferences. At the conference, African states were very vocal on many issues regarding disarmament on humanitarian grounds.

The Reaching Critical Will Organisation (2014) reported on some of the speeches made at the conference, among them was a message at the Vienna conference delivered on behalf of Pope Francis by Archbishop Silvano Maria Tomasi who stated:

“The desire for peace, security and stability is one of the deepest longings of the human heart.... This desire can never be satisfied by military means alone, much less the possession of nuclear weapons and other weapons of mass destruction... peace must be built on justice, socio-economic development, freedom, respect for fundamental human rights, the participation of all in public affairs and the building of trust between peoples.”

Furthermore, the Archbishop argued that “while the focus is often placed on nuclear weapons’ potential for mass killing, more attention must be given to the “unnecessary suffering” brought on by their use. Military codes and international law, among others, have long banned peoples from inflicting unnecessary suffering. If such suffering is banned in the waging of conventional war, then it should all the more be banned in nuclear conflict.”

The Reaching Critical Will Organisation (2014) further reported on some of the speeches made by participants at the Vienna conference; some of the African states had the following to say:

The South African government highlighted that the humanitarian imperative was key to the country's efforts of voluntarily dismantling its nuclear arsenal; therefore its government not only has the legal obligation as the only state to have ever disarmed, but they also have the moral responsibility to contribute to the humanitarian initiative of nuclear weapons disarmament for the sake of future generations. Speaking at the conference, the Nigerian ambassador to Switzerland H.E Humphrey Ummuna Orjiako spoke of the concerns that Nigeria had about the lack of progress in disarmament 68 years after a resolution was carried out by the UN that would foresee a nuclear free world and he emphasised the need for all states to rededicate themselves to the total elimination of nuclear weapons. On the other hand, Mr Aubrey Kabisala, speaking on behalf of the Malawian government, said that the country is in support of all disarmament efforts and willing to cooperate with all relevant stakeholders to achieve the goal of a world free of nuclear weapons.

Furthermore, the Kenyan government shared their concerns on the continuation of some NWS to maintain and modernise their arsenals which poses as a risk of possible use and as the impact of the detonation knows no boundaries or borders, it could certainly also effect Africa. Speaking on behalf of the Zimbabwean government, Ambassador Mutandiro emphasised the shared responsibility that states have be it NWS and NNWS towards global peace and security and retaliated that weapons that threaten humanity should never be morally justified as some states have done. Whereas the Zambian ambassador H.E Sinjela indicated that her country was in full support of the ban of nuclear weapons and welcomed the humanitarian initiative as a step towards that goal, the Reaching Critical Will (2014) organisation reported.

Overall, the conference addressed the devastating implications of nuclear weapons use as in the previous meetings. In addition, the key findings of the Vienna conference were summarised by the chair of the meeting which was reported by the Reaching Critical Will Organisation (2014) namely that nuclear weapon testing has demonstrated that the results of nuclear detonation has an immediate, mid and long term effect. This was from what was witnessed in various regions where tests were carried out that left a bequest of severe health and environmental consequences. Also, it was observed that, for as long as these weapons exist, there is a possibility that they will one day be used intentionally or otherwise therefore it was imperative that the world does away with this threat. The need for security for all was underscored and it was agreed that the only

way of ensuring this security was via a complete elimination of nuclear weapons. In addition, many of the delegations agreed that a legal framework should be pursued to achieve total elimination of nuclear weapons including a nuclear weapons convention to outlaw nuclear weapons.

4.8 Role of African states and other stakeholders in the humanitarian initiative

The NNWS can address the problem of nuclear weapons as from all the states in the world (194) only nine have nuclear weapons; therefore NNWS have the legitimacy as well as the strength in numbers to take action and call for a universal ban of nuclear weapons. The responsibility should not be left to the nuclear haves as thus far they have not made progress in general and complete disarmament but only decreasing the numbers of their arsenals and advancing them to be more destructive.

Kwame Nkrumah, in 1960, speaking at a conference for Peace and Security in Africa in Accra Ghana was quoted by Broodryk (2014) as saying, “We in Africa wish to live and develop. We are not freeing ourselves from centuries of imperialism and colonialism only to be maimed and destroyed by nuclear weapons. We do not threaten anyone and we renounce the foul weapons that threaten the very existence of life on this planet.” African states have shown their dedication to the NPT through their commitment not to produce or use nuclear weapons. Further through the Pelindaba Treaty they secured the continent to be a NWFZ and as such, they have fulfilled their obligations. NWS on the other hand have shown little effort in keeping their end of the bargain (of the NPT) of meaningful nuclear disarmament.

