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Contemporary international system, aligning technology with Nigeria's foreign policy

Abstract

Technology has always played a crucial role in global politics, security, economics and culture. It has continuously shaped the structure of the global system, its actors, and the relations between them and vice versa. Yet analysts have down played its importance. Despite its benign neglect, international politics is tailored by technology. Technology is understood as an integral component of the international system that fashions global interactions and itself is affected by global politics, economics, and culture. This essay argues that to understand the transformation in global affairs, technology has to be integrated more systematically into the theoretical discussions of International Relations (IR). To achieve this objective, an interdisciplinary approach that systematically incorporates insights of Science and Technology Studies (S&TS) into IR is deployed; this method provides a better perception of how technology, politics and the international system interact with each other. In so doing, it opens the field of IR to a wealthier understanding of how global systemic change is affected by technology and how international economics, politics, and culture impact technological evolution.

Keywords: contemporary international system, technology, Nigeria, foreign policy

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Introduction

Key changes have taken place since 1991, the Cold War nominally ended. Nominal in the sense that there had been several resurgences of the Cold War, as witnessed in the Syrian conflict, Russian invasion of Ukraine and the Sino-American trade conflicts among others. 1991 has shown other developments. Renewed demands for a new international world order, reformation of both the United Nations Security Council and the international monetary system, surge in asymmetric conflicts as shown in international terrorism, and a new multi polar urge as different from the un-polar stance that some scholars feel is in place, particularly as envisaged by Fukuyama's End of History.

Before these events, there were other signals like, the disintegration of the colonial system, the integration of the European nations, the continued rise of China, the mounting nationalism and self-assertion of the global South, pursuit of self-determination and other ethnic interests in the dependent states in the East, the West and the South alike. Even the East and the West tensions were softened by détente and rapprochement, all meant to ease tensions. Behind all these events was the unseen hand of technology. The concern of this paper is not so much the events in the global North. Though the present-day international system is a product of the North's global dominance, it is necessary to expose the origin or evolution of this dominance. Taking our cue from 1986 Robertson's magnum opus - Making of the Modern World ¬- involves six pre-dominant stages, that could be itemized below. Rise of world capitalism into a global system through slavery, colonialism, industrialization and the associated intra Eurocentric rivalries that integrated the developing African, Asian and Latin American countries (Global South) into the capitalist bloc;

a) The dialectics of uneven development between the industrialized Global North with the Global South

b) The integration of Japan into the world economy and the end of Pax- Britannica

c) Post 1917 challenge to world capitalism from the Bolshevik Revolution in Russia

d) The Rise and consolidation of Pax Americana

e) The emergence of the new industrial giants particularly the Asian tigers

It can never be contested that the Euro-American slavery lasted over 400 years and played a decisive role in the primitive capital accumulation in the industrialization process of Western Europe and North America.

Equally, colonial exploitation and domination has also been crucial in the rise of capitalism and its continued expansion into the world system. Many may question the need for these historical antecedents in this contemporary political system. Rodney. Gives apt reasons: It has already been indicated that in the 15th century, European technology was at par with Africa's, since they bought and sold from each other. This economic undertaking changed the moment Africa was brought into the colonial yoke, a reversal that was prompted by the industrial revolution and its technological advances.

Equally, the Global North and its transnational corporations monopolize the world manufacturing, technology, world finance, trade and access to natural resources and the entire military-industrial complex that have produced the weapons of mass destruction; disproportionate or excessive concentration of political, military and economic power in the global north with an accompanying inequalities of income, wealth and human development between the developed and the developing countries.

Added to all these are the grinding poverty that pervades many countries in the global South. Nigeria is the poverty capital of the world. North-South relations bear much weight in the contemporary international system. Assuredly, it is a technology driven system, Technology has kept some countries industrialized while others are not.

