

Contemporary Issues in Urban and Regional Planning and Development in Africa

A Festschrift in Honour of
Professor Aina Thompson Adeboyejo



Editors:

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Chapter 26

Data and Database Management for Sustainable Planning in Nigeria: An Overview

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Introduction

Information is critical for making informed decisions at the local, state and national level. Nigeria, like many developing countries of the world is presently faced with diverse socioeconomic, environmental and infrastructural challenges. While some of these challenges often emanate from poor governance, others are just as a result of the more pluralistic nature of the society. For instance, there are problems such as population explosion, migration, housing deficit, unemployment, waste management and traffic congestion. Others are crime and insecurity, inflation and land border disputes among others. These problems and growing regional inequalities among others continually plague less developed countries, such as Nigeria and hopes of accelerated development are difficult to realize without proper planning. The pride of any government is the attainment of inclusive growth and development. However, for a nation to achieve this phase of development, some pre-requisites, which include but not limited to socio-political, infrastructural and economic stability need to be met.

These complexities in human society, coupled with the need for effective public service delivery to the citizenry require thorough planning, and to plan well, there is need to have access to series of information. Besides, strong and reliable database or information repository where policy makers and researchers can have unhindered access to information about all human endeavors is a *sine qua non* for national planning and development. This is necessary to have an in-depth knowledge of various ingredients required for effective and sustainable planning. Though, some data and statistical records may be available in some organisations, both public and private, these can only cover some few areas of our life. Planning in most developing countries is severely handicapped by widespread lack or inadequacy of information. Inadequate information on some components of human endeavours (such as population figure, migration data, employable graduates and the number of unemployed among others) in Nigeria often times inhibits adequate socio-economic, physical and environmental planning.

Data can be defined as “factual information used as basis for reasoning, discussion or calculation” (NBS, 2011). In the same vein, data generation for development can be conceived as the process of gathering a body of factual information about the aspects of development of interest for the purposes of reasoning, discussion and calculations around the development status, process and prospects of the society (Ajakaiye, 2012). A national database is an organized data or numerical environment where every citizen of a nation and the immigrants are uniquely identified and possesses a strong national identity. National database may be population, identity, security, electorate, group or association's classified information or data of national interest (Onakoya, 2011). In

Nigeria, there are several challenges critical to national development such as unemployment, crime and security challenges and traffic problems among others. Information on the causes, nature and other indices relating to a particular problem present a viable insight into tackling such problems and planning for a promising future. Central national database is required to have access to those information for processing and usage.

According to Van der Waldt *et al.*, (2002), information is a fundamental resource to both government and the private sectors alike. It is part of human and material resources without which an organization or a nation can achieve its full potentials in development. Igboke-Ibeto (2013) established that information can be maintained and enhanced through appropriate records management and effective records management is fundamental for good governance, effective and efficient administration. It exclusively forms the basis for formulating policies, managing resources and service delivery. Thus, information cannot be effectively and efficiently managed without the implementation of a database, most especially, while dealing with large amount of data. This is because effective data processing requires information gathering, sorting, storage as well as retrieval when needed. Hence, a database is an organized collection of data, generally stored and accessed electronically from a computer system.

A good database design is important in ensuring consistent data, elimination of data redundancy, efficient execution of queries and high performance application. Database is an essential element of planning and development because it organizes data in a manner that allows one to query data, sort data, and manipulate data in various ways for easy applications. Database management system is, therefore, important because it manages data efficiently and allows users to perform multiple tasks with ease as it stores, organizes and manages a large amount of information on a single platform. As stated by Daniel (2018), countries have different identity systems when it comes to information architecture. Some countries have developed strong centralized systems, either as a Ministry or an autonomous agency dedicated to providing registration and identification services. It can however be noted that some countries, Nigeria inclusive rather than having complementary identification systems, decide to create multiple and yet incompatible competing identification systems. In such cases, there are identities such as voter Identity, tax Identity, bank Identity and national Identity cards among others just for a single individual.

