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### Effect of Economic Diversification on Agricultural Output in Taraba State, Nigeria

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#### Abstract

The study examined the effect of economic diversification of the present regime on agricultural output in Taraba State. The main objectives of the study was to examine the relationship between diversification and economic growth in Taraba State, identify the ways in which diversification can boost the economy of Taraba State and examine the relationship between economic diversification and agricultural output in Taraba State. Literature related to the study were adequately reviewed. Survey design was adopted for the study. Population of this study constituted the staff of ministry of agriculture (both state and federal), farmers cooperatives and individual farmers across Taraba State. Simple random sampling techniques was adopted for this study involving 109 respondents. This technique is adopted

so as to give equal opportunity to the entire population represented in the study. The 4 points Likert-Scale questionnaire was designed to elicit responses from the respondents. Descriptive statistics was employed for data analysis. The findings of the study revealed that diversification has a positive relationship with economic growth in Taraba State. The study also revealed that increase in government expenditure, policy formulation, increase in soft loans to farmers, subsidy and incentives are ways by which agricultural diversification can be encouraged. It was also revealed that agricultural diversification ensures food security and increase in agricultural output.

**Keywords:** Economic Diversification, Agricultural Output, Descriptive Statistics

#### 1. Introduction

The relative economic stability of a nation/region is often linked to the extent of diversification of the sources of income and employment, (Uzonwanyi, 2015) <sup>[28]</sup>. An economy that derives its sustenance from one or few industries is certainly more vulnerable to fluctuations and shocks from the vicissitudes of cyclical behavior than those with a wide variety of income sources. As one of the most efficient tools for growth and development, economic diversification has been taken by many countries since 1970. The role of diversification in economic growth and the relationship between these two have been the subject of a wide range of empirical and theoretical studies in economic development field. As stated by AbouStait (2005), the argument concerning the role of diversification as one of the main deterministic factors of economic growth goes back to the classical economic theories by Adam Smith and David Ricardo.

Although most recent literatures claim that export growth promotes overall economic growth and that there is strong relationship between these two variables and that diversification contributes to the rate of economic growth (Homayounifar & Rastegari, 2008). However, Usman and Salami (2008) agreed that this is not the case for Nigeria. Meanwhile, Osuntogun, Edordu and Oramah (2007) note that one major characteristic of Nigeria's economy is the continued reliance on crude oil as source of income. This market concentration has been blamed, in part, for the countries misfortunes, as recessions in developed countries are usually fully transmitted to Nigeria. Osuntogun, Edordu and Oramah (2007) maintain that the negative effects from such shocks can be minimized by diversifying the economy, especially since the level of economic activity is likely to vary across regions.

From the period the Structural Adjustment Programme (SAP) was introduced in Nigeria, concerted efforts had been made to diversify Nigerian economy by promoting other sectors (Ogbonna, Uwajumogu, Chijioke & Agu, 2013). The importance of these sectors cannot be over-emphasized. Nigeria's non-oil exports which can broadly be classified into three, namely: agricultural produce, manufactured exports and solid minerals has great potentials.

Although Harb (2008) found that oil revenues have no long-run effect on the macro performance of the economy and as such,

cannot be blamed for a bad performance of the economy. While Zafar (2004) argues that volatility has become a prominent and endemic feature of the world economy, and pronounced fluctuations in commodity prices, especially oil, have had a negative effect on the macroeconomic performance of many developing countries particularly, Nigeria. Zafar stressed that the management of volatility is very difficult in oil-exporting countries in the developing world because fiscal revenue and macroeconomic performance are highly sensitive to fluctuations in the international oil price and thereby call for diversification. Even though various factors have been adduced to Nigeria's poor economic performance, the major problem has been the economy's continued excessive reliance on the fortunes of oil market and the failed attempts to achieve any meaningful economic diversification, reflecting the effect of the so called "Dutch disease (an economic term for the negative consequences that can arise from a spike in the value of a nation's currency)". The need to correct the existing structural distortions and put the economy on the path of sustainable growth through diversification of non-oil product export is therefore compelling.

A review of the Federal Government revenue profile in the last half-decade showed that oil earnings accounted for over 80% of the foreign exchange earnings, while the non-oil sector, despite its improved performance, contributed 20% (CBN, 2010), thus revealing the extent of the vulnerability of the economy to swings in the price of oil in the international market. The renewed emphasis on the production of Shale oil in the United States and other alternatives to fossil-fuel energy, such as solar, wind and bioenergy in the advanced economies, has reduces oil demand and price, and further weaken Nigerian earnings. Thus, in the absence of concerted efforts to shore-up and widen the revenue base, there will be reduction in crude oil revenue and excess crude oil receipts savings in the coming years with grave macroeconomic implications.

