

# SCIENCE-SYSTEMS AS A CATALYST TO SUSTAINABLE NATIONAL SECURITY IN NIGERIA

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## ABSTRACT

It is the duty of any government in power to secure and protect its citizens. Security is the pillar upon which every meaningful development in any nation is sustained. There is no nation without a security challenge, but the type of insecurity experienced among the nations and the way it is confronted differs. This research is centered on Nigeria with its multifarious security challenges that threaten its existence and has brought about backwardness in sustainable national development and threat to national security. These security challenges as highlighted are terrorism, herdsman attacks, kidnapping, banditry, political violence, ritual killings, ethno-religious crisis, armed-robbery, militant groups and many more that have metamorphosed into a cankerworm that confronts the nations' existence. These has created a porous security condition that challenges the national security and impedes development. The method proposed in tackling these security issues is the deployment of the right science-systems in the country to address these thorny security lapses trailing the nation. Specifically, science-systems will help enable intelligence, information technology which breads (information and network security, emergency response systems, integrating information), intelligent gathering and monitoring systems, strong and viable national database, energy systems, toxic chemicals and explosive materials, science and technology systems, and training of security agencies on national inclusivism.

**Keywords:** Security, National Security, Science-Systems, National Security.

## INTRODUCTION

The primary responsibility of any government in power is to secure lives and properties. A well secured environment inspires greater minds to achieve greater things that guarantees growth and development of the nation. To secure an environment is to protect it from attack which affects the physical, psychological and emotional well-being of the people. Every meaningful development can only be achieved in an atmosphere of peace and tranquility, which is national security. National security involves effective policing and careful watch against elements that could breach peace or jeopardize the social, economic and political development of the Country (Dada, 2016). The discourse on national security is not only limited on territorial boundaries but encompasses other important areas such as human and political security (fundamental human rights), economic security, environmental security, energy and natural resources security, cyber security, social and food security and the prevalence of internal peace (Hirsh, *et al.*, 2020). To sustain the national security in this modern age requires the deployment of science-systems in the right places. Science-system is the scientific application of knowledge to produce high quality research that provides technology and Information Technology

driven systems. This emphasizes on the development and deployment of technology in all the fields of human endeavour.

Science-systems has been and will continue to be a critical aspect of the nation's security that confronts the pressing issues of our time. The introduction of science-systems into many aspects of everyday life has led to the development of modern concept of information society which offers great opportunities, and the level of insecurity in Nigeria has reached a crescendo where the right science-systems and professionals need to be deployed to fight against all crimes and corruptions just the way it is done in developed countries (Ogbonnaya, 2016). Statistic Times (2020) data shows that China and India accounts for 36% of total World population, yet the countries has fast-tracked their development by embracing science-systems to become global giant in military capabilities, space and nuclear power (Ogbonnaya, 2016; Rajesh, 2020). Also, Brazil that had the same prospect like Nigeria after the Second World War employed the power of science-systems, and today has become one of the largest economies, scientific research, innovation and technological development.

Insecurity in Nigeria today can be blamed on some factors that have been left unchecked for a long time by both the Government and the people, which is threatening the existence of the country (Mohammed, *et al.*, 2020). Some of the security challenges are:

- a) **Book Haram** activities has gone beyond the educational philosophy but politically motivated by some elements that derived joy in slaughtering human beings and rendering them homeless, including several acts of bombings and kidnappings (Chris, 2020). Adua (2018) asserts that the sect enjoys effective support from some well-to-do individuals, religious leaders, allies, admirers of their ideology and highly placed politicians in the North who claim to be Nigerians but are clandestinely working against the State.
- b) **Carnage of ethno-religious conflicts** arises when the relationship that exists between members of one ethnic or religious group and the other in a multi-ethnic and multi-religious society is characterized by lack of cordiality, mutual suspicion and fear, and a tendency towards violent confrontation (Safiyya, 2020). The causes of this conflict rallies on fanaticism, inequity, disregard of other ethnic nationalities, tyranny, bigotry and abuse of positions of importance in the society.
- c) **Militant and Kidnapping activities** in the Niger Delta and other regions of the country has equally threatened the security and the economy of the nation. The incessant bombing of oil facilities and kidnapping of both oil and non-oil

workers including setting fire to offshore oil facilities has destabilized the regions, threatens the national security and crippled economic development (Titilayo, 2020). Kidnapping has become another thriving business in the country as the kidnapers not only targeting the upper-class but the middle and the lower-class.

