

African Nuclear Weapon Technology: A Search for Nigerian Perspective

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Abstract

Right from when nuclear research began, discovered, developed and deployed, it brought to the fore the destructive capabilities of this latest discovery, while its peaceful means was also sought years later. Many countries of the world, including the then apartheid South Africa, either began to develop their own nuclear weapon program or invested heavily into research for the development or acquisition of nuclear technology. Some developed countries, notably the United States, Union of Soviet Socialist Republic {USSR} and Britain went into more research, others such as France, China and Japan, though got their nuclear breakthrough late between the 60s and 80s, eventually joined the nuclear club. A few African Countries, notably, South Africa, had experiences and took positions with respect to nuclear weapons technology, while other countries such as Egypt, Algeria, Libya and Nigeria also made attempt at various times. Therefore, the overall objective of this study is to explain the rationale for African desire at acquiring nuclear technology, whether for military purpose like other countries or for a peaceful means and why the continent has failed to achieved this noble desire.

Keywords:-nuclear weapon, nuclear proliferation nuclear technology, radioactivity, explosive device

Introduction

The advent of the nuclear age coincided with the second world war {Palmer & Perkins, 2007}, especially with the bombings of two Japanese cities of Hiroshima and Nagasaki on August 6 and 9, 1945 respectively {Brookings Institution,1998}. Immediately, many countries, notably USSR went into research to develop more sophisticated nuclear weapons, such as the hydrogen bomb {Waltz, 2000; Palmer & perkins, 2007} for military purposes only. To justify this, several reasons were given with the hope that it will deter aggression {Halperin, 1972}, yet aggression persist everyday; protect territorial integrity, ensure superiority and prestige which will in turn secure allies and alliances from all parts of the world, and to counter perceived threat {Waltz, 2000}.

The republic of South Africa began its nuclear weapon program in 1948 after given permission to South Africa Atomic Energy Commission {SAAEC} to oversee the country's uranium mining and industrial trade and eventually conducted her first test, codenamed Operation Phenix in 1979 {http://en.wikipedia.org/wiki/South_Africa_and_weapons_of_mass_destruction}. Egypt followed suit in 1959 {Federation of American Scientists, 2005}, Libya in the 1970s {Federation of American Scientists, 2011}, Nigeria began investing into nuclear research in 1975 {Emmanuel, 2011}, while Algeria launched its nuclear program in the early 1980s {Federation of American Scientists, 2011}. Despite these assurances, citizens begin to asked what has happened and why has the continent lagged behind other continents in its quest to be a major nuclear hub.

CONCEPTUAL CONSIDERATIONS

Nuclear Weapon:- generally the same as atomic weapon, any bomb or other destructive material, often consider together with the appropriate means of delivery, obtained through the manipulation of the enormous power contained within the atomic nuclei, a fundamental power of the universe, releasable through N...fission and absorbable through N fusion, the latter, as with the hydrogen bomb, which is obtained in a fusion process transforming the hydrogen nuclei into a helium nuclei. Like the bomb themselves, the delivery system have achieved enormous sophistication in speed, maneuverability, miniaturization, concealment, etc. Cold war or no cold war, rapprochement or no rapprochement, the fact that some nation still preserve and cultivate Nuclear Weapons {N.W.s} create the enormous danger for their future use in some wise or civilized way. There are battlefields NWs named pre-strategique by the French, which are intended for use in battlefield as an adjunct to conventional weaponry, while there are also hand held N. grenades, igniting fears of their accessibility to nuclear terrorists {Igwe, 2007:298-299}. For John May, a nuclear weapon is a nuclear warhead folly integrated with its delivery system. They are further classified as strategic, theatre, or tactical, depending upon their intended military function. It is a device in which most or all the explosive energy is derived from either uncontrolled, fission, fusion or a combination of the two processes {May, 1989:45}.

Nuclear proliferation:- Specifically, the spread of nuclear weapons, and more generally, the spread of nuclear technology that might be put to military use. Most concern is given to "horizontal proliferation", the spread of nuclear weapons to states not yet possessing them. "Vertical proliferation", the increase in number or dispersion of nuclear weapons by nuclear weapon states {Mclean & McMillan, 2003:377-378}.

Radioactivity:- it is a naturally occurring phenomenon in which certain atoms change their structure. The greatest amount of radiation to which we are exposed comes from natural sources- space, rocks, oil, water, and even from the human body itself. The ones that result from human activities-medical application of radioactive substances, fallout from atmospheric nuclear test, discharges from nuclear industry and radioactive waste. The effect of all these can be divided into those which affect the individuals who are exposed and those which affects their descendants. Somatic effects are those which appear in irradiated individuals. This includes leukemia and cancer. Hereditary or genetic effects are those which arise in a subsequent generation. Thus, there are 3 principal effects which radiation can have on cells: {1} the cell may be killed, {2} the cell multiplication may be affected, resulting in cancer and {3} damage may occur to cells in the ovary or testes, leading to the development of a child with an inherited abnormality {May, 1989:26-31}.