African states play a significant role in international negotiations as exemplified through their contribution to the negotiations of the banning of anti-personnel landmines and cluster munitions. Such negotiation capabilities and the successful turning of the continent to a NWFZ, give African states legitimacy to call for universal nuclear disarmament. Africa can contribute in the shifting of the emphasis from the aspects of state security to that of the consequences of nuclear detonation. The AU can be a key vehicle in engineering Africa’s contribution to the humanitarian approach to disarmament (Swart, 2013, p. 213-215). Moreover, Swart (2013:215) argues that “any state that actively proposes a prohibition on nuclear weapons must be seen as

acting in the best interests of humanity.” This therefore gives African states the opportunity to play an active role similar to one they carried out when they negotiated the Pelindaba Treaty, by collectively taking a stand to ban nuclear weapons completely. They will be acting not only in the best interest of the continent, but in the interest of all humanity.

Organisations such as ISS, ILPI and the ICRC have been very active and influential in pushing the discourse of the humanitarian approach. In 2011 the Council of Delegates of the International Red Cross and Red Crescent Movement appealed to all states to make sure that nuclear weapons are never used again. The ICRC was present and made a statement during the Oslo, Nayarit and Vienna meetings, noting that the catastrophic humanitarian consequences of nuclear weapons should be no longer ignored. Likewise, according to Ms Swart (Interviewed 06/03/2015) the ICRC welcome the fact that, for the first time in nuclear age, states seem to have expanded the discourse on nuclear weapons and are focusing on their humanitarian impact. The new information from the conferences on the humanitarian initiative about health and environmental effects and the absence of an adequate assistance capacity in most states should prompt a reassessment of nuclear weapons by all states in both legal and policy terms.

Ms Swart further argues that “the ICRC believes that...the risk of nuclear weapon use and ensuring their elimination through a legally binding international agreement is a humanitarian imperative. The ICRC call on all states to establish a time-bound framework to negotiate such a legally binding agreement and to consider the form that such an agreement should take.” Thanks to these conferences on the humanitarian impact of nuclear weapons, the global community now has a much clearer understanding of the threat that nuclear weapons pose if ever used intentionally or accidentally detonated; and the effects such a detonation would have on people, society and the environment. These matters have given African states a framework to contribute to an approach on disarmament that has a history in Africa’s response to nuclear weapon dating back to Kwame Nkrumah’s interventions in the 1960s.

4.9 Summary

The evidence provided in this chapter has shown that nuclear weapons are indeed the most destructive, inhumane and indiscriminate weapons ever created. Not only do they have the

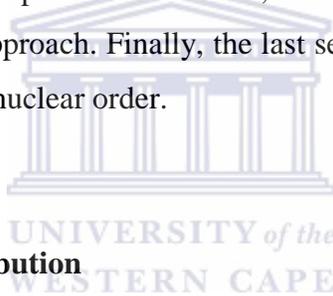
potential to kill millions of civilians, their use also have devastating short and long term effects. The evidence has also shown that the humanitarian approach to disarmament works to the advantage of humanity in general as it is derived from the rationality of positive sum games. As such this approach is more appealing to the wider community. The responsibility to call for disarmament therefore rests with all states. Not one particular state is safe from experiencing the consequences of a detonated nuclear weapon nor prepared or equipped to handle an incident of such magnitude. Providing humanitarian assistance in such a scenario would be inadequate and as a result there is need to eliminate the threat of such an event from ever taking place through disarmament and the eventual total elimination of nuclear weapons which the humanitarian initiative advocates. African states have been vocal in supporting this initiative.



Chapter Five: Analysis and Findings

5.1 Introduction

This chapter focuses on using the evidence gathered and the analysis in the previous chapters to explain Africa's contribution to the humanitarian initiative as per the following research question: "How has the Pelindaba Treaty contributed towards the humanitarian approach of nuclear weapons disarmament?" To start off, this chapter will give a brief description of the contribution as pertaining to the research question and a distinction between a direct and an indirect contribution. This will then be followed by an assessment of Africa's contribution to the initiative which will be explained in six sections relating to the sub questions listed in chapter one, namely: The first section will explain the Treaty's contribution to the humanitarian approach to nuclear weapon disarmament, the second section deals with the Treaty's contribution to overall nuclear weapons disarmament, the third section will explain Africa's contribution to the humanitarian approach. Finally, the last section will explain the limitations to Africa's engagement in the global nuclear order.