The global South countries are greatly dissatisfied with their plight and have comprehensively demanded for drastic transformation of the global political order with a view to redistributing wealth and income. But the international political order is not altruistic. Since the focus

of foreign policies is for the welfare of the people, this study is set to understand how Nigeria can use technology to drive its foreign policy.

To achieve this objective, this paper is subdivided into six sections starting with this introduction. Section two gives a brief conceptual clarification of technology and foreign policy; this is followed by section three that looks at the role of technology in the International System. Section four focuses on the Nigerian State and Technology. The fifth section is Nigeria's Foreign Policy and technology. While the lapses for a foreign policy that is not technologically driven is examined, Nigeria efforts in redressing such via the instrumentality of foreign policy is given. It is against this background that technology can help the country in the realm of Diplomacy, security/Asymmetric warfare, the quest for a nuclear power plant and climatic change. The final section is some recommendations and conclusion.

Conceptualizing technology and foreign policy

Human lives have actually been improved by technological innovations even before the advent of Industrial Revolution. Before the industrial revolution, Africa as an example saw moments of some technological advances. In Nigeria, classical bronzes of Igbo Ukwu were produced in the 9th century; Ife had it's (from 11th to 12th century AD) and Benin of the 14th century AD.

These accomplishments happened when Europe was still in its Dark Ages. It is a historical fact that it was when Alexander the Great conquered Alexandria, that Egypt's archival materials were taken to Greece, the foundation center of Western academy.[1]

There is no doubt that the same Egypt located in Africa gave us Imotep, the designer of the Egyptian pyramid, a scientist and the progenitor of modern medicine. Again Ahmes —the great mathematician—that authored the premier mathematical textbook is also an African.[1] These great accomplishments were rubbished with colonial invasions.

Technology

Nonetheless, technology described as the appliance of scientific understanding and skill for the welfare of humans is the basis of technology. Wie[2] envisages technology as the machinery and knowledge essential to run projects including the hardware (equipment) and software (skill). Technology broadly involves a professional know-how and an entrepreneurial expertise to implement a planned course of action.[3] Olaoye[4] sees technology as the system of artefacts, tools and techniques utilized by some people in a society to transform resources and conditions in their environment in order to meet their basic needs.

Gamser et al.,[5] conceive technology as an amalgamation of knowledge, equipment and skills to provide services and goods to a given populace. Broadly speaking, technology can be taken to include a wide range of behaviour to accomplish things: that affect the welfare of the people, in such areas as interactions and communication, production of foodstuffs, settling disputes, work attitudes shelter and transportation to mention but these

One interesting thing about technology is that societies develop their specific procedures of doing things though these procedures are subject to change. It is in this regard that Ackermann[6] understands technological innovation as a form of change, principally in the society.

Brooks[7] added some colour to this discourse by envisaging innovation as the route through which technology is conceived, codified, developed and deployed on a huge degree. Technological innovation makes it possible for technology to be reproduced and transferable. In that sense technology can be widely diffused with speed. Innovation is the major source of socio-economic growth in different climes of the world.

Foreign policy

Many scholars have spoken quite elaborately about foreign policy over the years. The recurrent feature in their treatise is the persistent relationship that exists between foreign policy as a course of action and the set of principles and instruments adopted by the state in realizing and protecting its core interests.

From this perspective, foreign policy is defined as course of action a state adopts to achieve its fundamental objectives; it is the totality of goals guiding the state as it relates with the external environment.[8] Foreign policy is concerned with the choices and deeds of a state as it relates with other states.

The main purpose of foreign policy is to further a state's interests; a state can achieve its foreign policy goals in several ways. A state can use any instrument it considers appropriate to achieve its foreign policy objectives; such ordinarily include diplomacy, trade or sanctions and the use or the threat to use force.