Nuclear Explosive Device:- it is an assembly of nuclear and other materials and fuses which could be used in a test, but generally cannot be reliably delivered as part of a weapon {May, 1989:26-31}.

NUCLEAR WEAPONS TECHNOLOGY: THE AFRICAN STATUS

According to the International Atomic Energy Agency {IAEA}, Algeria, Egypt, Ghana, Libya, Morocco, Nigeria and South Africa, currently have operational nuclear research reactors. In addition, South Africa has two nuclear power reactors both intended for civil nuclear energy purposes. At present, South Africa is the only country in Africa with nuclear power reactors { Broodryk & Stott, 2010}.

SOUTH AFRICA

The republic of South Africa's ambition to develop nuclear weapons began in 1948 after giving permission to South Africa Atomic Energy Commission {SAAEC}, the forerunner corporation to oversee nation's uranium mining and industrial trade. In 1957, South Africa reached an understanding with the United States after signing fifty years collaboration under the U.S. sanctioned programmed, the atom for peace. The treaty concluded the South Africa acquisition of a single nuclear research reactor and an accompanying supply of the highly enriched uranium fuel located in pelindaba. On September 22 1979, South Africa conducted her first ever nuclear test codenamed, operation phenix. From the 1960s to the 1980s, South Africa pursued research into weapons of mass destruction including nuclear, biological and chemical weapons and came out with the assemblage of six nuclear weapons. However, with the fear of South Africa's forces coupled with the threat of domino effect in favour of communism, represented in South Africa by Cuba proxy forces in Angola and threatening Namibia. In 1988, South Africa signed the tripartite accord with Cuba and Angola which led to the withdrawal of South Africa and Cuba troops from Angola and independent Namibia. Another possible motivation for eliminating nuclear weapons in South Africa was probability of an African National Congress {ANC} government in the near future. The ANC was listed as a terrorist organization by the USA, and it had a long history of cooperating with leaders such as Muammar Gaddafi and organization such as Palestinian Liberation Organisation {PLO}. The preemptive elimination of nuclear weapons would make a significant contribution towards peace, stability and progress, improving South Africa's relation with and restoring credibility in regional and international politics. Before the anticipated change over to a majority elected ANC government in the 1990s, the South Africa government stood down its nuclear weapons programme in 1989. All the bombs {six constructed and one under construction} were dismantled and South Africa acceded to the Non-proliferation Treaty {NPT} when her ambassador to the United States, Harry Schwarz signed the treaty in 1991. On 19 August 1994, after completing its inspection, the IAEA confirmed that one partially completed and six fully completed nuclear weapons had been dismantled. As a result the IAEA was satisfied that the South Africa's nuclear programme had been converted to peaceful applications. Following this, South Africa joined the nuclear supplier group {NSG} as a full member on 5th April 1995. South Africa played a leading role in the establishment of the African Nuclear Weapon Free Zone {ANWFZ}, the Treaty of Pelindaba in 1996, becoming one of the first members in 1997. South Africa also signed the Comprehensive Test Ban Treaty {CTBT} in 1996 and ratified it in 1999 {http://en.wikipedia.org/wiki/south_africa_and_weapons_of_mass_destruction}. However, it is worthy to be mentioned at this juncture that South Africa still respect the atom for peace treaty she signed with the United States in 1957. Though there are no more traces of nuclear weapons in South Africa today, the nuclear material she currently possesses is for peaceful purposes {nuclear energy} for electricity generation, better vegetable and animal lives and develop the society at large. I can also conclude here that the two events that led to dismantling of South Africa nuclear weapons, vis, labeling of ANC as a terrorist group, and the urgency with which the country's ambassador to the USA signed the NPT was deliberately meant to prevent and arm-twist the nation's incoming black government from having nuclear weapons for military purposes.