The performance of the non-oil export sector such as agricultural sector, manufacturing sector and solid minerals sector in the past three decades leaves little or nothing to be desired, in spite of the efforts to promote non-oil exports in Nigeria. Abogan, Akinola and Baruwa (2014) note that an assessment of the trend and patterns of activities in the non-oil sector of Nigeria revealed that despite the various policies, strategies and reform programmes, the contributions of the sub-sectors of agriculture have been dismal, disheartening and below its full potential. The share of non-oil export in the country's total export earnings has remained very low and it was 1% in 2008 (CBN, 2008), and up 4.8% in 2013 (CBN, 2013). Ezeudu (2014) notes that recent proactive efforts from the private sector, export processing free zone scheme and Nigeria Export and Import Bank (NEXIM) especially efforts of the banking sector to finance exportation of commodities are becoming noticeable in the nation's export profile, with the traditional commodities like cocoa, being upstaged by new ones like cashew nut, ginger and sesame seed in the foreign market. This suggestion, however, needs to be empirically proved to be reasonable and acceptable. In view of the foregoing, this study seeks to examine the diversification of non-oil export product as a precondition for accelerating real economic growth in Nigeria, thus the focus of this study.

As global oil prices continue to fall sharply over the past years, Nigerians economy that is largely dependent on oil

needs not be told that tough times beckons. Thus, Nigeria must recognize the urgency and severity of the matter. As a matter of fact, all efforts must be geared and directed towards revamping the agricultural sector as a means to set the nation's economy on a path of rebirth and recovery. Setting the nation's economy on the path of rebirth and recovery requires a complete shift of attention back to the Agricultural sector, transportation sector, tourism, telecommunication as the only way out of this conundrum.

In line with the Federal Government of Nigeria's diversification policy, Taraba State of Nigeria is not left out. Efforts have been made in the last tenure to expand the revenue base of the state through agriculture. The recent establishment of the 15 Hectare Green House is aimed to produce high quality vegetables and enhance the state internally generated revenue (IGR). The Green House is so far said to have employed 500 unemployed youths in the state, (Taraba State Ministry of Agriculture, 2019). Furthermore, the Taraba State government under the rescue mantra has acquired 9,900 metric tons of fertilizer to distribute to farmers in the state with the aim of increasing soil fertility and increase crop productivity in the state. among other achievements are procurement of Sesame foundation seeds, procurement of cassava stems, procurement of 500 metric tones of rice, procurement of cocoa pods procurement of multipurpose threshers and procurement of 375HP Massey Ferguson tractors, (Taraba State Ministry of Agriculture, 2019).

It is however disheartening that despite all these efforts, there has been no visible change in agricultural productivity. It is against this background that this study seeks to investigate the effect of diversification on agricultural output with particular reference to Taraba State.

Hitherto, Nigeria was famous in her agrarian economy through which cash crops like palm produce, cocoa, rubber, timber, ground nuts, were exported, thus making Nigeria a major exporter in that respect and other sectors that contributed to economic growth. Undoubtedly, the discovery of crude oil has contributed and assisted Nigeria's economic prosperity and growth. Nevertheless, the current dwindling in oil price since June 2014, after five years of oil windfall, has immensely affected the economy of major oil exporters like Nigeria, Saudi Arabia, Iraq and Libya, etc. as was majorly aggravated by Middle East unrest and wars. Another huge blow to crude oil exporters was America's reduction in the number of barrels they import from nations. These factors have created a bad market for Nigeria and thus, her economy is presently shaking. This scenario is worsening by Nigeria's running mono-economic economy and the abandonment of agriculture, manufacturing, education, telecommunication among others. The adverse effect of this boom and euphoria led to the establishment of new urban cities that necessitated mass exodus of able-bodied men and women from the rural areas to the cities in search of white-collar jobs and quick money. This development drastically reduced the productive activities of Nigerians, thereby increasing their dependency on oil money. With the increasing reduction of oil revenue, there is need to diversify the economy. This will pave way for other sectors (particularly agricultural) sector to contribute their quota to the economic development of Nigeria.

Taraba State of Nigeria is not left out in pursuance of the Federal Government diversification policy. Efforts have been made in the last tenure to expand the revenue base of

the state through agriculture. This is noticeable in the recent commissioning of the Cucumber farm, a multi-billion Naira project embarked upon by the state government, procurement 9,900 metric tons of fertilizer to distribute to farmers, procurement of cocoa pods procurement of multipurpose threshers and procurement of 375HP Massey Ferguson tractors in other to consolidate the Federal Government program on diversification. This, according to the state government is geared towards expanding its revenue sources instead of depending on the monthly allocation received from the Federal Government.

