



The Effects of Insecurity on Agricultural Productivity in Nigeria: The Case Study of Gombe State

ENEJI MATHIAS AGRI (PhD)*

Department of Economics, University of Jos, Nigeria, Senior Research Fellow, China-Africa Science and Technology Foundation, Beijing

BABAGARIO BLESSING

Department of Economics, University of Jos, Nigeria

AGRI GODWIN ENEJI

Department of Criminology, University of Jos, Nigeria

Abstract

The development of the agricultural sector is Nigeria's surest and most efficient means of achieving growth and sustainable development. However, the wave of insecurity rocking the country has threatened the development of the agricultural sector. Hence, this study examined the effects of insecurity on agricultural productivity in Nigeria (Balanga LGA, Gombe State). This study adopted the Ordinary Least Squares method of multiple regression analysis of time series data using Agricultural Gross Domestic Product (AGDP) as dependent variable while poverty (POV), unemployment (UNMP) and crime rate (CR) and federal government recurrent expenditures on internal security (FREXIS) were used as independent variables. The OLS result indicated an R² value of 0.43 implying that 43% of the proportion of variation in AGDP was explained by the independent variables. Also, the result revealed that CR and UNMP were negatively related to Agricultural productivity (AGDP) whose coefficients stood at (-0.58) and (-0.38) respectively. Therefore, the study recommended that Nigeria's Executives and Policy Makers should make conscious efforts to revive and transform the agricultural sector from its largely subsistence state into a modern mechanized sector and as well a holistic rejuvenation and revamping of the security sector to ensure a relatively peaceful atmosphere that foster agricultural productivity and socioeconomic development.

Keywords: Insecurity; Agricultural productivity; Job insecurity; Food insecurity; Sustainable development; crime rate.

1. Introduction

Agricultural sector development is considered to hold the key to economic development for most Sub-Saharan countries including Nigeria (Olukunle, 2013). This is because it contributes immensely to the growth and development of such Sub-Saharan economies as it provides food and raw materials to the non-agricultural sectors of the economy, it provides employment opportunities to a vast majority of unemployed labour and serves as an avenue by which valuable foreign exchange can be earned through the export of agricultural products. As observed by the (WDR, 2008), agriculture can work in harmony with other sectors to produce faster growth, reduce poverty, and sustain the environment by its contribution to development as an economic activity, as a livelihood, and as a provider of environmental services, making the sector a unique instrument for development. It is in line with this that (Ogen, 2007), states that the agricultural sector has the potential to be the industrial and economic springboard from which a country's development can take off. Thus, the importance of the agricultural sector to the development and growth of any economy cannot be over emphasized and that is why many nations place great importance on its development and enhancement.

Historically, agriculture in Nigeria has been the most important sector of the economy based on the fact that our ancestors were sustained primarily on farming as their major occupation although it was with the aid of crude implements compared to what is obtained today. Yet, they were not just able to produce food crops such as yam, cassava, maize, millet, sorghum and soya beans for their personal consumption so that there was no need for food importation, but Nigeria was considered the major exporter of agricultural products such as palm produce, cocoa, groundnut, cotton and rubber. Despite the limitation of using crude implements they were able to respond accordingly to the demand of their times.

Agriculture comprises the main fields of human activity concerning the primary production of food and cash crops, livestock, fishing, forestry and marketing of the products. The role of agriculture in any economy is very well articulated in the relevant literature for developing countries, it can promote economic development by increasing availability of food and releasing labour for the industries. It can expand the size of the domestic market for industrial goods. It raises the level of savings and capital formation while also earning foreign exchange from export. Nigeria is an agrarian country with about 70% of her populace that is, over 140 million people engaged in agricultural production (Central Bank of Nigeria (CBN), 1997) and provides subsistence for two-thirds (2/3) of Nigerians who are low income earners (Usman, 2006). While the northern part can guarantee the production of cereals such as sorghum, maize, millet, groundnut, cowpea and cotton, the middle belt and the south have the

*Corresponding Author

potentials to produce root and tubers crops such as cassava, yam, cocoyam and other crops like plantain as well as maize (Abdulahi, 2003). In addition to crops, the country is also involved in the production of livestock, fisheries, forestry and wildlife.

Gombe State is in North-East Nigeria. The arid climatic condition in the area is not suitable for all season farming in the absence of irrigation technology. This unstable climatic situation has been compounded by insecurity such as the Boko Haram insurgency, farmers/herdsmen clashes, communal conflicts and other religious crises which have engulfed Nigeria most recently from 2009. People have fled from one settled area to another for security and the tactics employed by Boko Haram have not been environmentally friendly. This has seriously affected food and cash crop production in this region. Nigeria's current general insecurity challenge has been compromised by avoidable conflicts that have become a common issue in recent times. This in fact, has become more worrisome especially when the impoverished segments of the Nigerian masses are finding it increasingly hard to avoid starving to death. Resources that could have been diverted to improving the agricultural sector have been consumed in the rehabilitation of displaced and injured citizens. It will not be an exaggeration to observe that the current wave of general insecurity was fuelled by poverty. Food insecurity has caused many people to find themselves in acute poverty, a condition that has made the people highly susceptible and vulnerable to any conflict situation.

1.1. Statement of the Problem

Nigeria in recent times has witnessed an unprecedented level of insecurity. This has made national security threat to be a major issue for the government and has prompted huge allocation of the national budget to security (Achumba *et al.*, 2013). No region has been spared the vicious scourge of conflict though their prevalence and intensity have not been the same in occurrences across the length and breadth of the nation. Thus, fingers are swift in pointing accusingly to colonial legacies and continual interplay of external and internal imperialist forces that fan the embers of violence for selfish aggrandizement. The present situation is further intensified by elements of globalization, natural disasters, proliferation of weapons and light arms, corruption, executive lawlessness and leadership ineptitude (Chinwokwu, 2012).

The escalation of insurgency in Gombe states especially in the southern senatorial zone and others has caused many farmers to abandon their farms. This is as a result of fear of attacks especially by marauding Boko Haram insurgents, clashes between herdsmen and the farmers, communal conflicts and other forms of conflicts.