5.2 Direct and indirect contribution

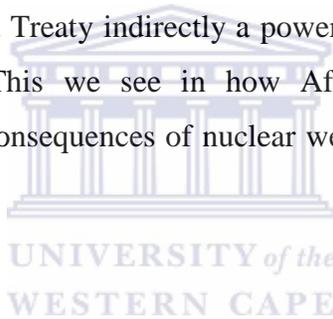
As the main purpose of this research is to assess Africa's contribution to the humanitarian approach of nuclear weapon disarmament, this section will clarify the difference between direct and indirect contribution. Direct contribution will focus on the actual actions undertaken by Africa in advancing the humanitarian cause. So these actions could be in ways such as Africa's engagements in discussions directly relating to the humanitarian initiative as well as other efforts undertaken to push the humanitarian agenda. Indirect contribution deals with the actions that were taken to serve a different purpose but the results of which can also be linked to or have impacted on the humanitarian approach. Further to this, indirect contribution will also be in form of the discursive groundwork before 2013 that allowed the initiative to manifest as an approach to nuclear disarmament.

5.3 The Pelindaba Treaty and the humanitarian approach to disarmament

The Pelindaba Treaty did not contribute directly to the humanitarian initiative of nuclear weapon disarmament. The Pelindaba Treaty was signed at time when the world was calling for disarmament of nuclear weapons based on military grounds and resulted in African states entering into a Treaty that would forestall the use of nuclear weapons on African soil. This Treaty as at the time it was signed focused only on disarmament of nuclear weapons on military grounds and territorial security amongst African states. The Pelindaba Treaty opened for signature in 1996 which was 14 years before the humanitarian initiative was launched in 2010. Furthermore, the Treaty came into force in 2009 which is a year before the humanitarian approach gained ground. Owing to the time difference between the establishment of this Treaty and the call for disarmament on humanitarian grounds, the Pelindaba Treaty has not directly contributed to the humanitarian approach of nuclear weapons disarmament.

The Treaty however did contribute indirectly to the humanitarian initiative as Mr Michiel Combrink (11/12/2014) notes that despite the Treaty's inability to contribute directly to the humanitarian initiative; the Treaty still made an important contribution towards the achievement of a world without nuclear weapons, which is the key objective of the humanitarian initiative towards nuclear weapons disarmament. Also, like with other treaties such as the NTP where humanitarian concerns were central to the drafting of the treaty, even though the text of the Pelindaba Treaty does not explicitly address the humanitarian concerns, it does not imply that the negotiations of the Treaty itself were not influenced by humanitarian concerns of nuclear weapons use. This is supported by Mr Michiel Combrink (11/12/2014) who argues that state parties to the Pelindaba Treaty are able to support any effective measures in the implementation of the nuclear disarmament obligations and commitments of the possessors of nuclear weapons. Beyond strict non-proliferation obligations and the commitment towards a world without nuclear weapons, the Pelindaba Treaty also emphasizes and commits state parties to high levels of nuclear safety and nuclear security, which in itself contributes to preventing a humanitarian catastrophe resulting from the use of nuclear energy for peaceful purposes. It therefore can be argued that the Pelindaba Treaty contributes indirectly to the humanitarian initiative of nuclear weapons disarmament

In addition, the Pelindaba Treaty also indirectly contributed to prepare the ground for this approach, because NWFZs are among other concerns based on concerns about the humanitarian consequences of nuclear weapon detonation, and the Pelindaba Treaty is no different – it refers to the Cairo and other declarations that are explicit about humanitarian concerns. Furthermore, it helped establish a moral high ground for Africa that makes its support for the humanitarian approach more real/sincere than for example India and Pakistan who have nuclear weapons. The whole continent has denounced these weapons; which brings us to the point that the Pelindaba Treaty did consolidate a unanimous position on nuclear weapons, namely that there are no place for them and that they contribute to insecurity rather than security. Not only are they negative for state security, but the basis on which Africa denounced nuclear weapons can be related to human security, e.g. the fact that the Pelindaba Treaty includes denouncing the dumping of nuclear waste on African territory, which is negative for people's health. This relates to the humanitarian approach and makes the Pelindaba Treaty indirectly a powerful foundation for Africa's support of the humanitarian approach. This we see in how African countries participate in the conferences on the humanitarian consequences of nuclear weapons. So the Pelindaba Treaty set the stage for this participation.