ALGERIA

The first French nuclear weapon tests, both atmospheric and underground, were conducted in Algeria between 1960 and 1966. After independence, Algeria launched its nuclear programme in the early 80s and established the

Commissariat for New Energy to develop nuclear energy. It was speculated that Algeria may have been developing a nuclear weapons programme in cooperation with Argentina and China in the 1980s and the 1990s, which presumably was motivated by the desire to counter a passive threat from Libya. However, the IAEA found little evidence of a weapon's programme. It was confirmed that Algeria purchased a research reactor from Argentina in 1985, prior to Argentina's accession to the NPT in 1995; and China has been Algeria's main supplier of nuclear technology since a secret agreement between the two countries was signed in 1983. In 1992, Algeria accepted IAEA safeguards under pressure from the United States. Algeria joined the NPT in 1995 after rejecting for decades on the principle that, "Algeria should not have to renounce a nuclear weapons programme when other nations could continue with theirs" {Federation of American Scientists, 2011}. There are currently two operational research reactors in Algeria, both intended for civilian nuclear energy purposes. The IAEA has provided research assistance to Algeria relating to the possibility of adopting nuclear energy and a means of generating electricity {Broodryk & Stott, 2010}.

EGYPT

Egypt has not engaged in any significant efforts to develop a nuclear weapon capability. Instead of developing nuclear weapons, Egypt has focused on increasing conventional forces, and it has neither ratified the Biological and Toxin Weapons Convention {BTWC} nor the Chemical Weapons Convention {CWC}. Egypt did initiate a nuclear programme in 1959 and acquire a nuclear research reactor from the Soviet Union in 1961. However, this reactor was small and not capable of producing a significant amount of weapons grade material. Egypt discarded its nuclear ambitions after the defeat to Israel in the six day war in 1967 and signed the NPT the following year. Still, Egypt delayed ratifying the NPT until 1981, presumably because the government had evidences that Israel had initiated a nuclear weapon programme {Federation of American Scientists, 2005}. Egypt has not signed the CTBT, and its signature is required for the treaty to enter into force. Egypt has linked its lack of ratification of the CTBT to Israel's nuclear stance, and has expressed that it will not ratify the CTBT until Israel join the NPT {Daily Times, 2005}. According to the IAEA, Egypt is currently one of the seven African countries that possess nuclear research reactors. Like Algeria, Egypt has received research assistance from IAEA regarding the adoption of nuclear energy as a means of generating electricity {Broodryk & Stott, 2010}. Egypt expanded this initiative to endorse not only nuclear weapons, but all weapons of, mass destruction, thus including biological and chemical weapons {Federation of American Scientists, 2005}. Egypt is central in the ongoing process of possibly creating a weapon of mass destruction free zone in the Middle East and a conference was scheduled for 2012 in Finland in which Egypt was expected to play a leading role.

LIBYA

Libya ratified the NPT in 1975 and five years later, it reached an agreement with the IAEA on international inspections of its nuclear installations. Despite this, President Muammar Gaddafi repeatedly proclaimed in the mid 1970s that Libya was determined to acquire nuclear weapons. This desire was presumably motivated by Gaddafi's conviction that Israel had acquired nuclear weapons. Over the following decades, Libya cooperated with various states in order to assemble the necessary technology and resources to acquire nuclear weapons. As a result, may have had the theoretical capability to develop certain nuclear weapons. British intelligence revealed in 2002 that Libya was involved in the Pakistani nuclear Scientist A.Q. Khan's network responsible for illegally delivering nuclear weapons technology to non nuclear states including North Korea in the early 2000s, and that Khan's network was central to all aspect of Libya's nuclear programme {Federation of American Scientists, 2011}. In December 2003, following nine months of secret talks between Libya, USA, and British officials, Libya announced that it would destroy all of its biological, chemical and nuclear weapons. Libya also agreed to allow for international inspection of its weapon facilities {Global Security, 2011}.

Following the 2011 Libyan revolution leading to the fall of Gaddafi's regime in September, it has been claimed that radioactive materials was discovered at a military site. What was found was said to be the so called yellow cake, which is, processed uranium ore that may be used to produced enriched uranium for nuclear purposes {CNN,2011}. Though this information is yet to be confirmed by the IAEA, but the National Transitional Council has announced that they are in close contact with the IAEA and have no interest in keeping the materials {Novosti, 2011}.

THE NIGERIAN PERSPECTIVE

As far back as 1978, Nigerian began investing into nuclear research which led to the establishment of two nuclear training centers: Centre for Energy Research and Development {CERD} at the Obafemi Awolowo University, Ile Ife as well as Centre for Energy Research and Training {CERT} at the Ahmadu Bello University, Zaria. The Nuclear Technology Centre {NTC} located in the Sheda Science and Technology Complex {SHESTCO}, Abuja was established in 1988 as the third training and research centre. Since the aspiration of becoming a nuclear power was unattainable, the desire to develop non military applications of nuclear

technology for the benefits of its citizens led to the establishment of these centres. The original design was to develop safe applications for nuclear technology in medical and human health, management of water resources and energy {power} sector. Furthermore, the Nigerian Atomic Energy Commission {NAEC} was set up to provide legal and regulatory framework for these nuclear technology applications in Nigeria within a strict regulatory provision as specified by the Nigerian Nuclear Regulatory Authority {NNRA}. Most unfortunately, Nigeria has not fared well at all in this effort. Even though Nigeria is among the first set of countries to sign international treaties on nuclear technology applications, this has not translated into any meaningful progress. One wonders why the nation has failed woefully in its efforts to harness nuclear technology for noble and peaceful purposes where other countries of the world such as Egypt and India have made great advances. These have great national and international implications for the Nigerian economy.