The multiple information, apart from being domiciled in different organisations are not also streamlined in a common pool and thus, does not in any way help in efficient planning as it makes difficult aggregating information for proper planning and development. Daniel (2018) posited further that since Nigeria's independence in 1960, several attempts have been made, and still on going to identify the citizens but unfortunately, each attempt had its shortcomings, leaving trails of failures and multiple databases that add no value to national existence. One such exercise is that of the National Identity Management Commission (NIMC) which is yet to be fully operational as a reliable and one single database. Other multiple data capturing exercises for identification purposes have gulped several billions of naira but none could stand as a reliable database for national development. As a pathway for national development, data on several areas and database management need to be adequately established and put in proper control for a successful development. In the analysis of Ademola-Olateju (2016), if the national aspiration is to build a world class infrastructure, on the path of economic rejuvenation, educational development,

social security, and full employment opportunities, Nigeria must embrace an honest census and credible information system.

With increasing spate of planning problems such as traffic congestion, insecurity and unemployment among others and the quest by various concerned institutions to proffer lasting solutions, there has to be adequate information and reliable data for up to date planning (short plan, medium or long plan). Although Nigeria's public agencies have many data sets that contain data on several aspects of the economy, several gaps still exist. These according to Fadayomi, (2013) include a lack of sufficient information on some types of migration, limited reporting on data collected and processed, insufficient use and analysis of administrative data sources, poor data sharing, lack of public access to data, needs for improved data management infrastructure, lack of quality control, lack of sufficient informative fields in most data sets. These gaps hinder the use of data to inform government programs and policies. For the national aspiration to building state of the art infrastructure, economic growth and equitable distribution of income as well as educational development, social security and political stability to be achieved, there is need for a reliable data and effective database management. In order to achieve the sustainable development goals, data on all the indicators are necessary whereas some of them are not publicly available. In particular most of private sector data produced in different industries are used internally by the concerned institutions and are limited for public use. Only very few of the data gathered feed into the official statistics. Thus, this paper seeks to examine the prospects and challenges of data and database management in Nigeria for sustainable planning and development.

Efforts in Building Data System

The importance of data in planning and development of human race and the need for data in the 21st century cannot be over emphasised, realizing this fact, the UN established the Global Pulse Department whose core responsibility is to harness data and use it to accelerate development (Odhiambo, 2019). The initiative was borne out of the realization that digital data offers the opportunity to gain a better understanding of changes in human well-being, and to get real-time feedback on how well policy responses are impacting on people's lives. It presents an opportunity for forging public-private data sharing partnerships, generating high-impact analytical tools and approaches; and driving broad adoption of useful innovations across the UN System.

Nationally, planning in all ramifications relies basically on data. Accurate and reliable data as posited by Akanbi, (2016) is a very scarce commodity in Nigeria, this he submitted, is due to problems arising from the inadequacies of the federal office of statistics, the unwillingness of Nigerians to reveal information and the outright manipulation of data for pecuniary or other gains. This assertion is most illustrated in the fact that since independence till date, nobody has been able to give a definite figures on the country's population size. Not even with several population census conducted, as almost all of them are shrouded in manipulations and rejection of results. This makes some of the results unreliable and unaccepted for adequate planning. A country that does not know its population would undoubtedly find it difficult or outrightly impossible to determine the other vital

statistics such as birth-rate, death-rate, number of out of school children and the other demographic changes in the population which are essential for planning. The absence of reliable background data has made the use of social indicators difficult and inadequate for plan preparation, implementation and the monitoring of national development.

Several attempts have been made in the past, and still ongoing in an effort to make data available for national development in Nigeria. Also, some organisations have also been saddled with the responsibility of building national database and repositories where information on series of human endeavours can be accessed for planning. These efforts range from the establishment of the National Bureau of Statistics as a custodian of all national data to the most recent launching of the National Identity Management Commission (NIMC). Besides, other organisations both formal and informal, public and private as well as NGOs are parleyed with to capture information for development. This however, is only coordinated by the National Bureau of Statistics, the body saddled with the responsibility of the management of all national data.

