

## **THE ROLE OF GEOGRAPHIC INFORMATION SYSTEM (GIS) IN EFFECTIVE CONTROL OF TERRORISM IN NIGERIA**

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### **Abstract**

*Although Nigerian authorities indulges in frantic efforts to curb it, terrorist groups have continued to perpetrate their heinous crime. The Boko Haram terrorist group have continued to carry out attacks in the country which has resulted to wanton destruction of lives and properties. This situation calls for urgent serious steps to be taken towards the effective control of terrorism in the country so as to restore peace, order and security. This paper analysed the role of GIS (Geographic Information System) in effective control of terrorism in Nigeria. Using secondary data, the paper argued that GIS can be useful in monitoring terrorists hot spots, possible targets, movement of arms and suspects, as well as, intelligent gathering and accurate profiling of suspected persons, with the view of interrupting, intercepting and possibly smashing intended terrorists attacks in the country. The paper identified many challenges associated with the GIS project which include, paucity of funds, inadequate power supply, difficult physical environment, politics, corruption, bad attitude of security personnel, ethical issues, etc. It however recommended that GIS should be at the center-point of policies bordering the control of terrorism in the country. That GIS technologies should be acquired and installed accordingly and that GIS terrorist control units be created while more personnel should be recruited and trained on using GIS to enhance successes.*

**Keywords:** Terrorism, GIS, Control, Technology, Challenges, Security, Crime Management

### **INTRODUCTION**

Nigeria is today one of the most populous country in the world with the population of 140 million people (NPC, 2006). It is blessed with abundant natural resources for both local consumption and commercial purposes. Oil and agriculture are the main stay of the economy. It has a landmass of 923, 768km<sup>2</sup> which is largely fertile and arable (Onu, F. 2014). Infact, Nigeria is

among the sixth richest oil producing countries in the world with its nearly unquantifiable oil wealth. It also boast of over 50 universities among many over tertiary colleges and technical schools. The country, no doubt has great potentials for industrial and technological development. Yet, it is faced by very serious peace and security challenges as a result of terrorism.

Although terrorism is not a new phenomenon, it is now daily occurrences in the world. Terrorists activities of the Boko Haram in Nigeria is no doubt very alarming. It has suddenly grown from sporadic bombings of public buildings and banks to constant suicide attacks, devouring and capture of whole communities, slaughtering of school children and kidnapping of large number of school girls and women (Igbkemen, G. & Umar, S. U. 2014). Not less than 18000 lives were lost since the beginning of Boko Haram terrorism. As at today, they have captured 14 local governments across four states of the federation with unestimated amount of properties destroyed and uncountable number of people including women and children been kidnapped and kept under captivity. Over 200 Chibok school girls that were kidnapped by the Boko haram have remained in captivity for over 200 days now. However, Nigerian law enforcement agencies have been working round the clock to checkmate the Boko haram menace in the country. Despite all their efforts and very huge budgetary spending, terrorism have perpetuated. This, calls for a more effective measures towards curbing of terrorism in the country.

Advance countries of the world including the USA, Britain, Germany, etc, have since involved GIS technologies in combating crime in their societies with great success recorded (Ahmed, A. & Salihu, R. 2013). Although GIS is new in Nigeria, it can play the required role of effective policing of terrorism. This paper utilised secondary data to explain how the use of GIS can greatly enhance effective policing of terrorism in Nigeria. The major aim is to identify areas of its applicability towards restoring peace and security, as well as, identify areas of possible challenges and to recommend way forward. In the final analysis, the paper suggested that acquiring GIS technologies and its involvement in policing can tremendously enhance efforts at combating terrorism in Nigeria.

## **CONCEPTUAL CLARIFICATIONS**

### **Terrorism**

Terrorism: the meaning of this concept is very contextual as there is no any consensus among scholars or even government and nongovernmental agencies. But many human actions can be deducted from the varied conceptions as the characteristics of the term terrorism. Such will include terror, violence, fear, intimidation, arson, bombing, killing, murder, maiming, etc. It

usually refers to the killing of innocent people (Igbaekemen, & Umar, 2014). United Nations report described terrorism as any act intended to cause death or serious bodily harm to civilians or non combatants with the purpose of intimidating a population or compelling a government or an international organization to do or abstain from doing any act (Igbaekemen & Umar, 2014).