Most of them [local population] have fled their homes' (Muhammed, 2015). The farmers are no longer able to produce in sufficient quantities to meet the demand from other parts of Nigeria. Most of the youths who used to support agriculture in the rural areas have been killed or moved away from the farms. This has reduced the labour needed in the agricultural sector of this region of Nigeria. Others, for their own security, have escaped to neighboring countries as refugees which became an endemic problem (Awodola and Oboshi, 2015). Gombe is one of the important link between the agricultural-producing regions of the south and the drier Sahelian region stretching up into the desert. Its decline has had a heavy toll on food shortages and the consequences thereof.

Therefore, this study, effects of insecurity on agricultural productivity in Nigeria, was intended to evaluate the economic consequences as a result of insecurity on food production towards deriving appropriate policies with the hope of curbing further occurrences.

Agriculture specifically farming has been a major source of livelihood to a very large percentage of the Nigerian citizens. Farmers and investors in farming are getting nervous and also becoming skeptical to invest in agriculture as a result of the rising insecurity in the country. Clashes between herdsmen and farmers in Gombe state have to a large extent had undermining effects on farm activities, as farmers in many areas stay away from farm for fear of attack or the insurgence killing them, destroying their crops or harvest them to feed their flocks or fighters. This act mostly results in food scarcity for the general populace of the state.

Most of the entrepreneurs who went into farming for food security and create jobs are now reappraising their continued involvement in commercial agriculture due to insecurity, thereby raising the rate of unemployment in the state and country at large.

1.2. Research Questions

The following research questions will help the researcher to systematically and empirically carry out the research properly and effectively to address the stated problem of the study. They are;

1. What are the causes of insecurity in Balanga local government area of Gombe state?
2. Does any significant relationship exist between insecurity and agricultural productivity in Balanga Local Government area of Gombe state?
3. Is there any significant relationship between insecurity and food security Nigeria?

1.3. Aims and Objectives of the Study

The aim of this study is to determine the effects of insecurity on agricultural productivity in Nigeria and to proffer positive recommendations that will boost agricultural productivity in the area and reduce the level of insecurity thereby the objectives of the study includes:

1. To identify the sources/causes of insecurity in Nigeria.
2. To determine the relationship between insecurity and agricultural productivity in Nigeria
3. To estimate the causal relationship between general insecurity and food security in Nigeria.

1.4. Hypotheses of the Study

- Ho: There are no significant security challenges in Balanga LGA of Gombe State
H₁: There is a significant relationship between insecurity and agricultural productivity in Balanga Local Government Area of Gombe State.
H₂: There is no significant relationship between general insecurity and food security in Nigeria

2. Literature Review

This section is aimed at reviewing relevant literatures on the subject matter under study. The review in this research is therefore intended to analyze the approaches, analytical instruments and facts contained in previous studies which serve as a starting point for the researcher. Here we consider existing literature on insecurity, agriculture and agricultural productivity. Scholarly works will be critically reviewed to give a broader view of the subject matter under study, and also identify the major gaps in the literature.

2.1. Conceptual Framework

2.1.1. Concept of Insecurity

In order to ably define insecurity, it is important to have a brief discussion on what security is. The first duty of a government is to keep its citizens safe because like Hobbes observed, only the state has the ability to guarantee security and save society from anarchy (and since government represents the state), the state through its government should provide adequate security to justify its *raison d'être* (Gaskin, 1996). In this wise, Omede (2012) sees security as a dynamic condition which involves the relative ability of a state to counter threats to its core values and interests. McGrew (1988), holds that the security of a nation hangs on two important pillars which are: (1) the maintenance and protection of the socioeconomic order in the face of internal and external threat. (2) The promotion of a preferred international order, which minimizes the threat to core values and interests, as well as to the domestic order. However, Nwolise (2006), sees security as an all-encompassing condition which suggests that a territory must be secured by a network of armed forces. Similarly, to Otto and Ukpere (2012), security relates to the presence of peace, safety, happiness and the protection of human and physical resources or the absence of crisis.

Insecurity in a general term refers to a state of being subjected to fear, threat, danger, molestation, intimidation, harassment etc in all aspects. For example, insecurity can be conceived as threats to the state which often accounted for the race for arms and nuclear weapons to defend the state as opined by Ajodo *et al.* (2014). According to Saliu *et al.* (2007), human threats of life emanate not only from situation of violent conflicts but also other non-conflict sources. Thus; insecurity is a situation of fear or anything that causes fear, harm, or has the capability to cause fear, harm, injury, destructions to an individual, group or nation.

The concept of insecurity connotes different meanings such as: absence of safety; danger; hazard; uncertainty; lack of protection, and lack of safety. According to Beland (2005), insecurity is a state of fear or anxiety due to absence or lack of protection. Achumba *et al.* (2013), also define insecurity from two perspectives. Firstly, insecurity is the state of being open or subject to danger or threat of danger, where danger is the condition of being susceptible to harm or injury. Secondly insecurity is the state of being exposed to risk or anxiety, where anxiety is a vague unpleasant emotion that is experienced in anticipation of some misfortune.

Beland (2005), also defined insecurity as “the state of fear or anxiety stemming from a concrete or alleged lack of protection.” It refers to lack or inadequate freedom from danger. This definition reflects physical insecurity which is the most visible form of insecurity, and it feeds into many other forms of insecurity such as economic security and social security. In this study, insecurity is conceived as a situation where human and national security of a state is compromised by internal or external forces or interests exacerbated by the former’s weak or poor economic, military and/or human resource development conditions.

2.1.2. Concept of Agricultural Productivity

According to Fulginiti and Perrin (1998), agricultural productivity refers to the output produced by given level of inputs in the agricultural sector of a given economy. More formally, “it can be defined as the ratio of value of total farm outputs to the value of total inputs used in farm production”. Agricultural productivity is measured as the ration of final output in appropriate units to some measure of inputs (Iweala, 2013).

Singh and Dhillon (2000), suggested that “yield per unit” should be considered to indicate agricultural productivity. Agricultural productivity refers to the increase in per capita output of agricultural produce within an economy during a given period of time. Most economist and statisticians tend to use the annual trends due to its precise and articulate information it tends to offer. The output of agricultural products tends to fluctuate over a period of time thereby necessitating the need for it to be studied or monitored

2.2. Theoretical Framework

There are different theories of agriculture and insecurity depending on one’s ideology. The following theories are based on insecurity and agriculture.