Table 1: Elements of National Statistics Systems

S/n	Categories of elements	Actors
1	Data producers	The National Bureau of Statistics (coordinating agency of the system), associated ministries and agencies (Central Bank, National Population Commission, Independent National Electoral Commission), public authorities/agencies, state statistical agencies and local government statistical units
2	Data users	Policy/decision makers, researchers, and research and educational institutions
3	Data suppliers	Formal and/or informal establishments such as households and individuals, MDAs, NGOs etc.
4	Research and training institutions	Research and training institutions

Source: Adapted from Akanbi, 2016

Characteristics of Good Data Management

Good data management includes developing effective processes for consistently collecting and recording data, storing data securely, cleaning data, transferring data, effectively presenting data and making data accessible for verification and use by data users. Good data according to Iyilade, (2015) must have the following characteristics.

- Validity:** Data should be able to measure what they are intended to measure.
- Reliability:** Data are measured and collected consistently according to standard definitions and methodologies; the results must be the same when measurements are repeated.
- Completeness:** All data elements should be included. In other words, the definitions and methodologies

must be specified.

- iv. Precision: Data should have sufficient details.
- v. Integrity: Data should be protected from deliberate bias or manipulation for political or personal reasons.
- vi. Timeliness: Data should be up to date and information is available on time. The information needed for today's planning should not be outdated, otherwise, the planning is defective.

Types and Sources of Planning Information/Data

In solving societal problems, different data are captured and processed to arrive at results. Majorly, information on individual person, economy, education, socio-cultural and the general environmental phenomena may be needed to know what has happened in the past, the current situation as well as to forecast the future. There are many data sources and types available to government for the purposes of formulating policies and strategies and programmes designed for promoting the sustainable development. These data also come from different sources where they had either earlier been captured, processed and sorted for variety of uses or newly sourced from the field. The information can therefore be categorized into different status for different planning purposes.

Types of Planning Data

- i. **Demographic Data:** Demographic data concerns the statistics about the population of a particular area. The area may be as large as a nation or country or a smaller unit such as a house. In other words, demographic data has to do with the socioeconomic characteristics of people residing in a geographical location. Array of issues come under this type of data and they can be put into different uses ranging from individual sectoral to national planning. The data include but not limited to those under personal such as gender, age, marital status, place and date of birth, educational qualification, occupation and income. Those related to housing may come in form of residential type, household size, and land tenancy, building characteristics by the facilities available for use and neighborhood qualities among others. Information about individual's health status and those of crime also form part of demographic data. These data profoundly affect how important decisions are made for planning and development. Demographic data do not only give organisations and countries information needed to plan future investments and services, they also help government to determine what infrastructural facilities, educational facilities and economic projects move to a particular community at a given period. In fact, demographic data impact nearly every aspects of people's life: how far and often people travel to the store and cost of their purchases, how much they pay in property taxes, and what benefits people received from governments etc.
- ii. **Census and Housing surveys:** These involve systematic gathering and recording of demographic and housing information from the total population.

- iii. **Household surveys:** These are designed to provide information on demographic and socioeconomic statistics from a randomly selected sample of the total population. Household surveys can also be limited to specific geographic areas.
- iv. **Agricultural surveys:** Provide data on agricultural production systems and practices based on a random sample of the population.
- v. **General Administrative data:** These refer to information collected primarily for administrative or management purposes including health records, tax, educational records, welfare, etc.
- vi. **Civil registration and vital statistics:** These refer to Administrative data that records vital events in a person's life including birth and death, marriage, divorce and adoption among other vital statistics. These types of data are domiciled in hospital records, civic registers in local governments and National Population Commission.
- vii. **Economic statistics:** (including labor force and establishment surveys and trade statistics): These record the performance of economic agents in relation to global, national and local markets as well as indices such as Gross Domestic Product (GDP), Gross National Income (GNI), national poverty levels, household income, employment status, domestic revenues, private flows and trade statistics (CBN, 2014). They can be sourced from the Central Bank of Nigeria, Nigerian Custom Services and Federal Inland Revenue Services among others.
- viii. **Geospatial data:** Refers to any environmental and socioeconomic data that include location-specific information. Integrating geospatial data with household surveys can enable disaggregation and analysis by spatial characteristics, for example, proximity to roads or levels of urban development. This kind of data are mostly related and relevant to physical development and the built environment. They can be sourced from planning authorities and urban development agencies.