The global trend in nuclear technology development with particular reference to the experiences of Egypt and India is such that the world has long left Nigeria behind. In the case of Egypt's nuclear program, The Egyptian atomic energy authority {EAEA} was established for the development and utilisation of nuclear science and technology for peace, welfare, safety and security of the Egyptian society. EAEA has been involved in conducting research to develop nuclear technology applications in the field of agriculture, industry, health and environment. The nuclear medicine component of the Egyptian nuclear program has made remarkable advancement in the biomedical applications. Clinical therapy through the applications of radio-isotopes in medicine, for ailment such as breast cancer, lung cancer, brain tumor, etc has been provided for many Egyptian citizens. As a result, the number of Egyptians travelling abroad for healthcare has been greatly minimised. Interestingly, the size of nuclear facility deployed in Abuja is twice the capacity of the one established in Cairo. But it is an irony that Nigeria has not been able to achieve any meaningful progress with the facility since its establishment in 1978. It is very sad to note that many Nigerians have died of cancer of the lung and breast, yet the facility that was meant to provide medical assistance and prevent their death was provided many years ago. In addition, those who could afford huge medical treatment abroad are spending millions of dollars in foreign hospitals for treatment of different cases of cancer. This unfortunately is a significant economic loss to the nation as funds that should have been used for building Nigeria are being taken to foreign lands.

In the case of India's nuclear program, radiation from radio-isotope has been applied for immense benefits in areas of improved health care and agricultural productivity. In India today, application of radiation to agriculture has resulted in the release of 22 improved varieties of seeds which are contributing significantly to the increase of GDP of the country. The achievement of India and other technology centres in the world have clearly demonstrated the advantages of food preservation by irradiation. Sadly for Nigeria, the story is that of a shattered dream. Over 60% of the perishable agricultural products such as vegetables, fruits, etc are being destroyed annually while the nuclear facility that was acquired for the purpose of preserving these food items is left dormant or at best applied non-productively. Consequently, the nation's foreign reserve is greatly depleted as millions of dollars is being expended annually on importation of processed foods and drinks from other countries that are careful not to be reckless in the application of their nuclear technology.

As far back as 1987, a former minister of external affairs who is one of Nigeria's foremost foreign policy experts, the legendary Professor Bolaji Akinyemi, CFR, came up with the idea that Nigeria could utilize nuclear technology to develop military grade weapons which will strategically position it as a nuclear power and enable it to be more effective in the pursuit of its foreign policy agenda. He referred to the proposal as the black bomb. He noted that, "Nigeria has a sacred responsibility to challenge the racial monopoly nuclear weapons". He believed that Nigeria has the capacity to emerge as the first black power and that this has been the silent expectation of the world when the nation attained independence in 1960. The black bomb proposal was forward looking in the way it was meant to be approached when it was presented. If it had been adopted before now, the current doubt about whether Nigeria is the giant of Africa or the ridiculous manner Nigeria has been addressed even by African countries that have benefitted immensely from its foreign policy would have been non-existent. That is, Nigeria would have been treated and addressed more respectfully in Africa and even in the world. But the people in charge of the apparatus of government to implement such policies were not so forward looking. This is deeply regrettable. This is a dream that is now far from reality, or perhaps completely shattered, especially now that the resistance of the international community against ownership of nuclear weapon has grown very strong {Emmanuel, 2011}.

From these analysis, beginning from the failure of African countries to continue with their nuclear weapons programme, to the call for Nigeria to break the racial monopoly of nuclear weapons by investing in and developing nuclear weapon which could have placed her strong among the comity of nations, one is therefore tempted to ask, what went wrong? Most recently, the Director General of Nigeria Institute of International Affairs, NIIA, Lagos, Professor Bola Akinrinwa, has urged Nigeria to develop nuclear capability as a sovereign right and legitimate aspiration of the country, like any other nation on earth. He spoke in Lagos against the background of the pressure being mounted on the political leadership to sign NPT that will limit Nigeria's growth and development "in favour of the United States and other western power" that want to maintain

monopoly over development of nuclear capabilities, even for peaceful purposes particularly in generation of energy". He added that, "I think it is fundamentally wrong for some countries to think that they are better prepared to prevent nuclear explosion and to assume that apart from them all other countries on earth are at best, irrelevant and incomplete. I think Nigeria, for the purpose of its strategic position in Africa and West Africa, should develop nuclear capability, there's absolutely nothing wrong with that aspiration" {Vanguard, August 21, 2012}. Since this call, Nigerian political leadership has remained silent on this matter by not showing enough character, strength and assertiveness as to whether the country has the necessary requirements, such as expertise, knowledge, technology and resources {human and capital}. Where did the country missed it? Should we begin to accept the commonest used phrases such as, there is no hope for Nigeria; or Nigeria is a cursed country; or the political leaders don't have the citizens and nation at heart?