2.2.1. Relative Deprivation Theory of Insecurity

Relative deprivation theory is a middle range contemporary theory in social sciences that is linked to poverty and social segregation. The theory dates back to ancient Greece and it is largely associated with Gurr (1970). Thus,

drawing inspiration from the principle of Aristotle that revolution is driven by a relative sense or feeling of inequality rather than an absolute measure, (Gurr, 1970) contends that instead of a total standard of deficiency, a breach between projected and accomplished wellbeing results in cooperative dissatisfaction. Therefore, the main root of human capacity for violence appears to be the frustration-aggression mechanism; the anger brought by frustration is an inspiring force that positions men to belligerence, regardless of its instrumentalities. The relative deprivation is the term employed to signify the strain or tension that emerges from a disagreement between the “ought” and the “is” of collective value satisfaction which prompts humanity to violence. Giving credence to this theory Runciman (1966) cited in Obah-Akpowoghaha (2013), defines the prerequisite of “relative” deprivation as: (where individual A feels deprived of object X): individual A does not have X; individual A wants to have X; individual A knows of other persons who have X; individual A believes obtaining X is realistic.

The construct of this theory shows that systemic failure or structural defect in a given society is significantly connected with frustration and aggression that prompt criminality and violence. In contemporary Nigeria, systemic failure manifests in high rate of unemployment among graduates and non-graduates. Unemployment is a correlate of poverty and violent conflicts- youth militancy in Niger Delta (Ibekwe and Ewoh, 2012) Boko Haram Insurgency in the Northeast (Adebayo, 2013a) and high rate of kidnapping in the Southeast (Nwagwu, 2014) political assassination (Igbafe and Offiong, 2007) etc. Nigerians who involved in the above violent conflicts and others such as armed robbery (Adebayo, 2013a), smuggling, political thuggery (Adesina, 2013), assassination; (Anzaki, 2014; Haruna and Jumba, 2011) ritual killing for wealth (Smith, 2001), human trafficking, (Shu-Acquaye, 2013) etc. must have been frustrated to join criminal gangs to fend for themselves and fulfill other obligations in the society such as getting married, paying the children school fee, assisting their dependents and contributing to community projects. The construct of relative derivation theory also reveal the situation of competent graduates who are underemployed as casual staff. Seeing their mates with the same qualifications placed better than them, earning well with good standard of living could lead to frustration-aggression and violent conflicts. Some of them could demonstrate their grievances through absenteeism and engagement in corruption as well as vandalization of property of such organizations. Relative deprivation theory also has some explanations concerning injustice and discrimination in Nigeria. When persons are caught for issues relating to violent conflicts and other crimes, the poor ones are usually brought to book, while the elite class is often set free or fined with ridiculous amount in the law court. This shows that justice, which is supposed to be the hope of common man has suddenly become the hope of the rich and the enemy of the poor.

2.2.2. The Elite Theory of Insecurity

The Elite theory emerged from the works of Pareto (1963) and Mosca (1939) as a reaction to Karl Marx on power and state and Abraham Lincoln on democracy (Epstein, 2011). Elite theory rests on the premises that man society is divided into two major groups i.e. ‘the ruler’ and ‘the ruled’. The former represents the minority while the latter constitute the majority, but the minority manipulates power which enables them to misappropriate the resources of the state to the detriment of the ruled. Pareto (1963) and Mosca (1939) largely attributed the ability of the elites to manipulate power to the internal organization of the elite class, and that it permits them to form a united and unified minority against the masses who are usually uncoordinated and easily manipulated. Pareto (1963), also believes that characteristics of subtlety and crookedness single the elite class out as superiors. The structure of the elite is static, but individuals in the group change. When the old members pass on or retire, new members are recruited to the group. However, it should be noted that such persons are usually recruited from the old members jurisdiction. Anyone recruited from outside the group is usually recommended by members and he or she must subscribe to the dictates of the group before his or her induction can be carried out so as to retain the influence and the power of domination of the group.

The elite theory has some explanation on the manipulation of power which has generated conflicts across Nigeria in both military and political regimes. The manipulation of the political power has also granted the elite class an unlimited access to misappropriate the funds meant for national development to the detriment of the ruled. This is an indication of dysfunctional leadership responsible for the failure of the economic, education, social control, technology, family institutions etc. that correlate violent and nonviolent conflicts with negative implications on national development. Since Nigeria’s political independence in 1960, the elite class has produced leaders without conviction, patriotism and vision (Bakoji, 2006). These leaders according to Bariledum and Serebe (2013), have “assumed the dimension that is unusual of realistic functions in development context”. Leadership is an essential requirement of any society, but the type of leadership determines her level of development. Hence, a nation with poor leadership, like Nigeria, no matter her level of natural endowments has been associated with underdevelopment in previous studies (Achumba *et al.*, 2013; Bakoji, 2006; Ben-David, 1973). Development could be regarded as a function of how natural and human resources can be manipulated by the concerted efforts of the “rulers” and the “ruled” to the advantage of their country but this effort is seriously lacking (Cervallati and Sunde, 2011). Thus, the political institution seems to have malfunctioned with negative implications on other institutions such as, economic, education, social control, etc. Contrary to Karl Marx on economic structure determining superstructure therefore, the political institution seems to have negatively influenced the superstructure in Nigeria, considering the manipulation of political power which enable the elites to loot the funds meant for national development to its advantage and disadvantage of the masses. The foregoing corroborates (Tomolaju, 2007) who contends that “We fight, and sometimes shed blood to achieve and retain political power because for us in Nigeria, the political kingdom has for too long been the gateway to the economic kingdom.” However, both the economic and political determinism of the superstructure gears towards the exploitation of the masses. The capitalists and the elites are more or less in the same camp with the same interest or focus (exploitation of the masses).

Due to poor leadership, the economic institution cannot function at optimal level to afford employment for many graduates, good remunerations and conditions of service for the employed in the public sector while the private sector is characterized by exploitation. Also, the problem of leadership seems to be causing the malfunctioning of the educational institutions hence cases of industrial action, violent demonstration of students e.t.c, in various campuses. The social control unit is ineffective because of corruption and poor welfare of the security personnel (Achumba *et al.*, 2013). Most of these officers are ill-equipped, poorly trained, remunerated, educated and motivated. Also, most of the literature on ethnic violence shows that it is often motivated for economic and political reasons (Obasanjo, 2002). Moreover, most violent conflicts associated with differences in race, religion, culture, language are traceable to the perceived inequality in the circulation of economic, political and social resources by the elite class (Harris and Reilly, 1998, cited in Obasanjo (2002).