Table 2: Nigerian National Statistical System

S/n	Data producer	Data users	Duties
1	National Bureau of Statistics (NBS)	NBS, Government, International Organisations, academics and research institutions, organized private sectors	Macroeconomics and socioeconomics statistics
2	National Population Commission	Government, international organisations, academic research institutions and organized private sectors	Demographic and health survey, education data survey, population and housing census survey, migration statistics and civic registrations
3	Central Bank of Nigeria and its agencies	NBS, government, international organisations, academics and research institutions, organized private sectors	Quarterly economic survey, financial institutions survey, balance of payments, financial and banking sector.
4	Public authorities/agencies, state statistical agencies and local government statistical units	NBS, government, International Organisations, academics and research institutions, organized private sectors	Administrative data/statistics

Source: Adapted from FGN, 2007

Sources of Data for Planning

Several sources exist from where planning data can be drawn for national development. In fact, there are as many sources as the types of information available. While these sources can be formal or informal, data can also be drawn from public and private sources, though with adequate verification and processing, adequately backed with facts. The following sources though not exhaustible, are where data can be sourced.

1. National Bureau of Statistics: This is the official custodian of information in Nigeria. It works in conjunction with other bureaus of government to gather data on virtually every human facets, process, and store and made them available to data users. The other bureaus with which the NBS works to get their information include the National Planning Commission, Federal Ministry of Health, National Population Commission, Nigerian Stock Exchange, Nigerian Embassies and High Commission, Economic and Financial Crime Commission, Central Bank of Nigeria and Ministry of Finance among several other agencies of government. The synergy is created to ensure adequate and seamless acquisition and processing of data that can be reliable and acceptable to all. There are several types of

data categories handled by the NBS are enumerated as follows:

- i. **The National Integrated Survey of Households (NISH):** The scope of this heading covers the household composition, household amenities, employment, health and education among others classified into this category.
- ii. **National Integrated Survey of Establishments (NISE):** This category of data covers about nine sectors ranging from agriculture, mining and quarrying, building and construction, manufacturing, wholesale and retail trade, organized road transport, private professional services and other personal services. They include information on activities of establishments, ownership of businesses, employees, wages and salaries, cost of production and operation and production capacity etc.
- iii. **System of Administrative Statistics (SAS):** This category concerns administrative data cutting across establishments and institutions in the area of education, housing, public administration and government finances.

2. Central Bank of Nigeria: This is the apex bank in Nigeria, also referred to as bankers' bank. The CBN coordinates and regulates the activities of all other commercial banks by a way of rolling out policies. It also oversees exchange rate policy. Series of economic policies are domiciled in the Central Bank of Nigeria and thus, it remains a veritable source of data such as monetary policies, exchange rates, import and export and a whole lot of data relating national economic indices.

3. Federal Inland Revenue Services: This is an agency of government saddled with the responsibility to oversee taxes and revenues of government at the federal level. It monitors tax returns of both individual companies and corporate establishments. This agency houses the revenue receipts of the nation and can produce virtually all data relating to taxes like the amount realized per annum, sources of receipts and list of defaulters etc.

4. Hospital Management Boards: This is the agency in charge of all hospitals in the country. They are established by law to oversee all health facilities from the primary health cares to the tertiary level. Data on all health related issues such as birth and death registrations, contraceptive prevalence, child immunisation and child malnutrition can be drawn from this agency. Family planning, illnesses and causes of deaths among other associated information are also domiciled with the Hospital Management Boards.