Despite all these efforts, agricultural output has not significantly improved as intended. It is against this background that this study seeks to investigate the effect of agricultural diversification on agricultural output with particular reference to Taraba State.

## **2. Conceptual Framework**

### **2.1 Concept of Economic Diversification**

Traditionally, economic diversification has been used as a strategy to transform the economy from using a single source to multiple sources of income spread over primary, secondary and tertiary sectors, involving large segment of the population. The objective has been “to improve economic performance for achieving sustainable growth, for example, building resilience against fluctuations in extra regional economic activity, reducing vulnerability to income loss due to volatility of product price on the international market, creating job opportunities and alleviating poverty” (Nourse, 2008).

Structural models of economic development hold that “countries should diversify from primary exports into manufactured exports in order to achieve sustainable growth” (Chenery, 2009; Syrquin, 1999). The views above indicate that economic diversification is any strategy adopted by a nation to reduce the vulnerability of its economy to shocks detrimental to it by spreading and increasing productivity from primary to secondary and even tertiary products (export). Economic diversification in its standard usage, either in terms of the diversity of economic activities or markets, is a significant issue for many developing countries, as their economies are generally characterized by the lack of it. They have traditionally relied heavily on the production of primary commodities that are predominantly vulnerable to climate variability and change.

Diversification implies “movement into new fields and stimulation and expansion of existing traditional products.” Diversification does not discourage specialisation, but requires that resources be channelled into the best alternative uses (see Ayeni, 1987; Iniodu, 1995). In macroeconomic planning, diversification promotes growth and development through the mobilisation of savings from surplus sectors for use in the development of deficit sectors of the economy. Options for diversifying an economy abound, such as agriculture, entertainment, financial services, industrialisation, information and communication technology, tourism, etc. However, it is worthy to note that country-specific circumstances ought to as a matter of necessity, be considered. This is cogent, since due to structural differences, a model that fits an economy perfectly well may prove irrelevant in another. With a major objective of diversifying the productive base of the Nigerian economy with a view to reducing dependence on the oil sector, this

study zero in on ‘agriculture’ and ‘tourism,’ as imperatives. The choice of this dual approach is informed by the huge successes recorded by some Asian countries—which are collectively referred to as ‘Asian Tigers’—in applying these imperatives, as well as the fact that these countries were basically at the same level of national development with Nigeria, at the time of their respective take-off and still share certain similarities with Nigeria.

### **2.2 The Structure of Agricultural Production in Nigeria**

The structure of Nigerian agriculture has become increasingly bi-modal in the last decade. There has emerged a fast-growing modern sub-sector, nurtured through direct participation by government and the design of various agricultural incentives, which have attracted private individuals into profit oriented farming enterprises.

This modernized agricultural production sub-sector, which may probably account for up to 5 percent of Nigeria’s total agricultural production, employs modern technologies. There is enough evidence to show that these modern enterprises are well informed on how to develop and, also that several key agricultural policy measures have tended to be of more benefit to them (than to the traditional producers.) who were expected to be the major beneficiaries.

In contrast, the traditional production sub-sector, which accounts for over 80 percent of total agricultural production is dominated by small farm holdings, using less productive technologies. To a large extent, production in the traditional setting is for subsistence, although commercial production has grown rapidly in recent years. This scenario has created constraints/ challenges for agricultural development such as: environmental constraints; land constraints as well as Capital constraints, arising from the disproportionate share of government spending going to agriculture, the misdirection of government funds, as well as inadequate and lopsided government policies?

### **2.3 Characteristics of Primary Agricultural Production**

The following excerpt from the FOS/NASC report reveals that the primary production activity in the agricultural sector is largely informal, judging from the characteristics of the informal sector (listed earlier).

The average size of the holding was 2.82 hectares (note the smallness of scale of operation) the ownership structure was such that 95% was under sole ownership, while 5% were jointly owned with members of the same household. Furthermore, the holder constituted 21% of the work force on the farm, while 31% were unpaid family members. The report also showed that the technology employed is still low as only 32% reported the use of chemical fertilizer, 11% used improved seedlings, 9% used pesticides or insecticides and only 1%, 4% and 5% used vaccines, drugs and supplementary feeds, respectively in their livestock enterprises.

Finally, only 1% of the farmers (who used credit for their work) obtained credit through the formal banking and cooperatives system. Thus, informal credit systems such as “ESUSU”, friends and relatives and to a lesser extent, money lenders were said to have provided the bulk of the credit for farming activities (Evbuomwan, 1997).