3. Empirical Review

Adebisi *et al.* (2017), carried out a study on an appraisal of Boko Haram's insurgency on the agricultural sector in Nigeria. They adopted the time series data analysis research method, while descriptive statistics and t-test were used to analyze the secondary data before and during the insurgency. The result of their findings showed that agricultural value added to the GDP was high before Boko Haram disruption and has reduced during the period of insurgency. Based on their findings, the study recommends that government should take legal and justifiable action to ensure that the ills caused by Boko Haram to the agricultural sector are addressed and farmers encouraged with better incentives to go back to farm.

Ojogho and Egbare (2015), also carried out a study on the impact of insurgency on agricultural development in Nigeria. Using secondary time-series data they collected on Nigerian agricultural share of GDP, infant mortality rate, CO₂ emission from fuel combustion and level of food production as proxies for agricultural transformation for the years, 1960-2011 the Nigerian civil war, Boko-Haram, Niger-Delta, Fulani herdsmen insurgences were used as proxies for insurgency. The data were analyzed using the Vector Error Correction Model (VECM) after testing for stationarity, co-integration and lag selection using the Augmented Dickey-Fuller (ADF), Johansen and the Schwarz's Bayesian Information Criterion (SBIC) statistics respectively. They were able to discover from the result that the VECM had a unit decrease in previous year food production level would increase the share of agriculture to GDP by 4.26% the following year while a shift from non-insurgency to insurgency in any year by Boko-Haram, Niger-Delta and Fulani herdsmen reduced the share of agricultural contribution to GDP by 17.56%, 19.45% and 17.47% respectively. A similar shift from non-insurgency to insurgency in any year by Boko Haram and Fulani herdsmen insurgences reduced food production level, on average, by 10.21 and 4.69 tonnes respectively while a shift from non-insurgency to insurgency in any year by Niger-Delta crisis and Fulani herdsmen increased CO₂ emission, on average, by about 5% and 8% respectively. They also inferred from the result that agricultural development should be all-embracing since its component elements have a long-run equilibrium relationship, that insurgency indirectly impact on agricultural development through its effect on the change in food production level, the share of agriculture to GDP, CO₂ emission from fuel combustion and infant mortality, and that attempt at ignoring the insurgency by any sect from any region, whether religious, cultural, or communal was also a threat to agricultural development.

3.1. Challenges of the Agricultural Sector in Nigeria

In an attempt to understand the problems facing the agricultural sector in Nigeria and the main barriers that prevent Nigeria's agricultural sector from becoming an engine of economic transformation, job growth, and food security, the Centre for Strategic International Studies (CSIS) paid a visit to Nigeria to conduct interviews and carry out research amidst farmers, agricultural researchers, business leaders, etc to discover some of these problems. Information from these interviews and researches as put together by Downie (2017) suggests the following problems or impediments to agricultural development in Nigeria:

Firstly, there is the problem of poor market access. In many parts of Nigeria, farmers simply do not have access to a market for their goods due to underdeveloped value chains. For example, fields lie fallow in Katsina state not because nothing can be grown there but because the scarcity of nearby processing facilities means that the market for produce is limited to the immediate surroundings. The absence of adequate storage facilities for their goods means many farmers face the choice of selling immediately after harvest when prices are at their lowest or allowing their produce to rot. Export markets remain underdeveloped partly because Nigerian agricultural goods are uncompetitive and do not meet international phytosanitary standards.

Secondly, there is low access to credit to Nigerian farmers. Nigerian banks are wary of extending loans to farmers. In the survey conducted by a poll organized by the CSIS, 35% of farmers cited access to credit as the main barrier to their operations. In the South-south geopolitical zones, the figure was 59%. Loans to the agricultural sector accounts for only 1.4% of total bank lending. Nigeria has undertaken several initiatives to try to promote more lending to the agricultural sector, notably the Nigerian Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL), launched by the Central Bank of Nigeria in 2013, which guarantees loans extended to farmers and offers rebates to recipients who pay back the money on time.

Another problem confronting the Nigerian agricultural sector is the presence of Poor Inputs. Seed availability remains a significant problem for farmers. The research pipeline for new seed varieties is broken, and poor quality or counterfeit seed has flooded the market in the absence of a functioning regulatory system. Low rates of access to mechanical farm tools such as tractors and crop sprayers prevent farmers from utilizing their labour and land efficiently. Access to quality fertilizers is another barrier faced by farmers in their operations. Land access itself is an

enduring problem because of insecure land tenure and harmful policies at the local level that limit the rights of non-indigenes.

Also, presence of lukewarm political commitment has affected the Nigerian agricultural sector. Too often, Nigerian government have offered rhetorical support for agriculture as a tool for economic diversification but failed to implement policies or provide budgets to match their ambitions. Legislation aimed at improving the enabling environment for agriculture has sat in the National Assembly sometimes for years without finding it ways into law.

Furthermore, the neglect of the agricultural research systems has further compounded the lack of development in the agricultural sector. Nigeria's agricultural systems, the largest in Sub-Saharan Africa has stagnated and become disconnected from the priorities of Nigerian farmers. The system has been starved of federal funding and become overly reliant on foreign donor funds.

In addition, there is an uncompetitive environment for agribusiness in Nigeria. The structural impediments that damage other sectors of Nigeria's economy and make it uncompetitive in global markets are particularly harmful to agribusiness. They include an unreliable power supply, dilapidated irrigation systems, overcrowded ports and poor roads. For example, it takes 6-8 days to move a truckload of tomatoes along the country's main transport corridor, from Jabiya in the far North to Lagos in the South-West, and unless the cargo is refrigerated and most times its not, it will perish before it gets to the Lagos port. On top of these infrastructural deficiencies are governance shortfalls like an abundance of bureaucracy, corruption, overlapping responsibilities between the three tiers of government, and unclear policies including for example, a constantly shifting lifts of items that are prohibited from being imported.

The result from the CSIS research as seen above summarizes the problems facing the Nigerian agricultural sector. For the nation to grow, it needs to develop the agricultural sector by eradicating the above problems

3.2. Agricultural Technology Innovation and Food Security

An agricultural innovation system is about people, the knowledge, technology, infrastructure and cultures they have created or learned, who they work with and what new ideas they are experimenting with. The approach represents a major change in the way that the production of knowledge is viewed, and thus supported. It shifts attention away from research and the supply of science and technology towards the whole process of innovation, in which research is only one element.