However, for the purpose of this study, terrorism refers simply to the perpetration of indiscriminate and systematic acts of terror or any violent acts done to create fear and intimidation for the purpose of forcefully achieving certain social, economic or political goals. Example of such violent acts that constitute terrorism will include kidnapping, bombing of public infrastructures, and mass killing of defenseless or non-combatant citizens or civilians, as well as, armed robbery, rape, maiming, arson, etc. It is mostly political in aims and motives, violent or equally important threaten violence. It is usually designed to have far reaching psychological repercussions beyond the immediate victims or target, perpetrated by sub-national groups or non-state entity with identifiable chain of command or conspirational cell structure. To understand terrorism, is to understand their basic objectives especially done in training camps. A terrorist training camp is a training camp whose purpose is to teach students methods of terrorism. Terrorists train how to launch attacks, ranging from suicide bombing practice to field combat. Terrorists who perpetrate these unlawful acts of violence exist in all societies, across all levels of society, political and religious divides, as well as, social and economic classes. But their modes and goals of operation differ from one group to the other and from society to society. They are often located in regions for the aims of those conducting the training, or in traditional areas of extremism, like Pakistan, Afghanistan, Iraq and Somalia (Igbaekemen, G. O. & Umar, S. U. 2014). They also operated in Iraq, Lebanon and Syria. Use of parks and wilderness areas is common. Examples of terrorists organisations include but not exclusive to, Alqaeda network, ISIL, Al shabab, LRA, Boko Haram, Hamas, Abu Sayyaf, FERC, etc (Igbaekemen, G. O. & Umar, S. U. 2014).

## GIS

An acronym for Geographic information Systems, it refers to existing computer system that captures, records, stores and analyses information about features on earth's surface (James, O. 2014). It is also characterized by procuring information relating to features and there locations on earth surface such as highway, monitors events as they happen, retrieval and display of spacial data, as well as, mapping. GIS relies heavily on remote sensing which involves aerial sensor technologies that detects and classify objects on earth by means of propagated signal from either aircraft or satellite or both (Ahmed, A & Salihu, R. 2013). It also involves geographic profiling where locations are digitally entered by address, analysed with patented algorithm that

produces a probability surface showing likelihood address of targets (Rossmo, K. 2000). GIS emerged with the rise of automated computer technological revolution and has so far proved to be very effective in solving many complex social, economic and political problems of mankind. Already, it has resolved many crime issues in the advanced world (Radoff, D. 1993).

## **THEORETICAL CLARIFICATION**

This paper adopts the functionalist theoretical perspective. Functionalists see society as an integrated social system consisting of many parts coming together to make the system work and achieve its purpose. That, as it exist and continue to evolve, the system develops some faults and challenges. However, that for the system to perpetuate, it evolves ways and means, or patterns through its inherent internal mechanism to resolve the problems. It can always adjust to the new trend to meet the needs of growth and development.

Thus, for them, human society exist for the purpose of human existence. As it evolves and achieve development, problems like crime, poverty, hunger and unemployment emerge generating serious problems of insecurity. But whenever it occurs, society should initiate and create ways and means of resolving the problems through its various internal mechanisms such as social institutions. For them, problems like terrorism are associated with growth and development and are not only normal but inevitable. But that can be resolved through normal process of social adjustment (Shekwo, J. 2013). In that vein, the inadequacies of law enforcement agencies in policing terrorism in Nigeria can be resolved by adjusting to the modern trend of policing such as the use of GIS. According to Yelwa, S. A. & Bello, Y. (2012), GIS allows crime analysts to identify crime hot spots along with other crime trends and patterns. Rossmo, K. (2000), also argued that geographic profiling through the GIS uses the nearest principle as a key to track offenders within a limited range that is comfortable to be arrested by law enforcement officers. It is very important to note that the occurrence and distribution of terrorism like other crimes in all its ramifications is of geographical relevance because it has to do with the human environment (Yelwa, S. A. & Bello, Y. 2012). Hence, the GIS is functionally necessary and inevitable in effective policing of terrorism in modern Nigeria.

## **The role of GIS in effective control of Terrorism in Nigeria**

In doing this, it is an imperative understand the geography of the area where terrorism is predominant. Although there have been sporadic cases at other areas including Abuja, most terrorists activities takes place in north-eastern Nigeria consisting of six states of Borno, Yobe, Adamawa, Gombe, Taraba and Bauchi. A cursory look at these areas reveals boarder locations with other countries like Cameroun, Niger, and Chad (Igbekemen, G. O. & Umar, S. U. 2014).