5.4 The Pelindaba Treaty and nuclear weapons disarmament

Africa's past role in the nuclear non-proliferation and nuclear disarmament regime has predominantly focused on the nuclear weapons capabilities of the Apartheid Regime in South Africa. According to Mr Michiel Combrink (Interviewed 11/12/2014), several African leaders condemned the development of such capabilities by the regime, which threatened fellow African countries and the continent as a whole. Although the efforts to establish a nuclear-weapon-free zone in Africa was taken a long time ago by the Organisation for African Unity (OAU), this only came to fruition after the decision by South Africa to abandon its nuclear weapons and to join the NPT as a non-nuclear-weapon State in 1991. The ability for South Africa to dismantle their nuclear weapons was a major contribution to the call for disarmament as not only did it decrease the number of states with nuclear weapons and strengthen the disarmament cause but it also made it possible for the African region to become a NWFZ. Ms Sarah Swart (Interviewed 06/03/2015) also argues that with South Africa being the only state in the world to have

voluntarily dismantled its nuclear weapons program, South Africa, the sub-region and the whole continent have the moral authority, even responsibility to stand for nuclear disarmament.

Moreover, geographically, five regions now have denounced nuclear weapons in their zones (of which Africa is part of) making it a total of 115 states that are party to NWFZs. In addition, a total of 146 states are against nuclear weapons and in support of a treaty to ban these weapons as ICAN (n.d) notes. This implies that out of the 196 states in the world the majority of them (146) are in favour of seeing a world free of nuclear weapons and African states are among this majority.

The signing of the Pelindaba Treaty and of course other Treaties exemplifies the commitment of states to the liberal institutionalism theory as their efforts contributes towards securing regional and international security. As it was highlighted in chapter one where Devitt (2011) noted that one of the arguments of liberal institutionalism is states need to collaborate even if it is to an extent of giving up some of their sovereignty if there is to be peace in international affairs. This shows Africa's determination towards that goal as the continent was able to create an "integrated community" in a bid to securing regional and international security.

5.5 Africa and the humanitarian initiative to nuclear weapon disarmament

Since the inception of the humanitarian approach to disarmament, African states have contributed greatly to the initiative. Africa has helped in strengthening the approach in various ways. In terms of numbers, in the three conferences on the humanitarian impact of nuclear weapons use that have taken place (in Oslo, Nayarit and Vienna), it was witnessed that the number of African states increased from 34 in the first meeting to 45 in the last meeting. This alone indicates the determination and commitment by these African states to the initiative. It only requires the remaining nine states to participate in the conferences on the humanitarian impact of nuclear weapons for there to be a unanimous stand from an African state perspective which can be achieved in future conferences as they did with their contribution towards the Pelindaba Treaty.

Looking at their contribution in terms of engagements in the actual debates and gatherings, many African states have been explicit and very vocal about their concerns of the existence of nuclear

weapons and the need for a legally binding framework that will ban nuclear weapons there by eliminating them completely from existence. This is so despite their allegiances with some NWS, so to be able to speak out on the international scene to voice their humanitarian concern of nuclear weapons use without fear of that impacting their relations with some key NWS who are also major donors to most of these African states is commendable.

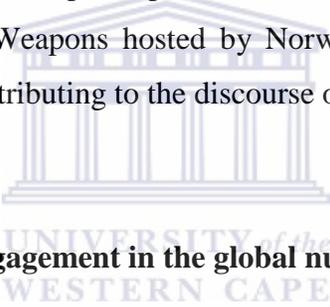
In terms of the roles played by non-state actors in the humanitarian initiative, many African CSOs have been at the fore in contributing towards strengthening of the initiative. Like with the increase in numbers of states participating in the conferences, the numbers of CSOs has also increased based on a 2014 report by Austria's Federal Ministry for Europe, Integration and Foreign Affairs. This increase can be attributed to efforts of many CSOs from the African continent such as the ISS, United Nations Economic Commission for Africa, African universities, and some international human rights organisations such as the Red Cross, just to mention a few who have attended the conferences. Their input and activism based on the research they conduct and experiences have contributed to the call made at the conferences for a ban on nuclear weapons.