The role of agricultural technologies affects the rate of increase in agricultural input, it also determines how the increase in agricultural output has impacts on the poverty levels and environmental degradation (Meinzen-Dick *et al.*, 2004).

Agricultural technology innovation has made it possible to introduce the genes that control the desirable traits into plant and animal strains with far greater precision and control than conventional methods (Pinstrup-Andersen and Pandya, 2001). Chemical; fertilizers, pesticides, and herbicides—have made a difference, bringing a newer class of extremely useful production inputs to agriculture. Also, an impressive array of improved crop varieties, the achievements of hybrid corn, rice, cotton, wheat etc are classic examples of success, (Moschini, 2001). Also, as a result of agricultural technology innovation we now have inventions such as the Agro-Robots, Crop Sensors, Led indoor crop technology, digital technology and cloud farming. These have move agriculture to more advanced levels.

However, the biggest problem facing Nigeria is the neglect in the part of government in the area of funding effective and sustainable policies and systems required to drive agricultural processes, considering the fact that agricultural technology is a primary factor that will contribute to increases in farm produce.

Food security, at the individual, household, national, regional and global levels (is achieved) when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (Riel, 1995). Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Generally, food security has to do with the availability, accessibility, stability and utilization. these are considered as the main pillars of food security without which it becomes difficult for food security to be achieved.

It has earlier been established that Nigeria has been facing a lot of decline in the agricultural sector especially as a result of the insecurity challenges she faces which has to a large extent also impeded the level of agricultural activities, hence the issue of food insecurity posses as a great challenge to the country at large.

When it comes to fighting poverty in Nigeria, agriculture is more effective than the other sectors and with the help of technology; farming can go a long way in sustaining the Nigerian economy. According to World Bank, while agricultural productivity in Africa has picked up in recent years, the industry is currently facing several problems with low productivity due to the climate change, lack of assets such as land, education, finance, equipment and expertise. But despite these hindrances, agricultural technologies could be a game-changer in boosting productivity and vast potential for the Nigerian farmers. The Food and Agriculture Organization (FAO) predicts that the agricultural market in Africa will grow to \$1 trillion by 2030 through the help of technology Impressive. Therefore, the role of agricultural technologies innovation on food security cannot be overemphasized because it affects the rate of increase in agricultural input, it also determines how the increase in agricultural output impacts on food security.

4. Research Methodology

4.1. Research Design

Methodology is one of the crucial aspects of any research work. It largely determines the success of the study and provides basis for drawing up conclusions. This study was aimed at finding out the effects of insecurity on agricultural productivity in Nigeria. Acase study of Gombe State. This chapter is therefore concerned with

addressing the method and procedures employed in carrying out this study. Hence, the following sub-heading will be discussed here: Research Design, types and sources of data, model specification, and technique of analysis.

Leedy (1997), defined research design as a plan for a study, providing the overall framework for collecting data. It is a plan for selecting subjects, research sites, and data collection procedures to answer the research question(s). This further indicates that the goal of a sound research design is to provide results that are judged to be credible. It is a framework that will specify the type of information to be collected, the source of data and the data collection procedure (Gujarati, 2009). This means that a research design is the framework that has been created to seek answers to research questions.

4.2. Model Specification

Ordinary Least Square regression analysis will be employed for the purpose of this study in order to evaluate the effects of insecurity on agricultural productivity in Nigeria. The relationship to be examined is therefore between the dependent variable: Agricultural gross domestic product (AGDP) which serves as a proxy to agricultural productivity and the explanatory (independent) variables: poverty rate, unemployment rate, crime rate, and federal government expenditures on internal security in Nigeria.

The model can be specified as:

$$AGDP = F(POV, UNMP, CR, FGREXIS)$$

$$AGDP = \beta_0 + \beta_1POV + \beta_2UNMP + \beta_3CR + \beta_4FGREXIS + U \text{ ----- (1)}$$

Where: AGDP = Agriculture gross domestic product

β_0 = Intercept of the model

POV = Poverty rate

UNMP = unemployment rate

CR = Crime Rate

FGREXIS = Federal Government Recurrent Expenditure on Internal Security

$\beta_1, \beta_2, \beta_3, \beta_4$ = Coefficients of poverty rate, unemployment rate, crime rate and federal government recurrent expenditure on internal security respectively.

U_i = Error term

5. Results and Analysis

5.1. Augmented Dickey-Fuller Unit Root Test Result

Table-2. Unit Root Test

Variable	ADF statistics	Critical Value @ 5%	Level of stationarity
AGDP	18-64521	-3.020686	I(0)
POV	-4.667448	-3.012363	I(1)
UNAMP	-3.543239	-3.020686	I(0)
CR	-5.842864	-3.012363	I(1)
FGREXIS	-4.670262	-3.052169	I(2)

Source: Researcher's Computation with the aid of Eviews 9

As a pretest, the unit root test is carried out to check the stationarity of the values of the variable used in estimating the model. Table 2 above shows that AGDP and UNMP were stationary at level while POV and CR were stationary at first difference and FGREXIS were found to be stationary at second difference I(2) at 5% level of significant. Therefore, the data used in this study is free from spurious result (Granger and Newbold, 1974).

5.2. Regression Results

Table-3. Regression Result

Dependent Variable: LOG(AGDP)				
Variable	Coefficien t	Std. Error	t-Statistic	Prob.
C	-4.588150	19.73132	-0.232531	0.8189
LOG(POV)	2.734450	4.554716	0.600356	0.5562
LOG(UNMP)	-0.580974	0.813870	-0.713841	0.4850
LOG(CR)	-0.379294	1.306497	-0.290314	0.7751
LOG(FGREXIS)	1.203422	0.583023	2.064108	0.0546
R-squared	0.428995			
Adjusted R-squared	0.294641			
S.E. of regression	1.257601			
Sum squared resid	26.88654			
Log likelihood	-33.42306			
F-statistic	3.193017	Durbin-Watson stat	0.838100	
Prob(F-statistic)	0.039679			

Source: Researcher's computation with the aid of E-View 9

The summary of the regression result is as follows;

AGDP= -4.588150 + 2.73POV - 0.58UNMP - 0.38CR + 1.20FGREXIS

S.E.E= (19.73132) (4.554716) (0.813870) (1.306497) (0.583023)