Foreign policy objectives pursued by states include the following:

a) Promotion of the welfare and prosperity of the citizens;

b) Safeguarding the security and territorial integrity of the state;

c) Cultivation of principles of peaceful and friendly co-existence with other nations;

d) Ensuring and encouraging the practice of international civilized standards in the conduct interstate relations;

e) Projecting the prestige and reputation of the nation.[9,10]

Nigeria must be seen as capable to pursue these objectives. In spite of the colonial catastrophe in stroking our indigenous technology, Nigeria presents a huge potential to the world economy. Nigeria's entrepreneurial skills in the continent is outstanding; the country has a huge population with lots of start-up companies; in farming, Nigeria has an enormous arable land that over 84 million hectares; the country's film and Hollywood industry is creating global waves.

Technology can be used to harness this huge opportunity that the country offers to the world. The thrust of this paper is how the country can use technology to achieve these foreign policy goals.

Technology in the contemporary international system

This section appreciates Reinhold Niebuhr's[11] observation that modern technology has instituted a basic world district that is not joined together organically, politically or morally. Modern technology according to him has created a world of mutual dependence but not one of mutual trust. Going further Niebuhr aptly remarks that technology sharpens economic competitions and induces change; it amplifies the instruments of war so that "mutual fear may end in atomic conflicts and mutual destruction.[11] To these perplexities, Niebuhr added that ideological conflicts have started to afflict the world. From the foregoing, technological developments has actually opened new vistas of human progress just as it has worsened human insecurity as technology has perfected the science of killing.

The array of these weapons of (mass) destruction is uncountable-guided missiles, weapons of mass destruction, lethal gases, atomic and hydrogen bombs. Conventional weapons are not left out of this array.

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Interplanetary warfare is not an unlikely phenomenon. In effect, the contemporary international system or what can loosely be described as the modern world; is technologically driven. Modernity is profoundly connected to technological progress in the annals of world history. For instance, the British industrial revolution consequently contributed to her hegemonic status in the nineteenth century. Prussia's adaptation of railroad technology was instrumental to her military prowess, the feat that ushered the Habsburg Empire. Possession of nuclear weapons led naturally to the super power status and rivalry in the infamous and the Cold War era. Nuclear weapons brought into the international politics lexicon, concepts like mutually assured destruction that made direct military confrontation between the two superpowers unimaginable. In the 21st century, communication technologies have led to the all-encompassing application of ICTs; today drones are pervasively used by states. Both states and non-state actors are faced with challenges that face these technological innovations. These examples testify the unparalleled use of technology in foreign affairs. Despite its benign neglect, academicians particularly in the realm of IR must engage in the pervasive role of technology in role policies of states.

It is certain that a technologically global world affects Nigeria in one way or the other. Examples abound in Nigeria. What happens as synthetic rubber is driving those dependent on natural rubber from market. Who takes care of the accompanying poverty that afflicts the natural rubber producers? As Nigeria is dependent on oil, with new oil field being opened on daily bases, what happens if atomic energy overtakes oil politics or different brands of oil [shale] are discovered with modern technology? What happens as medical advances obliterates heavily populated nations like Nigeria? What happens as improvements in technology helps to extort confessions from innocent Nigerian citizens? As technology improves production, what side effect has it on millions of Nigeria's job seekers? How does this joblessness affect Nigeria's image? How has technology contributed to ecological poverty? Technology-driven oil companies in the Niger Delta, have brought with them widespread environmental degradation and pollution.

The Nigerian Governments is still ill-equipped to forestall economic problems induced by individuals or specialist groups that trade on foreign currency, online hackers or capricious fund managers. Technology has given its blessing to split-second transactions that could move billions across the Nigerian borders with a small number of computer keystrokes.

Many Nigerian including the religious bigwigs lament how technology has contributed to the country's cultural poverty, particularly the manner the global mass media and the internet are debasing Nigeria's cultural standards and in effect adopting the unsustainable lifestyles of the West. These and other researchable questions will ever confront foreign policy analysts that have overlooked these technological issues.