5. Federal Road Safety Corps: This agency of government handles vehicle licensing and registrations, road traffic management and other areas covered in the act establishing it. Therefore, it offers up to date information on all issues in its jurisdiction, such as the population of vehicles in the country based on types, drivers with valid drivers' license, number of road mishaps and their causes etc. All these may be useful in traffic study.

6. Independent National Electoral Commission: It is an agency of government in charge of the conduct of elections in the country. It oversees every activities leading to successful conduct of national elections ranging from registration of parties and voters, screening of candidates for electoral offices. INEC also enlightens the electorates by a way of education and houses the list of voters and administers same for the purpose of elections. Several data can be retrieved from INEC for national development.

7. National Population Commission: National Population Commission oversees the conduct of census in Nigeria. Several population indices are included in their questionnaires each time they carry out their exercise. Generally, National Population Commission does population and housing census in order to know the population of the country, their demographic characteristics, housing and household capturing. There are several indices used in achieving the goal: gender, income, educational qualifications and employment. Other include housing types and characteristics, household sizes and property ownership among other several information. These data when processed become ingredients of national planning and development (NPC, 2016).

8. National Universities Commission: This agency is in charge of tertiary education as concerns the universities and its administration. The National Universities Commission regulates the activities of Universities across the country and this offers it the prime opportunity to possess all data relating to university education in terms of curriculum development, accreditation, staff development and general setting of standards for universities education. Therefore, the agency presents a ready-made source of data in its area of jurisdiction when it comes to national planning.

9. Nigerian Security Agencies: All the security agencies in Nigeria such as the Nigerian Army, the Police Force and Nigerian Air Force have their statistics units where information concerning their activities are recorded. In the Police Force for instance, data covering all areas of crime and insecurity can be acquired from their records. When this data is processed, it can be broken down to suit different purposes, such as crime by year, gender, zones and other sub divisions needed for appropriate security planning. In a research on crime and insecurity, such records can be retrieved and broken down to analyse crime by neighbourhoods, cities or states and zones in Nigeria.

10. Ministry of Interior and other MDAs: Ministry of interior is in charge of overseeing the Nigerian Immigration Services, Nigerian Correctional Services and Nigerian Security and Civil Defence Corps and saddled with the responsibility of handling issues relating to internal affairs of the country. Like other agencies, it is a veritable source of information on immigrants and emigrants, civil security and several other information on the affairs of the country. Besides, there are other Ministries, Departments and Agencies in Nigeria, which are responsible for sundry issues concerning people and activities. While some of them are specially established for specific assignments, others may for day to day running of government functions. In any case, all MDAs are statutorily backed by law and are therefore recognized accordingly. They serve as veritable sources of information/data generated from their domains and these information can be retrieved and applied in planning and development of national policies.

Despite these wide sources of data and statistics available to government, quite a number of challenges have been observed in statistical systems especially in developing countries (Sustainable Development Solutions Network, 2015). These problems range from high cost involved in collection of data, currency to genuineness. A typical example is census data which many developing countries, Nigeria included, are unable to conduct as regularly as they should primarily due to the high costs involved. The last census in Nigeria as a case study was conducted in 2006, another one due for the year 2016 could not hold due to series of logistic problems of which lack of fund

stands out.

Challenges Associated with Data and Database for Planning and Development

In spite of the several roles data play in the planning and development of a nation, it has been observed that data in developing countries, Nigeria inclusive, is faced with challenges which in most cases hinder the smooth acquisition, processing, transfer and retrieval and usage of planning data for development. Particularly, Planners are faced with onerous tasks having access to data for several planning assignments (subject, local, regional or national plans). These challenges are discussed below.