P- VALUE= (0.8189) (0.5562) (0.4850) (0.7751) (0.0546)

$R^2 = 0.43$

Adjusted $R^2 = 0.29$

F = 3.19

DW = 0.838100

The multiple regression result in [table 3](#) above revealed that at 5% level of significance, poverty rate (POV) and federal government expenditures on internal security (FGREXIS) were positively related to agricultural gross domestic product (AGDP) as shown by the value of their respective coefficients: 2.73 and 1.20. Consequently, a unit increase in poverty rate (POV) and federal government expenditure on internal security (FGREXIS) will lead to 2.73 and 1.20 increase in agricultural gross product. The positive impact of poverty rate (POV) as shown by its coefficient from the regression result negates the apriori expectation stated in chapter four regarding the expected impact of poverty rate on AGDP. This implies that poverty rate (POV) in Nigeria has not impeded agricultural productivity, rather, it is the poor performance of the agricultural sector that increases poverty. While an increase in FGREXIS will improve agricultural productivity within a secured environment.

Furthermore, the regression result indicated that unemployment and crime rate had a negative relationship with AGDP as shown by their coefficients which are represented by -0.58 and -0.38 respectively. Meaning that a unit increase in unemployment and crime rate will decrease AGDP by 0.58 and 0.38 respectively. Besides, the regression result as contained in [table 3](#) showed that the coefficient of determinant (R^2) stood at 0.43%. In simple terms, the R^2 statistic implies that 43% of the proportion of the variation observed in AGDP (the dependent variable) was explained or accounted for by the explanatory variables (POV, UNMP, CR and FGREXIS) in the model while 57% of the variation in AGDP was explained by other external factors (variables) not captured in the model. The adjusted R^2 was found to be 29% indicating that the estimated model still has a goodness of fit after the model was adjusted considering that AGDP as a proxy for agricultural productivity is influenced by other variables not captured in the model.

6. Discussion of the Findings

Thus far, the empirical analysis undertaken in the previous subsection of this chapter revealed that, from [table 2](#) (Unit Root Test) AGDP and UNMP were found to be stationary at level I(0), POV and CR were stationary at difference I(1) while FGREXIS was stationary at second difference I(2) at 5% level of significance. The Durbin-Watson value revealed the presence of serial correlation which necessitated the execution of Bruesch-Godfrey Serial Correlation LM Test in order to tackle the serial correlation challenge so as to ensure that data used in this study are free from spurious result.

The regression result in [table 3](#) revealed that at 5% level of significance, poverty rate (POV) and federal government expenditure on internal security (FGREXIS) are positively related to agricultural gross domestic product (AGDP) as shown by the values of their respective coefficients; 2.73 and 1.20. This implies that, a unit increase in POV and FGREXIS will lead to 2.73 and 1.20 increase in agricultural gross domestic product. The positive impact of poverty rate (POV) as shown by its coefficient from the regression result, negate the apriori expectation which postulated a negative relationship between poverty rate and AGDP. Meaning that, poverty rate in Nigeria has not hindered agricultural productivity, rather, it is the poor performance of the agricultural sector due to the negligence it got from the government of Nigeria ever since the discovery of oil which should have been a plus but now constitute a distraction from developing other sectors of the economy, especially the agricultural sector which was and still is the relatively highest employer of labour with high potential of revamping our dwindling economy.

FGREXIS also had a positive impact on AGDP as indicated by its coefficient (1.20). Hence, a unit increase in FGREXIS will increase AGDP by 1.20. This therefore means that as government invest more on internal security, AGDP tends to increase because the level of insecurity in the country such as Boko Haram activities and Farmers-Herdsman clashes will be curtailed. When a relatively peaceful atmosphere necessary for socioeconomic development is attained, the confidence and trust of the internally displaced persons, farmers and especially agricultural investors is restored, thereby, creating business and job opportunities as the level of income earned by farmers increases and as well boosting the percentage contribution of agricultural sector to GDP.

It was also established that crime rate (CR) was negatively related to AGDP with a coefficient of -0.32 which by implication means that crime rate is detrimental to agricultural productivity in Nigeria. This relationship is absolutely representative of the current state of agriculture in Nigeria. It was also established that unemployment was negatively related to AGDP with its coefficient -0.58 which by implication means that the higher the level of unemployment, the more people will engage in insecurity activities and the more insecurity activities are increased, which will hinder people from going into the activity.

From the regression result, the coefficient of determination (R^2) stood at 0.43%. The R^2 statistic indicated that 43% of the proportion of the variation observed in Agricultural gross domestic product was explained by the explanatory variables (POV, UNMP, CR and FGREXIS) in the model while 57 % of the variation in AGDP was explained by other external factors (variables) not captured in the model. The adjusted R^2 stood at 29% indicating that the estimated model still had a goodness of fit after the model was adjusted considering that AGDP as a proxy for agricultural productivity is influenced by other variables not captured in the model. The joint statistical influence

of the independent variables in explaining the dependent variable as captured by the F-statistic stood at 3.193017 with a P-value of 0.039679 The F-statistic and P-value further affirms the influence of the independent variable to be statistically significant at 5% level of significance. The Durbin-Watson statistic was at 0.838100 indicating the absence of serial correlation in the estimated model.

6.1. Summary

This research examined the effects of insecurity on agricultural productivity in Nigeria (1996 – 2018).

- i. The development of the agricultural sector is Nigeria's surest and most efficient means of achieving growth and sustainable development. However, the wave of insecurity rocking the country in the form of communal clashes, militancy, farmers-herdsmen conflict and the rise of Boko Haram insurgency has further threatened the development of the agricultural sector as most Northern farmers have been killed, displaced from the native lands and their farm produce destroyed; therefore, many farmers have been forced to abandon their farmlands in search of security and safety posing negative effects on agricultural productivity and hence, impedes growth and development of the sector and its contribution to Nigeria's GDP.
- ii. The Ordinary Least Squares result revealed that POV and FGREXIS were positively related to AGDP. Hence, it is paramount that policy makers are focused on alleviating poverty via effective, consistently financed and monitored agricultural policies and schemes that will create job opportunities which in turn, will alleviate poverty. Government should also invest in internal security so as to improve and ensure a favourable atmosphere for agricultural investors to enhance agricultural productivity.
- iii. The result also indicated that UNMP and CR were negatively related to AGDP. Thus, this revealed that crime rate and unemployment are very detrimental to agricultural productivity in Nigeria.