Though technological advances have opened man's destructive capabilities, yet their immense benefits overshadow the demerits. The adoption of technology by African countries like Nigeria has profoundly affected their economies; quality assurance standards are now established; communication has been enhanced even from a distance; these ordinarily have led some reductions to the national costs of production. But regrettably, Nigeria's current efforts is adaptation or technology; what is needed is innovation. It is in this regard that we shall look at technology in Nigeria.

The Nigerian state and technology

There is a strong relationship between the Nigerian state and technology. The character of the Nigerian state has been responsible for its level of technological growth. That character can be seen in the country's colonial history. Britain has its reasons for the state called Nigeria. An integral part of that reason is economic.

The British saw in Nigeria as a ready market for its goods like den guns, spirits, mirrors, and other manufactured goods. The truth is that before the coming of the British, Nigerians were already involved in all aspects of economic and industrial endeavors. Nigerians that time made their agricultural hoes, built their houses, weaved their own clothes, smelted their bronzes, many of which had outstanding international standards like FESTAC Gin production was rampart in Nigeria.

So in effect, before the colonial infiltration in Africa, local technology was rampant in countries like Nigeria. Africans made exceptional technological innovations in iron, ivory, arts, wood and local drugs advances. Foreign intrusion in the form of colonialism deliberately jettisoned those technological processes, though they were environmentally friendly.[12]

Over and above political and institutional prerequisites are scientific and technological ones. Founders of overseas empires need ships capable of reaching distant lands and of returning home. To complete round trips voyages, sailors require knowledge of the configuration of land masses and seas, the direction and intensity of winds and currents, and the movements of celestial bodies. They should be able to locate their position on at least the north-south (longitudinal) axis while out of sight of land.[13]

Creating an empire and maintaining it requires power asymmetry. Colonizers must be able and willing to deploy weapons more effectively against a territory's population than the latter can use against them. From the foregoing, Abernethy[13] is cocksure that the Europe projection of an outward political power at about the time its innovation in scientific thinking and technological application were accelerating is not a coincidence. Explorers of seas and continents accumulated a vast amount of information that enriched basic and applied scientific work at home.

The colonialists deliberately stopped further developments of Nigerian indigenous technology, as the produce from them were threats to the imported finished products from Europe. Just as the biblical builders of the tower of Babel were stopped by confusing their languages, further technological advances were stopped in Nigeria. English language and names were superimposed. The British aim was to introduce an extractive science and technology policy that would support crop production.

These efforts led to the establishment of agricultural research institutions at Ibadan. Umudike, and Zaria in Nigeria. Nigeria's attainment of independence did not radically change the status-quo. Traditional institutions of learning were established as emphasis shifted to import substitution industrialization policy, which emphasized the building of assembly plants in the country. The implication was that Nigeria allowed the importation of completely knocked down parts into the country, in order to assemble some vehicles.

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Nigeria is possibly the only nation that cannot pride itself of a state vehicle; it is a nation that imports every known brand of vehicle into the country. Be that as may, let us leave the past to its domain and focus on this paper which explores how Nigeria can align technology with its foreign policy. Nigeria's problems for lack of commensurate technological innovations is best captured by Ogbonaya Onu,[14] the Minister of Science, Technology and Innovation as he observed that the nation depends solely on foreigners in the execution of projects like the building of important roads and bridges, seaports, airports, dams, telecommunication systems and refineries.

The Minister equally regretted how the production of petroleum oil and further exploration of new oil fields that Nigeria relies for revenue generation is mainly dependent on foreign technology. There is the need to change Nigeria's mindset to love only things foreign even at the expense of rudimentary Nigerian techniques. Though the country has established some research institutes like the Federal Institute of Industrial Research (FIIRO) and the Project Development Agency (PRODA) to bridge this technological gap, yet, they are in essence government owned; till date they are not accredited vibrant research centers and like other government established institutions are handicapped by inadequate personnel, contacts, funding and facilities. But how can the country's technological gridlock be redressed through the instrument of foreign policy?