As mentioned in chapter three that the issue of nuclear weapons is not new on the African continent, which has resulted in Africa engaging in various dialogues on the topic. Africa has proven to be an influential block in other processes towards the prohibition of weapons that cause excessive injury or that are indiscriminate, such as anti-personnel mines and cluster munitions. As such, Africa's engagement in the ongoing debate about possible policy responses to the existential threat posed by nuclear weapons is therefore valuable. The humanitarian focus has allowed Africa to recognize that it will be equally, if not more, affected by a nuclear war. The issue of nuclear disarmament is therefore not only part of some general global goal towards international peace and security, but an issue that has a direct impact on African countries which should remain high on Africa's continental agenda argues Mr Michiel Combrink (Interviewed 11/12/2014).

Africa can play a critically important role in moving the humanitarian initiative forward, but this will require consolidation and leadership. According to Mr Torbjorn Graff Hugo (Interviewed 19/11/2014), the 54 African states need to agree on what they want out of it in terms of political response, and to set up a structure that allows for the effective promotion of this goal. A declaration along the lines of the Livingstone declaration (on cluster munitions) is one way to go

about it. Another is for a small core group of African states to take up a leadership role that others can follow.

South Africa and a few African states have been active participants in the humanitarian initiative since its inception. Mr Michiel Combrink (Interviewed 11/12/2014) highlights that South Africa was one of the 16 countries that delivered the first joint statement on this issue at the NPT's Preparatory Committee for the 2015 NPT Review Conference. At the 2013 NPT Preparatory Committee, South Africa delivered a joint statement on behalf of 80 State Parties – the largest cross-regional group to ever deliver a statement during any NPT meeting. South Africa also associated with the statements delivered at the UN General Assembly First Committee sessions in 2012 (supported by 35 States), 2013 (supported by 128 States) and 2014 (supported by 156 States). In addition, many African states such as Mozambique, Nigeria, Sierra Leone, Sudan, South Africa and Zambia have also participated in the International Conferences on the Humanitarian Impact of Nuclear Weapons hosted by Norway in 2013, Mexico in 2014, and Austria in December 2014 thus contributing to the discourse on disarmament.



5.6 Limitations to Africa's engagement in the global nuclear order

However, there are limitations to Africa's contribution in that although most African countries participate in these conferences, not all are equally vocal and activist in pushing this approach. The reasons for this as other security issues taking preference and some African countries being aligned to NWS. So it is the 'usual suspects' (SA, Nigeria, etc.) who invest diplomatic resources in supporting this approach. More can be done to take advantage of Africa's history in the nuclear order and its establishment of the Pelindaba Treaty. Mr Hugo's argument is of great relevance, namely that the continent has to find a political aim in this area that they want to achieve and a strategy to achieve it.

Another limitation to Africa's engagement is that the nuclear weapons issue is overshadowed by other security issues in Africa that seem more pressing. Africa's involvement in the call for universal disarmament still remains a challenge. Only a select few African countries advocate for disarmament especially on the grounds of humanitarian consequences outside the three conferences that have taken place. After joining the NPT and the Pelindaba Treaty, most African

states appear to have taken a follower's role in the drive for a world free of nuclear weapons. It could be that by signing these treaties the nuclear weapons issue ceased to be of great concern to these states; therefore the international community only witnesses the efforts of a select few African states actively engaging in matters of nuclear weapons especially in relation to disarmament. Also, as was noted in chapter three, it seems like this passiveness is also linked to the belief that nuclear weapons are an "issue" for the first world countries rather than African states struggling with issues, such as poverty. This limitation on its engagement has led to the continent as a whole not being able to push the humanitarian initiative of nuclear weapon disarmament as far as is potentially possible. After parties to the Pelindaba Treaty secured the region, most states seem to be lacklustre to further contributions to disarmament even in pushing the humanitarian agenda.

Over the years, it seems like people have become complacent when it comes to the issue of nuclear weapons and the threat these pose. Wilson (2015, p. 51) refers to past events by highlighting how in the 1960s, hundreds of thousands of people protested against nuclear weapons while in the 1980s millions of people across the world also protested against the existence of nuclear weapons. However the situation has changed especially in the 21st century where only a select few organisations such as ICAN have taken up the task of protesting while it seems the rest of the international community is complacent.