- i. **Dearth of quality data:** Regardless of multi sources of data in the recent time and several technological applications in data acquisition, many organisations and countries could still not have access to comprehensive, good quality and up to date data. These may result from irregularity and/or wrong method of data collection and storage among others.
- ii. **Lack of Accessibility and Accuracy of data:** High quality data, needed to address a particular area of planning need not only be available but accessible to the users. Besides, such Data should be relevant, accurate, timely, and accessible and be devoid of interference from an individual, group of people or government who might have influenced it for pecuniary gains. Most available data in developing countries are shrouded in secrecy making it difficult for users to access. This is one of the reasons that Nigerians are clamouring for Freedom of Information Bill (FIB) which many believe would solve this accessibility problem once and for all, particularly since some data and information are restricted by legal, technical or political bottlenecks.
- iii. **Cultural and/or religious barrier:** Given the pluralistic nature of Nigeria and most developing countries particularly Africa, getting information on certain issues is practically difficult as it is often believed in some quarters that such information is classified and sacred and so cannot be revealed for whatever reasons. For instance, while some people feel it is dangerous to let others know their income perhaps for security reasons, others are of the opinion that revealing certain information to the public is a taboo. For instance, in Yoruba tradition, the number of children born by a woman or man should not be for public consumption hence the parlance "a kii ka omofolomo" translated as "you don't count children that are not yours". Also, except someone dies in the hospital where all the information about the causes of death would have been known in the course of treatment, a typical African relative of a deceased person frowns at asking to know information regarding the causes or generally about the death of their loved ones. While it is believed in some quarters that the dead is not being respected and allowed to rest, others feel the questioner is less concerned about the tragedy that befalls them and that is why he does not allow them to mourn in peace.
- iv. **Under coverage of some data due to stigmatisation:** Another important challenge facing data in Nigeria is under reporting, this is also peculiar to the developing countries of African and Asian

- extractions. Groups and family with cases of disabilities, abuse in marriage, rape or parental molestation are poorly captured mainly due to shame and fear of stigmatisation from the public.
- v. **Illiteracy and Misconception:** Data gathering has also been greatly hampered due to high level of illiteracy among the people. Some people refuse to volunteer information about them because they misconceive the intention or the purpose of gathering such information for something different. For instance, household surveys and information on certain key demographics are mistaken by the public for the purpose of increasing taxation or introduction of some special levies which would drain their hard earned resources or outright confiscation of properties. Also, some aspects of traffic surveys are seen by some motorists as an attempt by government to increase vehicle licensing and associated fees.
- vi. **Technicality of some classes of data:** Issues such as environmental and climatic data concerning rainfalls, temperature, deforestation, desertification and chemical pollution that require special instruments and expertise suffer from proper recording (accuracy and precision). This may be due to the sophistication involved in the handling of such data.
- vii. **Respect for fundamental human rights of individuals:** There is an increasing campaign, awareness and respect for human rights globally. This has further underscored respect accorded to individuals and people generally, therefore caution is extremely exercised in the way data about individual is acquired. The rights and privacy of individuals need to be protected while gathering data.
- viii. **Discrimination and Risk of inequality:** Inequality amongst data users in terms of accessibility has been a major threat. Many people, especially in developing countries such as Nigeria are already excluded from accessing relevant information due to language, poverty, education, technology, infrastructure, prejudice/discrimination and technological barriers. For instance, telecommunication markets place barrier on some set of people either due to illiteracy and/or level of poverty that doesn't allow them access to certain information.
- ix. **Inadequate funding, limited capacities, and insufficient coordination between government ministries or parastatals both at the federal, state and local level.** Given these challenges, many relevant data have not been captured and where captured, many have not been processed or properly analysed for public consumption.
- x. **Lack of a comprehensive database system:** The first and most daunting challenge of data in Nigeria is database system. This has been a major problems facing virtually all data users as they find it extremely difficult to access data for planning and development purposes. Issues relating to national identity system, environmental activities, business, education and other activities are practically lacking and where available, are in piecemeal and uncoordinated, thereby leading to lack of synergy in the usage. The available data or information for a particular purpose today may not be available for the same purpose in future. The major constraint to the effective database system remains embedded in the lack of inadequate human and physical infrastructure/capital. There still exists a huge human

resource gap (especially from the production of official statistics) within the data-ecosystem in Nigeria.