Technology and Nigeria's foreign policy

To achieve a country's 'Comprehensive National Power' (CNP), there is the need to integrate its foreign policy with requisite scientific and technological advances particularly in the realm of diplomacy. Contemporary International Relations demands some linkages between technology and the practitioners of diplomacy.[15] In the calculus of international politics, power defines interests. The mastery and control of a country's resources determines the state's capabilities to manipulate international affairs. Technology plays a significant role in this regard.

Nations continue to interact within the global system based on power –cultural, economic or military. Science and its variant-technology-determines a nation's economic or military strength. In the Cold War period, how did the United States and the Soviet Union become super powers, but for their possession of vast nuclear arsenals? Today, technological power will continue to influence international affairs. Nigeria's place in the technologically driven world is best captured by its Minister of Technology, Onu,[16] when he decried the gap between Nigeria and the developed world. To catch up, he insisted that his country must invest in space research and innovation:

As stated earlier, Nigeria's foreign policy encapsulates the policies and acts the nation uses to achieve its national interests. For years, Nigeria's national interest is tailored to be economically developed through the instrumentality of technology. This objective is not a simple one to attain, since core Nigerian scientists, engineers and technician would ordinarily be expected to play significant roles in a department that is the preserve of politicians and bureaucrats. Be it as may, technology, herein identified as the application of knowledge and skills, has advanced foreign policies of states in this contemporary time. In a world, where no country can claim self-sufficiency, technology has linked nations and economies together in what today is called the global village.

The contemporary political system is such a one that countries endeavor to improve their capabilities not only to access raw materials but to add value to them by manufacturing for export. Today many countries in the global South are incapacitated in the application of technology to industry, even in military-industrial complex. Nigeria, like other states in the Global South imports various goods needed for the sustenance of the economy. This sad phenomenon affects the quality of foreign policies Nigeria has towards such countries. It is in recognition of this sad reality that the Jonathan administration opted for a transformation programme captioned Vision 20:2020. It was envisaged that the country would establish fabricated metal, iron and steel sector whose products would form the basis of most material inputs for other domestic industries, such as building and construction, oil and gas, transportation and automobiles. It was also envisaged that these sub sectors would trigger industrial revolution in the country. 2020 is come and gone and it is arguable whether Nigeria took the steps to realize the economic and industrial growth since 2012, when this programme was launched.

Whether we accept it or not, technology has made life simpler, as Nigerian homes are today dotted with computers, cell phones, television appliances and sophisticated luxurious automobiles. It is acknowledged that technology is the tool that facilitates dramatic changes in societies like Nigeria. Agbu's observation on this is apt: Innovation in technology is essential for Nigeria to continue her economic advancement, maintain political stability, support advanced military capabilities while retaining her geopolitical power. This can be achieved when the country is able to be innovative, and increase the contribution of science and technology to economic growth and national foreign policy goals.[17]

Technological advancement can help Nigeria realize her quest for continental grandeur, power and self-reliance. In today's contemporary political setting, a country's technological growth determines her position in multilateral negotiating tables. A technologically backward state exercises very little power in the international arena. In effect, deficits in technological advancements, have affected Nigeria's leadership role quest within the ECOWAS sub-region and the entire continent.[1] It has also affected Nigeria's military capabilities, as she displays pacifist tendencies even when its territorial integrity is subverted.[8] Technological backwardness is also likely to affect Nigeria's aspiration as a permanent member of the Security Council. Lastly an economy that is not knowledge driven affects the quality and flow of foreign direct investments. Such backward states can never appreciate the role of espionage and counter espionage as foreign policy tools. Nigeria at sixty years of independence is still dependent on other technologically developed countries for her industrial needs and foreign policy tools like espionage software. How does technology enhance Nigeria's realization of its foreign policy objectives in some of these selected fields of diplomacy, security and climate change?