Wilson (2015, p. 51) further highlights how history has shown that mass protests against nuclear weapons matter as it has led to the limitation of nuclear weapons in the 1960s and 1980s. Therefore, if states were to take up similar measures collectively in the call for disarmament and total elimination, then the world would witness a visible change. As such, Africa should take the lead in this drive as the efforts of 54 states can bring more pressure on the NWS.

According to Mr Michiel Combrink (Interviewed 11/12/2014), national perspectives in Africa on nuclear weapons differ considerably. For many African countries the illicit trafficking of small arms and light weapons today represents a greater threat to peace and security on the African continent than weapons of mass destruction as was pointed out in chapter four by Swart (2013). For others who were the victims of nuclear weapons tests conducted by one of the NWS on the African continent, the interest in global effort towards the elimination of the threats posed by these weapons was of direct national interest. Whilst the nuclear weapons capabilities of the

Apartheid Government elicited a continental response prior to the conclusion of the Pelindaba Treaty. Today North Africa remains most directly concerned about the threat posed by unsafeguarded activities and possible nuclear weapons programmes in the Middle East region. These countries, particularly those in the Arab Group, have remained active in calling for a nuclear-weapon-free Zone in the Middle East and for Israel to join the NPT as a nuclear-weapon State and to place all its nuclear activities under comprehensive International Atomic Energy Agency (IAEA) safeguards (Mr Michiel Combrink Interviewed 11/12/2014).

There is need for Africa's involvement in the humanitarian approach, because it has legitimate ground to call for universal nuclear disarmament and has first-hand experience pertaining to various humanitarian issues as a result of human security threats. African states should thus coordinate closely with other NWFZ regions, such as Latin America. Altogether, 115 states are parties to NWFZ treaties. This is a critical majority of states. This will give them more political clout and potential in the push for the humanitarian agenda, adds Mr Torbjorn Graff Hugo (Interviewed 19/11/2014).



5.7 Conclusion

Africa has contributed in general to nuclear disarmament over the course of history through its pursuit of a nuclear weapons free world (OAU Cairo declaration), the example that SA set, the Pelindaba Treaty and now participating in the conferences on the humanitarian consequences of nuclear weapons use.

African states have the moral right to call for a ban on nuclear weapons. Despite securing the continent from a possible nuclear attack, the impact of a nuclear weapon going off elsewhere in the world would still have a significant effect on the African continent regardless. Therefore, the absence of nuclear weapons on the continent should not make the issue a matter of less importance for African states, rather it should make Africa more driven to see the whole world free of nuclear weapons through collectively pushing for the ban of nuclear weapons.

These findings above consequently support the claim stipulated in chapter one that the Pelindaba Treaty contributes to strengthening the humanitarian initiative. Even though it was indirect it can

be argued that the Pelindaba Treaty strengthened the initiative of disarmament on humanitarian grounds. Also, the Treaty has contributed greatly to disarmament efforts in general, which is the ultimate goal of the humanitarian initiative. And moreover the engagement of the majority of African states in the conferences on the humanitarian impact of nuclear weapons is a clear indication of Africa's contribution in strengthening the initiative.



Chapter Six: Conclusion and Recommendations

6.1 Introduction

This research relied on the available literature on nuclear weapons, nuclear disarmament, NWFZs, IHL, humanitarian impacts of nuclear weapons, and that of the history of Africa and nuclear weapons seeking to make an assessment in understanding Africa's contribution to the humanitarian approach of nuclear disarmament. The research sought to understand the contribution that Africa has made in strengthening the humanitarian approach in relation to the Pelindaba Treaty. To achieve this assessment, it reviewed the literature on this contribution at international and national levels. The key issues which emerged from the literature were considered and then data was collected in relation to the Treaty's contribution to the initiative as well as the overall contribution by Africa and how its contributions have strengthen the initiative. Based on the analysed data above, the following section will present a summary of the findings and recommendations.