- d) **Scarcity of well-trained security operatives** of which can physically and intellectually challenge the contemporary security issues are grossly under policed, considering the ratio of security personnel and citizens (Ojo-Eyitope, 2020). The proliferation of deadly weapons and ease of acquisition of these weapons by unscrupulous individuals portend grave security consequences in Nigeria and West African nations (Timothy & Owolabi, 2018).
- e) **Proliferation of arms and porous border** has made it easy for terrorists, human traffickers, drug barons and dare-devil herdsmen to infiltrate and perpetuate heinous crimes and acts of terrorism. The rate of crime and criminal activities in the country portends the potency of illegal and unlawful trafficking of arms and ammunitions for perpetrating violence and heating up the polity.
- f) **Herdsmen and Bandit attack** has been on the increase and this has become a matter of national concern. Many communities in this country had faced severe attacks allegedly perpetrated by herdsmen or bandits. Most of these communities had regrouped to attack the herdsmen or the bandits which is creating a national tension because any attack springs a reprisal attack which fuels a spillover of attacks.
- g) **Economic, systemic, political corruption and hate speech** has generated a lot of violent conflicts and arbitrarily increased the nation's expenditure on internal security. Anekwe, *et al.* (2018) describes it as a problem that militates against Nigeria's development and threatens the fabric of the nation's existence. According to Gubak & Bulus (2018), insecurity for lives and properties increased in the country because corruption has entered the management of the nation's security budgets and suddenly becomes a big-time business, as bureaucrats and military officials diverted security votes and expenditure on defense to personal coffers; and tactically fuel insecurity in different parts of the country to get more funding from all levels of government.
- h) **Unemployment** has posed great danger to the national security. Simona (2021) projected the unemployment rate in Nigeria to reach 32.5% in 2021, and it is expected to increase to 33% in 2022 as it has constantly rose in the past years. When people are unemployed with no hope of living or what to do, especially the youths with so much ideas and energy, they become toxic, volatile or short-tempered, and can channel their mind to any vice because there is nothing to live for.
- i) **Poor governance and Leadership failure** has created political unrest and heightened national threat through hate-speech, separatist movement, electoral violence, corruption, ethnic violence and other vices. When a region feels sidelined

due to poor governance, they take-up arms in protest or threaten for secession. All these creates instability in the country.

- j) **Inadequate funding of research institutions** (Christian, 2009), poses a greater threat to the national security and development of the nation. Scientists leave for a better environment where their work will be recognized, while the frequent strikes cripple the knowledge-base of the nation, and the students taken to crimes and other vices. When the institution is underfunded, the country lacks the right science-systems to solve their problems and this subsequently leads to brain drain of the country.
- k) Given the above scenario, the rising and overwhelming security challenges across the nation is enough to destabilize country. The issue of concern is how these problems can be solved? Will the right science-systems be utilized to secure sustainable peace and security in the country?

## MATERIALS AND METHODS

### Science-Systems and National Security

Science-systems has led us to find out things that give us what we have today. It helps us to find new knowledge to defeat our curiosity on how the world works and develops. No nation, no matter how rich and possession of natural resources can ever be great without the use of science-systems. What makes a great nation is the application of new knowledge in every sector of its economy to provide and secure its territorial integrity. Security is paramount in any nation's development and science-system in this century is the precursor of national security.

National security is the actions and policies taken by a nation against all internal and external threats to its borders, economy, and stability (Jesmine, 2020). It is the physical protection and defense of the citizens and territorial integrity, to preserve its nature, institutions, and governance from disruption from outside; and to control its borders; promotion of economic wellbeing and prosperity of Nigerians in a safe and secure environment that promotes the attainment of our national interests and those of our foreign partners (Elizabeth, 2016; CTC, 2020). This implies that national security fosters economic growth and development of a country.