Technology and diplomatic practice

Intelligence gathering, representation and negotiations, as key components of diplomacy have always existed in our mother Africa. Before the onset of modern technology, diplomats had to wait for weeks or even months to directives and instructions as to their lines of action. Today, things have changed as a result of modern techniques. Modern technology has brought about instant contact and thus replaces the outdated forms of communication. Nowadays, new technological channels have replaced outdated forms of communication. Those in the diplomatic corps, have access to arrays of information and networks.

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Nigerian ambassadors and politicians today make use of Whatspp, Facebook and Twitter to interact with fellow citizens, policymakers and other foreign officials. Social media like Facebook and Twitter have affected foreign policy in many ways. They foster beneficial exchange of ideas between policymakers and civil society; equally, they now enhance diplomatic practice by helping them [diplomats] to gather information, analyze, participate, manage and react to events.

Technological advancements have improved the channels and frequency of communication between the diplomat and his home office. Technology has changed the nature of diplomacy in many ways. First there is an important shift of diplomatic focus from government to government; now it is interesting a people to people focus.

Diplomacy has to be abreast with the world of technological changes. Today ideas drive the world. In the technological world, non-state actors like the civil society groups, international corporations, and cultural movements use online platforms that know no national boundaries and are never subject of any state.

These online platforms facilitate direct interaction among people across political divides domestically and beyond different nationalities. An astute diplomat knows in today's international political system, his or her duty in a parliamentary conference is not to control the conversation, but to introduce the participants to each other and let them take it away. Information technology has also eroded the diplomatic practice that is shrouded in 'secrecy'.

A diplomat today engages diverse audiences, a scenario that requires specialist skills in social media and the ability to discern and interpret big-data analytics. The act of diplomatic negotiation has also been drastically reduced by technology, leaving diplomats as intermediaries. In the Cuban missile crisis, the moment Washington established a hotline with Moscow, annoying diplomatic exchanges vanished leading to an amicable settlement of the dispute. By relegating the role of diplomats in negotiations, political leadership was elevated.

In effect, technology is making diplomacy exciting, dynamic and a creative profession. Technology can also make inroads to security, climate change, agriculture and a host of other issues Nigeria. An understood technological environment would not only help the country but also help the country's technological drive via the instrumentality of foreign policy.

Technology and Nigeria's security

Nigeria's rising insecurity is a source of concern not only to the government but to the entire populace. Though the nation has spent much in purchasing state of the art weapons and fighter jets, yet these endeavors are not matched with concomitant results. The reason is not farfetched. The country is not using technology to create jobs and improve its security. The problem does not lie in the closure of borders; there is no way the country can secure its territory manually without the use of technology. As regards movement of peoples, the nation's borders can be secured through these modern technologies- automated national identity system; coupled with this are technological platforms for finger printing and facial recognition.

In other developed climes, the identification initiatives start with birth registration and terminate with death. When these processes are combined with DNA, it is no longer cumbersome to trace and track down individuals and groups even those with terrorist or criminal tendencies. Another advantage derived from automated national identity system is the capability of knowing who is who, ones place of residence and who owns what.

It is possible to ask whether this information are not already provided in ones BVN, an initiative of the Central Bank; in the Nigeria Communication Commission when registering one's telephone line and when one is captured both by the Federal Road Safety and Commission and the Independent National Electoral Commission when one is enlisted into the system for electoral purposes.

Though these data have been collected by different government agencies, yet there are noticeable flaws – first, these data are collected from Nigerians that are eighteen years and above; insurrectionist gangs recruit and train juvenile members and get them indoctrinated. This is peculiar to the Almanjiri pupils that have joined sectarian groups like the Boko Haram. Secondly, there has not been any concerted effort to centralize the entire database. Technology can aid nation's security when it is coordinated. Modern technology can also aid intelligence gathering by deploying surveillance gadgets that monitors organizations and institutions, persons or groups that are prone to breach societal peace.