6.2 Conclusions

Africa as a continent is in support of nuclear disarmament. This support has been demonstrated through its contribution to various nuclear disarmament initiatives such as:

- Establishing the continent as a nuclear weapon free zone; this initiative has proved to be a direct contribution to nuclear disarmament efforts. As a continent, African states have collectively denounced nuclear weapons on their territory, with the assistance of South Africa as the only state to have voluntarily disarmed its weapons. It has placed the continent in the forefront as champions of nuclear disarmament with South Africa as a good example that other states (nuclear haves) can learn from;
- Through its participation in the conferences on humanitarian consequences of nuclear weapons. This research has shown that since the inception of the humanitarian approach to disarmament, African states have contributed greatly to the initiative in terms of number of states participating in the conferences on the humanitarian impact of nuclear weapons use. In the three conferences that have taken place between 2013

and 2014 (in Oslo, Nayarit and Vienna), it was witnessed that the number of African states increased from 34 in the first meeting to 45 in the last meeting. This alone indicates the determination and commitment by these African states to the initiative therefore Africa has helped in strengthening the humanitarian approach. The continent through the Pelindaba Treaty also contributed to nuclear disarmament on humanitarian grounds as the Treaty serves as an important contribution towards the achievement of a world without nuclear weapons, which is the key objective of the humanitarian initiative on nuclear weapons. Beyond strict non-proliferation obligations and the commitment towards a world without nuclear weapons, the Pelindaba Treaty also emphasizes and commits state parties to high levels of nuclear safety and nuclear security, which in itself contributes to preventing a humanitarian catastrophe resulting from the use of nuclear energy, even if this is an indirect contribution.

- Directly contributing to disarmament efforts at multilateral forums by way of advocating for total elimination of nuclear weapons at international arenas. Though Africa as a continent has not unanimously developed and pushed a position to support disarmament of nuclear weapons certain nations within the African continent have taken this challenge upon themselves as a call to duty and responsibility. Countries like South Africa, Nigeria, Zambia and Egypt are notable countries on the African continent that have taken the lead to champion this disarmament cause. In other words, these African states have championed the course for disarmament of nuclear weapons individually, and sometimes as a group in different international groupings. However, Africa as a whole needs to put more effort in furthering the drive for the prohibition of nuclear weapons, as a unanimous position of 54 countries carries more weight than that of just a select few to combat the challenge of low levels of awareness about the humanitarian consequences of nuclear weapons.
- By signing the various other treaties that limit the spread of nuclear weapons such as the NPT and the CTBT.
- In addition, through its compliance to IAEA regulations. Despite having abundant uranium deposits, African states only mine uranium for peaceful purposes.

In sum, Africa has contributed directly to strengthening the call for nuclear disarmament in general through its history and through the Pelindaba Treaty, but as for the humanitarian approach, the Pelindaba Treaty has contributed indirectly to this approach by creating the foundation for Africa's current support of this approach.

6.3 Recommendations

Africa should be commended for its efforts towards disarmament. "Africa, which has been declared a nuclear weapons free zone through the adoption of the Pelindaba Treaty; Africa which can claim to have the only country that has ever voluntarily disbanded its nuclear weapons programme" (Swart 2013, p. 197). The continent has come a long way to make such influential contributions in terms of pushing the agenda for disarmament. Considering the various challenges they faced such as lack of resources and the ability it took to convince 54 states, all with various political and military ambitions to be signatories of the Treaty, their contribution to disarmament is commendable.

A call for total elimination of these weapons of mass destruction is important as there is always a risk of the nuclear weapons being used as long as they exist. There is need for the international community to come up with an international legally binding instrument for elimination such as a law that will prohibit the possession and use of nuclear weapons, which will be one way of ensuring international peace and security from the threat of nuclear weapons. More so, this law should be able to check erring nations as well as bring them to book when violated.

The humanitarian initiative as an approach to disarmament should be viewed as a new opportunity for the possibility of total elimination of nuclear weapons. To strengthen the initiative, an African state could offer to host a follow up conference to the Vienna conference. Giving an African state the opportunity to host a conference of this magnitude will increase Africa's level of participation and the importance awarded to nuclear disarmament by the continent. .

To also show total support for disarmament based on humanitarian grounds, African states could present a more unified position at future meetings. This could be through a treaty banning

nuclear weapons on humanitarian grounds similar to the conventions banning chemical and biological weapons as well as landmines.

Moreover, those African states that are yet to ratify the Pelindaba Treaty could do so to demonstrate their total commitment to nuclear disarmament. It is important that African states need to work together and that the powerful states need to take the lead. African states can work with other groups such as the NAC or with other NWFZ zones in supporting the humanitarian approach; it can support the approach in more international forums, UNGA, UNSC, Board of directors of the IAEA, *etc.*



We still await for a shift from nuclear weapons free zones to a nuclear weapons free world where no one can possess such weapons, with no exceptions.

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