7. Conclusion

In alignment to the result of the multiple regression analysis obtained, this study, the effect of insecurity on agricultural productivity in Nigeria. the case study of Gombe State, we were able to find out that insecurity has to a large extent affected the level of agricultural productivity in Balanga LGA of Gombe State.

Recommendation

Based on the empirical investigation carried out on the effects of insecurity on agricultural productivity in Nigeria, it is expedient to proffer the following recommendations.

- i. Nigeria's government should strategically invest in the security sector by consistently equipping the security personnel with upgraded state of the art security gadgets and as well ensure adequate funding towards training and re-training of security personnel in best global preventive intelligence gathering and security practices rather than the less fruitful counter-insurgency approach.
- ii. Nigeria's Executives and Policy Makers should make conscious efforts to revive and transform the agricultural sector from its largely subsistence state into a modern mechanized sector that will boost the sector's contribution to GDP, enhance foreign earnings and absorb the teeming number of unemployed graduates which will curtail crime rate and their vulnerability to the recruitment scheming of Boko Haram and the enticing monetary rewards from unpatriotic politicians to be used as political thugs.
- iii. Another point that was also established was the fact that, poverty also had a positive relationship with agricultural gross domestic product, the government should create job opportunities so as to enable a significant number of the population, to be gainfully employed by so doing they tend to reduce the rate of poverty in the country. When the rate of poverty is reduced, the rate of people who will have time to engage in all this social ills will be curtailed to a large extent which will in turn allow the farmers to be more effective on the farm hence, increase the level of output.
- iv. Religious and ethnic leaders must emphasize on the need for religious and ethnic tolerance as well as enlightening their adherers on the threats and set back communal and religious conflicts would have on Agricultural sector and the economy at large. This will foster the sustainability of a peaceful atmosphere wherein not just agricultural but as well socioeconomic development can thrive.

References

- Abdulahi, N. (2003). Youth unemployment and security challenges in Nigeria. *Asian Journal of Humanities and Social Studies*, 3(1): 13-22.
- Achumba, I., CIGHOMEREHO, O. S. and AKPOR-ROBARO, M. O. (2013). Security challenges in Nigeria and the implications for business activities and sustainable development. *Journal of Economics and Sustainable Development*, 4(2): 80-99.
- Adebayo, A. A. (2013a). Youths unemployment and crime in Nigeria: A nexus and implications for national development. *International Journal of Sociology and Anthropology*, 5(8): 350-57.
- Adebisi, A., AZEEZ, M. and OYEDUJI, O. A. (2017). The problems and challenges of insecurity in Nigeria. *Journal of Economics and Sustainable Development*, 6(3): 160-72.
- Adesina, O. S. (2013). Unemployment and security challenges in Nigeria. *International Journal of Humanities and Social Science*, 3(7): 146-56.
- Ajodo, P., ADEBANJOKO, O. and UGWUOKE, C. (2014). Security challenges and implications to national security. *Journal of Economics and Sustainable Development*, 6(4): 169-75.

- Anzaki, M. B. (2014). Violence and thuggery in Nigeria's elections. The lawyers chronicles. Available: <http://www.thelawyerschronicle.com/violence-and-thuggery-in-nigerias-elections/>
- Awodola, B. and Oboshi, A. (2015). Terrorism in northern Nigeria: A threat to food security in maiduguri. *Mediterranean Journal of Social Sciences*, 6(3): 11-17.
- Bakoji, S. (2006). All our leaders are corrupt. Independence, Nigeria daily newspaper. *Daily*, 3(1012): 19-23.
- Bariledum, K. and Serebe, V. (2013). Political elites and the challenges of national development: The Nigeria experience. *European Scientific Journal*, 9(31): 161-72.
- Beland, D. (2005). The political construction of collective insecurity: From moral panic to blame avoidance and organized irresponsibility. Center for European studies, working paper series 126.
- Ben-David, J. (1973). The state of sociological theory and the sociological community: A review article. *Comparative Studies in Society and History*, 15(4): 448-72.
- Central Bank of Nigeria (CBN) (1997). *Annual report and statement of account. Health and production technology*. Institute of Agricultural Research and Training: Ibadan, Nigeria.
- Cervallati, M. and Sunde, U. (2011). *Democratization, violent social conflict and growth, Discussion paper of the school of Economics and political science*. Department of Economics, University of St Gallerio.
- Chinwokwu, T. (2012). *The management of national security*. Edo State University Publishing House.
- Downie, R. (2017). Growing the agriculture sector in Nigeria. *Center for Strategic and International Studies*: Available: <https://www.csis.org/analysis/growing-agriculture-sector-nigeria>
- Epstein, R. A. (2011). Direct democracy: Government of the people, by the people, and for the people. *Harvard Journal of Law and Public Policy*, 34(819): 819-26.
- Fulginiti, L. and Perrin, R. K. (1998). Agricultural productivity in developing countries. *Journal of Agricultural Economics*, 19(2): 45-51.
- Gaskin, J. C. A. (1996). *Thomas hobbes, leviathan*. Oxford University Press: Oxford.
- Granger, C. W. and Newbold, P. (1974). Spurious regression in econometrics. *Journal of Econometrics*, 2(2): 111-20.
- Gujarati, D. N. (2009). *Basic econometrics*. McGraw Hill Book Co.: Singapore.
- Gurr, T. R. (1970). *Why men rebel*. Centre of International Studies, Princeton UP: Princeton, NJ.
- Haruna, J. M. and Jumba, J. (2011). *Small arms, armed violence, and insecurity in nigeria: The niger delta in perspective*. Small Arms Survey: Switzerland.
- Ibekwe, C. and Ewoh, A. I. E. (2012). Resource control and the rise of militia in the Nigerian delta region. *African Social Science Review*, 5(1): 1-13.
- Igbafe, A. A. and Offiong, O. J. (2007). Political assassination in Nigeria: An exploratory study 1986-2005. *African Journal of Political Science and International Relations*, 1(1): 9-19.
- Iweala, O. S. (2013). The measurement of productivity and technical efficiency of cassava famer's in the north-central zone of Nigeria. *Research Journal of Agriculture and Environmental Management*, 2(1): 323-31.
- Leedy, D. (1997). The political construction of collective insecurity: From moral panic to blame avoidance and organized irresponsibility. Center for european studies working paper. Series 126.
- McGrew, T. (1988). *security and order in Smith, M. Smith, S. and White, B. (eds.) British foreign policy: Tradition, change and transformation*. Allen and Unwin Lt.: London.
- Meinzen-Dick, R. A., Haddad, L. and Hazell, P. (2004). *Science and poverty: An interdisciplinary assessment of the impact of the Agricultural research*. Washington, D.C.: <https://ispc.cgiar.org/sites/default/files/pdf/104.pdf>
- Mosca, G. (1939). *The ruling class*. McGraw-Hill: New York.
- Moschini, G. (2001). Economic benefits and costs of Biotechnology innovations in Agriculture, working paper 01-wp 264, center for Agricultural and rural development iowa state university Ames, Iowa 50011-1070. Available: <https://www.card.iastate.edu/products/publications/pdf/01wp264.pdf>
- Muhammed, D. (2015). *How environmental degradation induces insecurity, insurgency*. EnviroNews Nigeria: Nigeria. <http://earthjournalism.net/stories/how-environmental-degradation-induces-insecurity-insurgency>
- Nwagwu, E. J. (2014). Unemployment and poverty in Nigeria: A link to national insecurity. *Global Journal of Politics and Law Research*, 2(1): 19-35.
- Nwolise, E. J. (2006). Unemployment and poverty in Nigeria: A link to national insecurity. *Global Journal of Politics and Law Research*, 2(1): 19-35.
- Obah-Akpowoghaha, N. G. (2013). Theoretical understanding of conflicts and violence in Nigeria: The Niger delta militant and northern islamic sect boko haram in perspective. *Public Policy and Administration Research*, 3(10): 69-78.
- Obasanjo, O. O. (2002). 42nd Nigeria independence anniversary national broadcast in tell magazine. 4(1): 2-6.
- Ogen, O. (2007). The agricultural sector and Nigeria's development: Comparative perspectives from the Brazilian agro-industry economy 1960-1995. *Journal of Agriculture and Biotechnology* 5(1): 85-100. Available: https://www.researchgate.net/publication/26456689_The_Agricultural_Sector_and_Nigeria's_Development_Comparative_Perspectives_from_the_Brazilian_Agro-Industrial_Economy_1960-1995
- Ojogho, O. and Egbare, R. A. (2015). Impact of insurgency on the agricultural development in Nigeria. *The Journal of Agricultural Sciences*, 1(11): 35-41.
- Olukunle, O. T. (2013). Challenges and prospects of Agriculture in Nigeria: The way forward. *Journal of Economics and Sustainable Development*, 4(16): Available: <https://www.iiste.org/Journals/index.php/JEDS/article/view/8461/8391>
- Omede, H. N. (2012). Re-contextualizing unemployment and national security in Nigeria. *Journal of sustainable Development*, 8(6): 231-42.