The porousness of the boarder makes easy movement of terrorists and arms among the neighboring countries. Border towns and settlements also serves as hideouts for terrorists. The area is partly sahara and a forest belt along the Chad river basin, and sahel of mountains around Adamawa and Gombe. Thick forest locations like Sambisa make it suitable for the terrorists to establish their basis. The north-east is also characterised by interconnected villages and adjoining cities made up of local serene, hard topography and ancient city settlements of mostly squalid suburbs and shanty towns. Road is the commonest means of transportation in the area and it consist long highways of very far distance making it very difficult for monitoring and control by traditional security system.

Thus, the geographic nature of the north-east, no doubt, reveals a pattern of conspicuous terrorism. From the above vivid geographic description of the north-east, it is clear that GIS can play a very important role in effective policing of terrorism in Nigeria in the following ways:

- 1) GIS can help security agencies to determine potential terrorists sites by examining and displaying them in a geographical layered, spacial interface or map. This allows for close monitoring without having direct contact with the suspicious communities.
- 2) Through the GIS automated system, terrorists can be monitored, tract and smashed across borders and highways. This is because the difficult terrain of the north-east, long distanced highways and the ancient nature of the cities can now be easily penetrated by GIS.
- 3) The Global Positioning System (GPS) which is a GIS software device inserted and used in phones can be utilise in locating the areas where terrorists are communicating, as well as, their associates. This will allow for easy tracking and gathering information on financial backbone of terrorism by law enforcement agents. It will also enable the security officials to monitor and quash impending attacks.
- 4) GIS helps to map populations, fixtures and equipment identifying high risk or potential terrorist persons and hazardous locations. This reduces the potential for terrorism by providing better control and command.
- 5) GIS mapping technologies can be utilised by appropriate security agencies to create terror buffer zone. That is a particular area specially delineated and covered by full mapping for analysis and control. So that in an event of any opportunist terrorist attacks, the buffer zone can be quickly condor off to easily fish out the culprits. Thus it enable geographic profiling of locations and persons so that it points out that the suspect can be found within a limited range.

## Challenges of GIS in effective control of terrorism in Nigeria

Utilising GIS to effectively curb terrorism in Nigeria can be associated with many challenges including the following:

1) Inadequate skilled personnel: To make good use of the GIS, enough skilled personnel is a prerequisite. GIS and its application is new in Nigeria, as such, the available needed skillful manpower to man it especially among the security personnel may be lacking.

2) Paucity of funds: To design, acquire and install the GIS technology that will cover targeted area will require very large funds. So much funding will also be necessary for recruitment of staff and operation of the systems and its applications. Such very high amount of funding may not be available.

3) Unavailability of records/data: GIS technology relies almost squarely on computerize socioeconomic and geographic data. Availability of such records eases the successfulness of GIS. However, record keeping is one of the major problem of law enforcement in Nigeria. For example, correct and current crime statistics can hardly be found at the police stations and where it is available, it is manually kept and susceptible to easy destruction. The same obtains with geographic information of the country. This no doubt constitute serious impediment to the successful operation of GIS and the control of terrorism in Nigeria.

4) Topographic impediments: The geographic nature of an area goes a long way in determining successful implementation of the GIS. The north-east is characterised by rugged land surface, mountains, river basin, bad weather and some thick forest. GIS coverage in this kind of environment can be very difficult and limited because of signal inhibition. This kind of difficulty also generates more cost in terms of funding and maintenance. In the long run, using the GIS technology to curb terrorism in the area could suffer serious set back.

5) Politics: politics plays very influential role successful implementation of public policies and programmes in Nigeria. The political interest of the men in power and authority, including which section of the country they come from mostly determines government's seriousness in making things work. For example, President Goodluck Jonathan has been accused of paying lip service to the issue of Boko Haram for the fact that he is not from the north-east. This kind of bad politics can hinder smooth implementation of the GIS as a tool for curbing terrorism in Nigeria.

6) Corruption: Nigeria is one of the most corrupt countries in the world. Nigerian public service including the security service is characterised by serious corruption. Although large sums have always been allocated to the Nigerian defense sector in the annual budget. Between 2013 and 2014 alone, not less than 1trl naira has been allocated and released to the defence sector in the country. Yet, insecurity has remained the order of the day. Terrorist activities has more than doubled with not less than 18 communities overrun and captured by Boko Haram during this

period. As in most cases, monies voted for security of this nature are corruptly embezzled with impunity by those incharged. Hence, corruption constitute a big impediment to the successful utilisation of the GIS in curbing terrorism in Nigeria.