THE ODDS AGAINST AFRICA/NIGERIA'S DEVELOPMENT OF NUCLEAR WEAPONS CAPABILITIES

There are certain underlying factors that have or may have inhibited Africa's nuclear development efforts. Africa and indeed Nigeria's refusal to invest into nuclear research and development is hinged on a plethora of factors:

The poverty level of Africans

The United States and other countries of the west capitalize on the precarious poverty situation in the continent to exploit and prevent nuclear development in Africa. They promise, and most cases, render assistance in the form of loans, aids, grants and other forms of support to Africa through its political leadership, not bothered whether such assistance is directed at the actual purpose for which it is intended, for as much as their intention and desires are achieved. This assistance is normally in exchange for the stoppage of Africa's nuclear weapons development for military intentions as earlier discussed in the case of Algeria and Egypt {Broodryk & Stott, 2010}. It was this same scenario that played itself in the six party talks involving Washington, Moscow, Tokyo, Beijing, Seoul and Pyonyang {Rourke,2005}, amidst the insistence by North Korea to go ahead with its nuclear program. Pyonyang was promised aids amounting to several billions of dollars in exchange for its nuclear program. Yet, North Korea stubbornly went ahead, not just to develop long and short range missile, but to defile the NPT agreement which she earlier signed and rescinded, to test them underground. Though this didn't go down well with Washington, yet the deed has already been done. Africa political leadership lack such courage, enthusiasm, character, assertiveness and daring attitude to look at Washington eye ball to eye ball to say **NO**. This is not healthy for Africa's growth and development.

PRESSURE/WARNING FROM THE WEST

A lot of pressure is being mounted on the leaders of Africa by the United States and its allies the west to sign the NPT in order to prevent Africa countries from acquiring and developing nuclear weapons to the detriment of the continent's development while they {west} holds the monopoly. Otherwise what was the rationale behind South Africa, a country that constructed six nuclear weapons and the seventh under construction, and even tested same, all of a sudden decided to dismantle them, thus rendering all put together, including finance, to assemble the materials and develop them, to be in vain, and then became the first country in Africa to sign the NPT. In similar vein, after spending much resource to acquire nuclear weapons technology, Libya decided to invite the IAEA to inspect its nuclear facilities which she later destroyed, though not yet functional, and stopped the programme. In the case of Nigeria, for the past thirty five years, three nuclear training and research centres were established to meet the nuclear needs of the Nigerian people, as of today, nothing has come out of it successfully. Presently, the Chairman/ Chief Executive of Nigeria Atomic Energy Commission, Erepamo Osaisai said there are five training and research centres established within five universities in the country, yet there is no prospect of developing them due to pressure from the west. Similarly in 2008, the United States warned Nigeria not to rely on rogue nation in its quest to acquire nuclear technology and that Washington was closely monitoring the growing clamour by Abuja to join the elite group of nuclear nation with great apprehension. The White House spokeswoman, Dana Perino said, "it is a concern shared by the administration about the spread of nuclear materials. That America is concerned about Nigeria's discussion with Iran and on the acquisition of nuclear materials...". This was actually in reaction to a statement made by Nigeria's Science and Technology minister, Mrs. Grace Ekpwhre, that the government will continue efforts to build nuclear power plants as an answer to the country's electricity needs. In a swift reaction, Nigeria's minister of Foreign Affairs, Ojo Maduekwe, denied that the country wants nuclear weapons from Iran after Washington protested to Aso Rock on the deal {www.nairaland.com/.../us-warns-nigeria-over-nuclear}. What this means is that warning, threat and pressure from outside, hampers the continent's nuclear development efforts.