- Otto, G. and Ukpere, W. (2012). National security and development in Nigeria. *African Journal of Business Management*, 6(23): 6766-70.
- Pareto, V. (1963). *A treatise on general sociology*, edited by a. Dover Publications: Livingstone: New York.
- Pinstrup-Andersen, P. and Pandya, L. R. (2001). *The unfinished agenda. Perspectives on overcoming hunger, poverty, and environmental degradation*. International Food Policy Research Institute: Washington DC.
- Riel, P. (1995). *Food security indicators and framework for use in the monitoring and evaluation of food aid programmes*. Food security and nutrition monitoring project. impact: Arlington.
- Saliu, A. H., Luqman, S. and Abdullahi, A. A. (2007). Environmental degradation, rising poverty and conflict: Towards an explanation of the niger delta crisis. *Journal of Sustainable Development in Africa*, 9(4): 61-80.
- Shu-Acquaye, F. (2013). Human trafficking: Trends in Africa. *Journal of International Law*: Available: <https://www.law.gonzaga.edu/gjil/2013/01/human-trafficking-trends-inafrica>
- Singh, J. and Dhillon, S. S. (2000). *Agricultural geographu*. 2nd edn: Tata McGraw Hill: New Delhi.
- Smith, D. J. (2001). Ritual killing, 419, and fast wealth: Inequality and the popular imagination in southeastern Nigeria. *American Ethnologist*, 28(4): 803-26.
- Tomoloju, B. (2007). How the elite underdeveloped Nigeria culture. *The Constitution*, 7(3): 3-27.
- Usman, A. A. (2006). The rate of youth unemployment and its effects on national security. *Journal of Cultural and Religious Studies*, 1(1): 8-20.
- WDR (2008). Agriculture for development. The world bank annual report. World bank group. Available: <http://siteresources.worldbank.org>

Appendix

Data Presentation

Table-1. The trend of Agricultural Gross Domestic Product (AGDP), Poverty Rate (POV), Unemployment Rate (UNMP), Crime Rate (CR) and Federal Government Expenditures on Internal Security (FGREXIS) from 1996-2018

YEAR	AGDP (billions of naira)	POV %	UNMP %	CR %	FGREXIS (billions of naira)
1996	4133.55	63.5	2.8	6.9	11.16
1997	4305.68	60.6	3.4	17	11.06
1998	4475.24	61.9	3.5	19	11.93
1999	4703.64	63.1	17.5	16	38.66
2000	4840.97	64.4	18.1	12	25.15
2001	5024.54	65.7	13.7	10	38.85
2002	7817.08	66.9	12.2	16	63.24
2003	8364.83	53.5	14.8	14	68.38
2004	8888.57	53.3	11.8	16	97.8
2005	9516.99	53.02	11.9	19	81.95
2006	10222.47	53.12	12.3	22	117.96
2007	10958.47	52.99	12.7	22	181.29
2008	11645.37	53.6	14.7	27	196.9
2009	12330.33	53.5	19.7	25	221.65
2010	13048.89	54.43	21.1	24	224.2
2011	13429.38	54.9	15.8	24	280
2012	14329.71	55.01	16.2	27	362.5
2013	14750.52	55.21	16.7	25	292.74
2014	15380.39	55.9	17.1	27	273.14
2015	15952.22	55.8	17.6	26	410.2
2016	16252.28	57.2	18	28	323.45
2017	84442.5	61.2	18.5	27	388.9
2018	5288339	53.7	23.1	27	580.1

Sources: CBN Annual Report (various issues), World Bank and International Statistic Database (2019)