In order to achieve national security therefore, a country must possess and maintain the necessary infrastructure and knowledge base for telecommunication; adequate energy (electricity generation, transmission and distribution, refining and distribution of petroleum products); agriculture and food security; transportation (air, land and sea); provision of portable water; environmental management, amongst others. These important infrastructures must be robust and have inbuilt redundancy so as to cope with man-made or natural emergencies.

Science-system is the scientific application of knowledge to produce high quality research that provides technology and Information Technology driven systems. Technology is the intermediary between science and national security. The development of science-systems directly links to the development

of technology in a variety of fields – ranging from life and material science to Information and Communications Technology (ICT) sector. The challenges of national security in the nation are growing more complex, resulting in greater demands of the resources. The country needs to invest more in science-systems to curb these challenges and establish defense industry. Investment in the area of information management, stealth, sensor technology, early warning systems, precision guidance, and advanced communications are all products of science-systems (Ogbonnaya, 2016). Preventing the proliferation of weapons and countering those that do spread it is a priority that requires science-systems. Detection and monitoring systems are fundamental to arms control. Providing a high-technology industrial sector encourages research in our universities such that they become globally accepted centers of scholarship that can compete with the best centers of learning in other parts of the world (Ogbonnaya, 2016). There should be a collaboration between the government, industries and academia to achieve this development. Policies to accelerate scientific discovery and technological innovation should be the priority of any administration in the country. It is this combination of science and policy, with all its inherent dangers and promises, seems to assure the future growth of the field of national security (Seng & Haidi, 2019).

Science-systems, the flow of knowledge, and the right to harness facts to make bold contributions to sustainable national security, are operational prerequisites to achieving security in our time. So, it shouldn't be the sole responsibility of the government but the industry, academia, non-governmental organizations, and individuals that play the important role.

## RESULTS AND DISCUSSION

### Science-Systems as a Catalyst to National Security

We need strong science-systems for the protection of national security. Our military and intelligence unit need to be equipped to be on the cutting edge of science. Our national security requires professionals in the fields of computer science, physicists, and biologists as well as our politicians and soldiers. For the country to be able to address national security issue adequately; there is need to focus on the following:

- **Intelligence** - every form of security apparatus in the country must have to be supported by robust intelligence. The country needs intelligent monitoring systems, forensic laboratories, biometrics and speech-recognition systems to intelligent video and swipe-card in some important buildings and businesses (Brent, 2018). The country have to pay more attention to terrorist threats, political statements; ethno-religious threats which present immediate threat to national security. We need technology to pick up the information, analyze it and disseminate to the right quarters. If we do not get the right information to the right person at the right time, then the information we collect is useless (John, 2016). We also have to invest more in foreign language training to some of our security forces and acquire systems that translate languages. The intelligence community must build partnership that links collectors, analysts, and decision makers so as to ensure that key intelligence capabilities are robust and available to achieve national security objectives (Adams, 2016).

- **Information Technology** - the magnitude of crime in the country and its potential for destruction is the justification for using information technology (IT) to facilitate law and order. IT will identify potential threats, share information more readily, provide mechanisms to protect the Nation, and develop response capabilities. There are a number of IT implementation systems ongoing in the nation such as the National Identification Number (NIN), Bank Verification Number (BVN), JAMB's Automated Fingerprint Information System, Internet Banking, Global System for Mobile communication infrastructure in all parts of the country, and Geographic Information Systems. However, the problem is not the implementation but the sustainability of such implemented systems. Technology is used by many countries for security intelligence gathering, preempting crimes, busting those that are on-going while facilitating investigations of the negligible few that succeed (Abobakr & Majed, 2017).