FOREIGN POLICY DECISIONS/POSTURE

All through history, especially prior to and immediately Nigeria attained independence, its foreign policy was directed towards the west. The height of this pro-westernization was the period between 1957 and the end of

civil war in 1970. In fact, Tafawa Balewa's regime's commitment to the west was aggressive and loyal to a fault, that anything outside the west made no meaning to the regime. Despite his consistent stance on non alignment, his speeches on major national and international issue betrayed him. To justify this assertion, he made statements like, "we shall never forget our old friends", "those we are accustomed to", etc, apparently referring to Britain and the United States as Nigeria's best friends, if not allies; and their leaders more reliable and trustworthy than those from the eastern bloc. He said in his Independence Day broadcast to the nation that, "we are grateful to the British whom we have known first as masters, then as leaders, and finally as partners, but always as friends". This justifies Awolowo's statement that, "the Prime Minister could hardly take any major foreign policy decision without first consulting the British government". Apparently referring to the Bizerta crisis of 1961 in which Balewa had to travel to London to seek the advice of British government before issuing any statement on the issue. He regarded communism as an evil and a great threat to his government and promised to prevent its infiltration and ideas to Nigeria. Nigeria's pro-west policy was also manifested in the unbalanced pattern of diplomatic relations with the outside world after independence. For example, four of the first five diplomatic posts opened outside Africa was in the west: London, Washington, Bonn and Rome. The other was Jeddah in Saudi Arabia, though the ambassador resided in Kharthoum. It was not until late 1961 that the Soviet was allowed to open an embassy in Lagos. Between 1960 and 1965, there were 52 foreign missions in Lagos of which only six belonged to the eastern bloc countries of Russia, Yugoslavia, Bulgaria, Czechoslovakia, Poland and Hungary. As if this was not enough, Balewa's government imposed unprecedented restriction on the number of Soviet diplomats in Nigeria, importation of communist literature and on travel to soviet bloc countries and discouraged soviet bloc aid and trade. Throughout Balewa's era, Nigeria was referred to as a "status quo state, a stooge and minion of the west" {Idang, 1973}.

Presently, Nigeria is gradually restructuring its foreign policy to be all embracing, including opening diplomatic missions in many countries {West, East, Arab and Middle East}, and its latest romance with Iran over the acquisition of nuclear materials and the sponsoring of some Nigerians to Russia and China for further studies. Despite this restructuring, the character disposition of Nigeria political leadership and her foreign policy makers is still tilted towards the west. What this means is that whatever decision is taken in the west, particularly the United State and Britain, still binds on Nigeria. This has left in its trail suppression, oppression, repression and subjugation of Nigerians and, indeed, Nigeria. Now that the craze to stop nuclear weapon proliferation is stronger, Nigeria will no doubt abide by it.

DOMESTIC PRESSURE AND HIGH PRODUCTION COST

It is a truism that apart from the tasking and high knowledge required to acquire the necessary expertise on nuclear technology, it is also highly capital intensive. That is, the time required to gather nuclear information and materials and to assemble them is tasking while the actual project execution is monetarily demanding. According to the Stockholm International Peace Research {SIPRI} and the United States Arms Control and Disarmament Agency {ACDA}, total military expenditure is well over \$568 billion per annum. The US and Russia alone in 1979 spent about 54% of the total resources for military purpose in the world {Akinoyemi et al, 1986}. Where a country like the United States spent a whopping \$2.2 trillion in 5 years on defense only {Rourke, 2005}, both in nuclear and other forms of military hardware, Africa countries cannot spend same. It is in this regard that some people are of the view that it is better to direct such amount in developing human capital, build infrastructure, restructure, reform and uplift the continent's economy rather than waste such amount on defense only. Writing on the "Economic and Social Consequences of Defense Spending", Bolaji Akinoyemi posited that there has been a disturbing trend in the allocation of resources worldwide for military purposes. Given the low level of economic development in the third world in general and in tropical Africa in particular, the burden of defense spending must be insufferably heavy. This is not to deny that in view of the poor performance of the African countries during the first and second United Nations development decades and also because of the pressing problems of growing shortage of food, population explosion, decreasing stock of non-renewable natural resources, energy problems, rural-urban migration and others, the observable trends of increased militarization in terms of the total resources used for military preparedness has become a major concern to both the African government themselves and the United Nations. A meaningful approach to the assessment of defense spending in Africa, Qualitatively and quantitatively, therefore must start with a synopsis of the characteristics features of the African economies. In almost every sense of it, all black African nations can be characterized as developing. By modern standards, these economies can be described as largely rural, with tiny modern enclaves in some cases. All the countries in tropical Africa are still enmeshed in the throes of development, but they are desperately searching for quick and effective means of telescoping into a short period what the industrial countries of the north achieved in centuries. Thus, the burden of spending in defense in black Africa is heavy. It diverts resources which could have been allocated to social and economic development project {Akinoyemi et al, 1986}.