Intelligence gathering has enormously been improved through modern ICT tools like the media, social media networks, internet and mobile telephony systems extensively used by security agencies worldwide. Other widely used intelligence gathering apparatus include surveillance cameras, bio-metric surveillance, corporate surveillance, data mining and profiling, social network analysis, satellite imagery (space borne photography), RFID (Radio-frequency identification) and Geo-location devices that displays the geographic location of a user or device. These surveillance gadgets can be used profusely to watch closely suspected groups that disturb societal peace.

It is ridiculous that a country that boasts of Africa's largest young population with bursting entrepreneurial energy, creativity and resilience is also afflicted with counter-narrative and damaging reports of fraud, unemployment, corruption and insecurity. Technology can redress these anomalies and unleash the country's image in the global world.

But the match towards technological advancement can only be won if the country encourages governments at all levels to patronize domestic companies with research and development focus; manufacturing companies in Nigeria must also be encouraged to help in developing domestic technological competence. This requires a synergy between the Nigerian business and companies and the research institutions like the universities.

If this is not done and done timely Nigeria may risk remain a provider of raw data while it pays dearly for the digital intelligence generated from the data.[18] Nigeria's deployment of technology to checkmate terrorist and criminal attacks can also be extended to all herdsmen. In this case, it is possible to electronically tag every cow to the owner.

In such a case it is possible to monitor the movement of all cows, using the above mentioned technological devises like surveillance cameras, bio-metric surveillance, corporate surveillance, data mining and profiling, social network analysis, satellite imagery (space borne photography), RFID (Radio-frequency identification) and Geo-location devices that displays the geographic location of a user or device.

Technology and climate change

Climate change is one of the biggest global challenges,[19] that today transcends national frontiers; this phenomenon makes the traditional instruments of diplomacy unhelpful. Changes in climate result from the advancement of technology.[20] Climate change in today's world

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is a synonym for global warming that is caused by emissions of greenhouse gases.[21] Against all expectations these emissions have resulted to environmental distortions like the rise of sea and ocean levels; the world temperatures have also risen as a result of climate change.[21] Climate change results from depletion of the ozone layer as a result of the production and use of fossil fuel, especially the emission of carbon dioxide from the burning coal, oil and gas.[22] Climate change in Nigeria causes floods, landslides, drought and famine. As the weather changes and storms increase in frequency and intensity, stern socio-economic consequences result. Malnutrition and disease become common occurrences. Climate change has a cumulative effect on natural resources including agricultural resources and the balance of nature.[20] Nigeria loses about $750 million annually to the depletion of its 350,000 hectares of forest land by direct human activities and climate change. It was equally reported that the Sahara Desert in Nigeria is moving southward at a rate of 600 meters annually and about 100,000 farming families move southwards as a result of desertification which is the resultant effect of climate change in the country.[20]

So it is obvious that Nigeria has a stake in world's struggle against desertification and other forms of climate change. This requires a cooperative effort with other world nations and not a confrontational one. It also requires that clean technology and finance be made available. After all, this is an investment in our global future. The developed world having emitted greenhouse gases for the past 200 years, and its per capita carbon equivalent emissions are still far higher than Nigeria's. Therefore it bears a greater responsibility for reducing greenhouse gas emissions. The developed world is reluctant to reduce its carbon emissions and seeks to compel the utmost possible cuts of emissions on the developing countries.[23]

Therefore Nigeria with its mounting energy needs has no other alternative but to tap non-fossil energy particularly nuclear wind and solar energy. This frees the economy from reliance on energy imports.[20]

From the foregoing discussion, the following points are evident:

1) Climate change is a typical evidence of how domestic issues and problems dovetail with foreign policy;
2) Climate change results from technological activities in nation-states;[24–26]
3) Nigeria has witnessed increased desertification, flooding, rise in sea and ocean levels, worsening migration from rural areas and a decline in economic activities. Owing to desertification, Nigeria has lost 351,000 square kilometers, at the rate of 0.6 kilometers annually;[27]
4) That the Kyoto Protocol is yet to be domesticated in Nigeria, principally because it is a law without the sword.[19]
5) Nonetheless, multilateral cooperation is needed to solve the problem [28,29]