Three priority areas of information technology are:

- a. **Information and network security** – involves the use of rapidly evolving technological capabilities such as high-performance computing, remote sensing, RADARs, next-generation networks, electronic and serial surveillance, and unmanned aerial vehicles, all of which depend on efficient system of signal transmission and processing, have become part of modern military operations and civil activities (Adams, 2016).
  - b. **Emergency Response Systems** – this offers a plethora of opt-in services that can push emergency messages to cell phones through text messages, e-mail accounts, instant message accounts, voicemail systems, sirens, digital signage in buildings, alarm systems, Global Positioning Systems (GPS), and mobile devices with Rave Guardian software that activates timer on the device and carry out surveillance, alerting of any trouble (Adeniran & Yusuf, 2016).
  - c. **Integrating Information** –which involves research in data and text mining, data integration, language technologies, image and video processing, and evidence combination plays a central role in the future prevention, detection, and remediation of security challenges. Government needs to create data warehouse and improve collection and sharing of data which is needed for timely and effective decision making. Also, the need to close gaps between science and research, strengthen the link between research institutions and the higher institutions; and create a link between research institutions and the industry.
- **Transportation System**– this sector has suffered many years of neglect in Nigeria, corresponding with the escalating urban population, has resulted in chaotic and disorganized system with no single transportation policy since independent, and has become an easy target for criminal activities, which hampers economic development (Ogwo & Agu, 2016, Jacinta, 2020). There is need to deploy explosive-detection systems, cargo-passenger screening devices, sensor, surveillance systems, biometric identification cards, which cannot only be deployed to the airport but to all transportation and border points. Also, systems to detect the

movement of illicit weapons and materials could be most effectively deployed at a number of strategic transportation points such as critical border transit points, major global cargo-container ports, airports, and major interstate highways.

- **Strong and Viable National Database System-** to sustain the national security requires an integrated database system. The integrated database system will assist the security agencies to compare forensic evidence with captured biometrics. Nigeria has disparate database system collected from Independent National Electoral Commission (INEC), Telecommunication industries, Banks, Immigration, and the National Identity Management System (NIMC). These databases need to be integrated into a single national database that will provide an easy access to citizens' information and share information between security forces to help combat crime.
- **Toxic Chemicals and Explosives Materials** - toxic, explosive, and flammable properties of some chemicals make them potential weapons in the hands of terrorists. Many such chemicals (e.g., chlorine, ammonium nitrate, and petroleum products) are produced, transported, and used in large quantities (NAP, 2018; Mike, 2020). Hazardous chemicals, explosives (Improvised Explosive Devices (IEDs) and Person-borne IEDs) are gaining traction in Nigeria due to the relative ease of production and widespread availability of raw materials (Jon, *et al.*, 2016). Science has made it easy to use improved and expanded sensors to prevent the occurrence of this sort. United Nations (2018) notified that portable optoelectronic nose that uses sensor and handheld scanner detects and identifies explosive compound. Jamming devices and electromagnetic pulses can also be used to jam frequency signals of other devices and detonate IEDs from afar.
- **Energy Systems-** include the country's electrical supply system and its oil and gas facilities. The oil and gas facilities warrant special attention because it supplies the required gas to power the electricity and also the major economic hub of the country. The country should invest in surveillance and sensor technologies to monitor the activities of pipeline vandals, encroachments on widely distributed oil, gas, and electrical transmission assets and also to defend against militant attacks. These efforts would include simulations of the interdependencies between the energy sector and key infrastructures such as the communication and transportation systems.
- **Science and Technology Systems-** Proper funding of the research institutions will provide collaborations around the World which will result in advanced science-systems for national development and security. This will bring-forth scientists that thinks years ahead to what the security requirements might be and proffer solution using the right science-systems.

#### Conclusion

Science-system as a knowledge enables innovation, and its integration into the nation leads to sustainability of national security

and development. To be among the great countries in the world requires to keep in mind the visions, creativity, innovation, and entrepreneurial spirit of science-systems. The country needs to develop and utilize robust systems for protection, control, and intelligent gathering for our security forces. Security systems for border control, shipping containers, transportation points and surveillance systems that can monitor proliferation of weapons and other sensitive equipment at public places need to be deployed. Strong systems for communication and sharing of instant information by security forces must be made available. Modern scanning and sensor devices that can detect toxic, chemical and explosives should be strategically placed at major locations of the country. There is need to adequately train the security agencies on national inclusivism with good remuneration and timely payment to ensure loyalty, and to avoid leak of sensitive information to the wrong people. Finally, science-systems in support of national security will do us little good unless we have at least honesty in government that is devoid of lying and suppression of important information for national security and development.

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