What can be gleaned from the expose is that spending on military technology and hardware {nuclear

weapons inclusive} in Africa is meaningless when the level of economic and social development is still very low. Furthermore, monies spent on weapons technology is same as been externalized since it brings no return or profit that will be of benefit to the average African citizens. Again, the level of defense spending is not determined by the strength of a nation's economy or prestige, but by the perception of internal and external threat. So what manner of threats faces Africa that such amount would be spent from their budget on defense? Thus, they advocated for economic, social and human development. This means that, if it is today that there are pockets of insurgencies around the continent, they would have advocated nuclear weapons for military purpose. In essence therefore, pressure from scholars and foreign policy experts like Akinyemi, have the ability of impacting on Africa/Nigeria nuclear development programme since it is better to develop economies and human capital rather than build bombs.

SIGNING AND RATIFYING OF NON –NUCLEAR TREATIES

African countries, including Nigeria has had to sign treaties that either barred or restrict them from developing nuclear weapons. One of such impediments is the African Nuclear Weapon Free Zone {ANWFZ} Treaty. This treaty also known as the Treaty of Pelindaba, establishes a nuclear weapon free zone in Africa. It was signed in 1996 and came into effect with the 28th ratification on 15th July, 2009.

The quest for a nuclear free Africa began when the OAU formally stated its desire for a treaty ensuring the denuclearization of Africa at its summit in July 1964. The treaty was opened for signature on 11th April 1996 in Cairo, Egypt. All the states of Africa are eligible to become parties to the treaty which will enter into force upon its 28th ratification; the protocols will also come into effect at that time for those protocol signatories that have deposited their instruments of ratification. It was reported in 1996 that no African Arab state would ratify the treaty until Israel renounce its nuclear weapons program {Rosen, 1997}. However, Algeria, Libya and Mauritania have since ratified the treaty. The United Nations General Assembly has passed without a vote identical resolution in 1997 {twice}, 1999, 2001, 2003 and 2005 calling upon African states that have not yet done so to sign and ratify the treaty as soon as possible so that it may enter into force without delay {UNGA Resolution, 51,52,54,58,60}. The treaty prohibits the research, development, manufacture, stockpiling, acquisition, testing, possessing, control or stationing of nuclear explosive devices in the territory of parties to the treaty and the dumping of radioactive wastes in the African zone by the treaty parties. The treaty also prohibits any attack against nuclear installations in the zone by the treaty parties and required them to maintain the highest standards of physical protection of nuclear materials, facilities and equipments which are to be used exclusively for peaceful purposes. The treaty requires all parties to apply full scope IAEA safeguards to all their peaceful nuclear activities. A mechanism to verify compliance, including the establishment of the African Commission on Nuclear Energy has been established by the treaty, with its office in South Africa {African Nuclear Weapon Free Zone Treaty}. The treaty ANWFZ, covers the entire African continent as well as such islands: Agalega island, Bassas da India, Canary island, Cape Verde, Cargados Crajos Shoals, Chagos Archipelago-Diego Garcia, Comoros, Europa island, Juan de Nova, Madagascar, Mauritius, Mayette, Prince Edwards and Marion island, Sao Tome and Principe, Reunion, Rodrigues island, Seychelles, Tromelin island and Zanzibar and Pemba islands {Scott et al, 2008}. As of July 2009, the treaty has 28 ratifications and entered into force on that date. The ratifying countries are: Algeria, Benin, Botswana, Burkina Faso, Burundi, Equatorial Guinea, Ethiopia, Gabon, Gambia, Guinea, Ivory Coast, Kenya, Libya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique {CNS, 2008}, Nigeria, Rwanda, Senegal, South Africa, Swaziland, Tanzania, Togo and Zimbabwe {African Union, 2008}. At the other end, 23 countries have signed but not yet ratified the treaty {<http://www.africa-union.org/root/au/documents/treaties/list/pelindaba%Treaty.pdf>}. They include Angola, Cameroun, Ghana, Liberia, Sudan, Uganda, Zambia, etc {http://en.Wikipedia.org/wiki/African_Nuclear_Weapon_free_Zone_Treaty}.

The three protocols of the Treaty

Under protocol 1, the United States, France, UK, Russia and China are invited to agree not to use or threaten to use a nuclear explosive device against any treaty party or against any territory of a protocol 111 party within the African zone.

Under protocol 11, United States, France, UK, Russia and China are invited to agree not to test or assist or encourage the testing of a nuclear explosive device anywhere within the African zone.

Protocol 111, is open to states within dependent territories in the zone and obligates them to observe certain provisions of the treaty with respect to these territories; only Spain and France may become parties to it.