xi. Weak administrative and institutional system and lack of synergy among data agencies: The obvious lack of synergy among data custodian and other agencies of the country's statistics is worrisome. The National Bureau of Statistics (NBS) and its auxiliary agencies need to synergise in the production of accurate data. Data production is not a one man business, hence, the cooperation of other agencies and units (both formal and informal) are required to record success, NBS as a coordinating agency should be up to the task in rally round others for better data production.

xii. Corruption, obsolete infrastructure and poor training of workforce: Production of administrative data remains poor due to lack of stable power supply and internet facility. These have greatly impacted poorly on data quality and that of the official statistics as well. Most administrative data are not properly stored and still remain in hard files rather than electronic files and they are also mostly not regularly updated. Many of the staffs engaging in the production of data in the country do not have adequate qualifications and have not been given an opportunity to develop their skills through training. Poor allocation of fund and/or diversion of the little fund allocated could also affect data production. This is a common occurrence within the country's public service and has been hindering the production of good quality official statistics.

Policy Recommendations and Conclusion

As the saying goes that "whoever fails to plan, plans to fail" national development requires adequate planning. However, no proper planning can be carried out without a careful analysis of data relating to such area of focus. Specifically, all sectors of the economy such as education, transportation and security, agriculture and commerce among others have their peculiar characteristics which demand their planning to be carefully orchestrated for a fruitful outcome. To achieve this, data on different areas of the national architecture need to be readily available for researchers and policy makers. Addressing crime and insecurity for example necessitates that records of past crimes, types and dimensions are available and carefully analysed to be able to plan against future occurrences. The same thing applies to other areas of national development. Be that as it may, it is important that government see to not only the availability of data but accurate, reliable and accessible data and data base. Towards this end, the following recommendations are therefore highlighted for national development planning.

- i. The National Bureau of Statistics, an arm of National Development Commission saddled with the responsibility of data management should be properly funded and digitally equipped to be able to generate quality data for national development.
- ii. Enhancement of integrity of administrative data. Achieving this requires that Ministries, Department and Agencies fortify their departments of planning, research and statistics (DPRS) with adequate fund

and other required resources to be able to produce credible data on all areas of operations covered by them. Planning done on incredible and less quality data will result in defective policies and programmes of government.

- iii. Data users and producers forum should be periodically organized to give briefs on the potential uses of data and agreement on the possible improvement on data quality for national planning.
- iv. Publication of data. All state ministries and agencies should regularly forward their respective administrative data sets to the corresponding federal ministries and agencies for collation, consolidation and publication and the same should be transmitted by the federal ministries and agencies to the NBS for standardisation.
- v. Synergy among federal, state and local government statistical bureaus is essential in order for reconciliation of data. Data from all these agencies should be complementary, rather than competitive. With this, reliability of data can be ensured at all time.
- vi. Independence of data management agencies. The NBS's activities and other agencies managing data should be clearly defined such that there is no interference from any quarters particularly political and international organisations. This is quite necessary in order to guarantee reliability and acceptability of data. When data collection is sponsored by an organization, such an organization tends to dictate the outcome of the data to favour its desires. A good example are some of the past census results in Nigeria which had been an object of controversy among several components in Nigeria.
- vii. Better coordination and management of database- With arrays of database across the country, there is the need to synchronize all data sources into a single database from where information on all facets of the economy can be retrieved for effective planning.

In conclusion, data is a veritable ingredient of national planning without which government policies may be grossly defective. It is therefore important that information on all aspects of activities of government and human lives are safely acquired, stored and processed for future planning purposes. In doing this, effective database management is also essential for reliable and accurate data. In spite of these priceless roles data play ineffective development planning, plan implementation and plan outcome, there are challenges facing data for national planning in Nigeria, many of these have been highlighted in this chapter. Also, series of recommendations are suggested. These range from enhancing the integrity of administrative data, strengthening data agencies at all level and provision of adequate funds and equipment for the National Bureau of Statistics and the contributing agencies.

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