7) Ethical issues: socio-cultural and religious norms and values can also impede successful utilisation of the GIS to effectively fight terrorism in Nigeria. For example, most religions and cultures preach brotherhood and seriously frowns at any act against this value. Using the GIS technology to monitor suspected terrorist by an operator may be viewed as antibrotherhood by such operator coming from a culture or religion that preached brotherhood. Islam as the dominant religion in the north-east practice "pudah" i.e absolute family privacy. Any act that contravenes the pudah practice is considered as forbidden and seriously frowned at/punished by religious laws/sharia. This moral principle is antithetical to surveillance operation by the GIS technologies. Again, its introduction in these areas may be highly resisted by adherents of religions and traditions on moral grounds.

8) Attitude of the security: GIS smooth operation may not be possible due to very bad attitude of Nigerian security operators. The various security outfits are bedeviled by high rate of indiscipline. Officers and men of the service have lackluster attitude to work. Most of them pay attention to certain cleavages than governing regulations. In most operational cases, ethno-religious factors come to play hindering successful operations. For example, officers from the northern extraction of the country, especially Muslim, have often been accused of having sympathy to the Boko Haram because of the terrorist link to Islam and the northern origin. The systematic frustration characterising the security structure in the country is demoralising. The welfare of service men is usually handled with kid gloves. Salaries are not paid on time, accommodation and other social infrastructures are either inadequate or in very bad shape. Motivational requirements to boost performance are nearly absent. These and many other social environmental factors dampen moral within the security outfits and as such greatly affects performance negatively. Hence, with these attitudinal problems, the successful workability of GIS in curbing terrorism in Nigeria is very difficult.

9) problem of electricity: the GIS cannot be very effective without constant adequate electricity supply. In Nigeria today, electricity supply is a general problem. In places where it is available, it is epileptic where as in some areas it is never there for upto several months. Operating with alternative sources like generator, solar or inverter as the case may be could be very costly. This situation, no doubt, pose serious challenge to enhanced policing of terrorism in Nigeria. The factors mentioned above no doubt constitutes great challenges to an enhanced policing of terrorism via the GIS technology in Nigeria.

## SUMMARY AND CONCLUSION

It has been argued that terrorism is not only alarming in Nigeria but it has continued to spread widely at an unacceptable proportion with a perpetual untoward consequences. This has also resisted every effort made to successfully tame it by the Nigerian authorities. But terrorism can be put into effective control using the GIS technology. However, successful implementation of GIS towards enhanced policing of terrorism in Nigeria is faced by many daunting challenges are surmountable through certain drastic measures as recommended below.

## Recommendations

- 1) there is an urgent need for massive acquisition and installation of GIS equipments in the country.
- 2) there should be immediate training of security personnel who will handle GIS technology to curb terrorism in the country.
- 3) terrorist hot spots in Nigeria should be map out by the security agencies in collaboration with geographers and criminologists for the purpose of constant monitoring using the GIS so as to forestall impending attack by terrorists.
- 4) data gathered by means of GIS on the profile of suspected terrorists and terrorists buffer zones should be handle by professionals for effective analysis and control.
- 5) government should embark on rigorous mass enlightenment drive on the profound need of the use of GIS for curbing the terror monster. This should target at breaking every socio-cultural and religious barriers.
- 6) non-governmental organisations should also be galvanize for support towards the success of the project.
- 7) funding is very important in the success of the project. Government should redirect its finances to the area of great need such as the GIS. It can do so by cutting down its funding on recurrent expenditure and other wasteful ventures.
- 8) corruption in the public system especially within the security outfits must be drastically tackle. Security agencies must purge themselves of all acts of corruption if the GIS must be successful in tackling terrorism.
- 9) issues concerning motivation of personnel who are involve in the GIS for curbing terrorism project must be taken seriously for good performance and result.
- 10) constant training of GIS personnel and maintenance services of GIS equipment should be a top priority.

11) power/electricity supply problem in the country should be tackle with immediate effect. Alternatively, the GIS project should possibly have independent power/electricity sources for effective performance and good result.

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