Our leaders must bear in mind that there are two key features of the growth of scientific and technological knowledge that are central to international negotiations. Firstly, scientific knowledge is a specialized one and requires greater contributions by experts into the realm of global negotiations. Secondly, the application of science and technology into the nation's development requires an integration of relevant though divergent disciplines that must solve definite societal problems. Contemporary International Relations demands that the Nigerian negotiators must deal with both the needs for integration and specialization. This is a call for expertise.[30]

Recommendations and conclusion

Recommendations

1) There should be a synergy between the External Affairs ministry and other ministries like the Ministry of Science, Technology and Innovation.[31]

A. Nigeria should accept the reality of functional cooperation with other likeminded countries.

B. Steps should be taken to integrate Science and Technology into our foreign policy objectives.

C. Great nations have practiced isolationism for some time. There is no harm in incorporating the idea of restricted isolation to achieve Nigeria's development.

D. There is urgent need to integrate Nigerian bio-date into a central data base. This to achieve national security development.[32]

E. Nigeria should set the AI targets and meaningfully fund the research targets with performance indicators. At the same time, the country should launch the national education reforms focusing on innovation and entrepreneurship. This measure would help produce and identify our future scientists, engineers and entrepreneurs.[33]

F. Government owned enterprises can use the Singaporean business models to achieve the county's development efforts. Emphasis should be placed on competing internationally at the appropriate time.

G. Nigeria should invest in science, technology and innovation programmers to diversify the economy that is oil centered; to this end, the Nigerian scientists and engineers should be given all it takes to prove themselves in jobs.[34]

H. Universities and other research institutes should be aligned with Nigerian companies.

I. Developments in technological sector cannot be achieved without other improvements in other sectors.[35]

If Nigeria has made strides domestically, in the West African sub-region, Africa and the global world; it is left to imagination what grandeur awaits the nation the moment she is technologically driven.[36]

Conclusion

The issue of technology has not received a pride of place in the mainstream theories of International Relations, International Political Economy and Foreign Policy Analysis. This does not downplay the fact that technology is implicitly present in the assumptions of these theories. It is for this obvious gap that this study had to undertake the basis of Western dominance in Africa in general and Nigeria in particular. That dominance was located in an industrial revolution that was borne as a result of developments of science and technology. It was no coincidence that the two events that led to imperialism went hand in hand. What does a subjugated Nigeria do? Keep on weeping for its subjugation or to take the bull by the horns and develop frontally through the application of knowledge herein called technology? Nigeria must develop through the use of technology. Foreign policy can give a helping hand.[37–40]

Technology has already made an inroad into the realm of foreign policy. It could therefore solve Nigeria problems by first understanding how technology has enhanced modern diplomacy. Nigeria's belief in multilateralism has seen her playing crucial roles in both international

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and regional organizations. Membership of these organizations can help the country resolve some disturbing issues like insecurity and climate change.[41–43]

Technology has also made an inroad in military industrial complex. There is an inter-mix between the level of a country's economy and its military capability. Nigeria need scientific and technological innovations to build its economy, achieve an indigenous technological skills that can help its military. No country can help Nigeria on this, since technologies worldwide are either bought, stolen or adapted. Nigeria must take interest in things produced in Nigeria and grow from there.[44]

But before stealing technology as Japan did and China is currently doing, it must be appreciated that the technology sector does not stand alone. It rests on the platform of other sectors. In order for Nigeria to develop the technological base other sectors must be improved. The other salient sectors are the educational, agricultural and industrial sectors; the infrastructural and power sectors must also be improved. Lastly, the Nigerian mindset of loving everything foreign to the detriment of our home grown technologies and products must change. Nigeria has an immense potential of getting better.[45]

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