As of 12 August 2009, UK, France and China have signed and ratified the protocols, but the Russian Federation and the United States are yet to ratify it {http://en.Wikipedia.org/wiki/African_Nuclear_Weapon_free_Zone_Treaty}. The United States has supported the concept of the denuclearization of Africa since the first UNGA resolution on the issue in 1965 and has played an active role in drafting the final text of the treaty and protocols. The U.S. and Russia signed the treaty in 1996

but have not ratified their obligations as nuclear weapon state under protocol 1 & 11 of the treaty. In May 2010, U.S. secretary of state, Hillary Clinton announced that the Obama administration would submit these protocols to the U.S. senate for advice and consent to ratification {Review Conference of NPT, 2010}. Russia has not ratified the treaty because the status of the India ocean island of Diego Garcia, controlled by The UK and used as a military base by the United States, with regard to the treaty is unclear. Diego Garcia is part of the Chagos Archipelago claimed by Mauritius. The other islands of the chagos Archipelago are considered in Africa and are under the treaty, but neither the United States nor the United Kingdom recognizes Diego Garcia as being subject to the treaty {Arms Control Association, 2006; peter, 2009}. This is one of the major factors that has inhibited, misdirected, misguided, altered and strangulated Africa's attempt at developing nuclear weapons. Africa's political leadership did not see this as an insult and an infringement on the rights and sovereignty of the people of Africa. While there was the craze to establish the Africa Nuclear Weapon Free Zone Treaty, such could not be said of Asia, otherwise countries like Japan, South and North Korea would not be nuclear countries today, neither is there one for Middle East that could have prevented Iraq, Israel, Iran and Pakistan. Similarly, African leaders should have protested for the establishment of North and South America, as well as European Nuclear weapon Free Zone to prevent countries in these regions from developing nuclear weapons so that the entire world would be clean of nuclear weapon. Rather than do this, they hastily signed and ratified the ANWFZ treaty in order to save face and gain favour from the initiators of the monster who are bent on preventing other countries from its benefit. I salute the daring and courageous countries that are yet to ratify the treaty on the ground that some countries renounce before they ratify. Africa must not always agree with other continents of the world, especially on issue that bothers on the upliftment of the continent. They must always have and take their own stand on serious national and international issues such as the study under discourse. They must let the world know that Africa is no Pushover, and that the continent has ability and capacity in terms of population, human and mineral resources, viable and arable lands, intelligentias, prosperous climate, topography and vegetation, which can make them stand on their own without support and contribution from outside. After all, sanction was placed on Libya for many years, yet they survived, India resisted temptation from outside for many years by depending on locally made manufactured goods, today it is one of the fastest growing economies. Africa can replicate these examples. We must look inward.

CONCLUSIONS

Nigeria should begin to play her role as a leading country in the continent, while Africa should start playing a bigger role in the international system. While other countries are building nuclear military capabilities and nuclear energy, Nigeria should do same and not renege in its effort to position itself. As Professor George Obiozor, former D.G. Nigeria Institute of International Affairs, NIIA and Nigeria's ambassador to the United States, opined that, "even with the historical fluctuation of the international system between war and peace, Nigeria should embrace the imperative of pragmatic power politics in the global context for relevance and strategic relevance. Nigeria is a rising power in Africa and a regional hegemony in West Africa, with its population and national resources, the U.S. has a strategic interest in the dealing with the most influential black nation on earth. He said it was a matter of time when there would be a convergence of technology and population for the world to reckon with Nigeria {Vanguard, August 21, 2012}. Nigeria must rise to the occasion if she must play a leading role in Africa and the world. As one time American great, Thomas Jefferson, once opined, that, "if a nation expect to be ignorant and free in state of civilization, it expects what never was and never will be...". No matter what we may have passed through or facing at the moment, we must not relent or persevere because, after the storm, comes the rain, as there is always light at the end of the tunnel. This light must not be allowed to go off. This ideas and visions must not die. Nigeria will be great.

RECOMMENDATIONS

Nuclear weapons program is now a global phenomenon which cannot be completely eliminated. It is not a bad program per se. If properly utilized, it enthrone development, plenty and hopes. These are virtues that guide the proper use of nuclear fuels, uranium and thorium {Palmer & Perkins, 2007:755}. Nigeria is expected to key into these virtues so as to better the lives of its citizens and that of the countries looking up to her leadership. She should begin to play active role in world politics and in the politics of IAEA. She should invest into the development of nuclear weapons like other countries, both for peaceful and military purposes. Since it has been researched that nuclear fuels, uranium and thorium can be harnessed to increased world's food supply, prolong life, conquer disease, and in general, create a better life {Lawrence, 1955}, there should be a coordinated efforts between countries of the world to venture into this area of research to better human lives. Defense policy makers must also consider the consequences of their actions on the policies of their adversaries. Actions that seemingly increase security may in fact appear provocative to potential enemies and lead to great instability or uncontrolled arms race {Holsti, 1992:255}.

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