### **2.4 Measures Aimed at Diversifying the Nigeria Economy through Agriculture in Taraba State**

Taraba State is richly endowed with agricultural potentials

which include 4,500, 000 hectares of arable land and wider range of soil and climate conditions ranging from semi temperate on the Mambilla Plateau to tropical conditions down the plains. In view of the above, massive investment in agricultural sector is necessary to achieve rational and sustainable economic development in the state, as investment in agricultural sector is a direct investment in the welfare and source of livelihood of the majority of the populace.

It is in cognizance of this fact and the diversification agenda of the President Muhammadu Buhari that the government of Taraba State has accorded the agricultural sector an upper most priority in resource allocation. The state has initiated and effective strategy to harness the abundant agricultural resources in the state. To this end, the government of Arch. Darius Dickson Ishaku, the executive governor of Taraba State has done tremendous efforts in the agricultural sector. Among this efforts account to Taraba State Ministry of Agriculture and Natural Resources, (2019) are:

#### 2.4.1 Establishment of 15-hectare Green House

The aim of the Green House is to produce high quality vegetables, i.e cucumber, pepper and lettuce for both local and international consumption, increase the state IGR, employment of youth, training and excursion. The project cost the state government N2, 044,724, 246.00. The farm has so far produces 160 metric tons of tomatoes per annum, 120 metric tons of cucumber per annum, 60 metric tons of pepper per annum, and 29, 640 heads/6bed per annum.

#### Other efforts made by the Taraba State Government are:

1. Procurement of 9,900 metric tons of Fertilizer. The aim is to improve the fertility of soil for optimum yield, and increase productivity and income. The cost of the fertilizer was put at N1, 265, 383, 265.30.
2. Procurement of Sesame foundation seeds to encourage and increase mass production of crop 20.4 metric tons of sesame foundation seeds were procured and distributed to 5,000 farmers in the state so as to increase farmers' income and promote export.
3. Furthermore, the state government procured 7.5 million cassava stems and distributed the over 5000 farmers across the state. The aim of this is to encourage mass production of cassava, provide raw materials for cassava processing plants with the view to add value to the cassava produce, increase the state IGR and increase farmers' income.
4. 500 metric tons of rice seeds were also procures and distributed to farmers. Similarly, 3,800 improve Cocoa pods were procured and a Cocoa grading centre established by the state government to grade and rebrand cocoa beans in order to enhance the quality to meet both national and international standard.
5. Other achievements include procurement of multi-purpose threshers, 30 units of 375HP Massey Ferguson tractors, 100 units of power tillers and assorted herbicides for dry season farming.

These among others are the efforts and achievement of the Taraba State Government aimed at diversifying the economy of Nigeria through Agriculture.

Nigeria is rated as the largest nation on the African continent, with a vast geographical landmass of 923,768 km<sup>2</sup>. Nigeria has an estimated population of over 170 million inhabitants (NPC, 2011 Est.). The country adjoined

across the tropics of Guinea Gulf on the western Coast of Africa and also the Republic of Benin, Chad, and Cameroon in the east. Nigeria is endowed with a variety of vegetation, dynamic topography, and viable agro-climatological conditions. Nigeria is also one of the few in the continent blessed with good arable farmland for agricultural activities. Among the Nigerian industries, service accounts for 32% of the GDP, manufacturing 11% and agriculture 30%. Therefore, it is obvious that the agricultural sector plays a significant role in the economic growth and development of the Nigerian economy.

Agriculture deals with the cultivation of land for crop production and rearing of animals for the use of man and also for the feed of animals (livestock). Agriculture has several other sub-sectors like forestry, fishery, processing and marketing of the agricultural products. The agricultural sector provides job opportunities and raw materials for many agro-allied industries.

More so, agriculture is known to be an extended age practice in the third world and developing nations. The importance of agricultural development to socio-economic growth and development in many third world countries is keen on their transition to economic prosperity. Agriculture contributes over one quarter of the GDP in the most developing nations of the world, especially in Nigeria. The statistics are much higher in the least developed countries (United Nation, 2007). According to the World Bank development report (2007, 2008), agriculture serves as a haven for source sustenance of life, for over 2.5 billion people in the world. The agricultural sector engages a large number of the world population directly or indirectly in the value chain.

Furthermore, Beinteman and Stadt (2006) asserted that, most African nations remain dominated by small-scale farmers who employed crude tools and the use of largely fragmented land to cultivate the crop and rear animals for man's advantage. Most of these peasant farmers dwell in the rural communities in Africa. These account for the overwhelming 80% of the labor force. Daramola *et al.* (2007) asserted that agriculture constituted for 60-70% of the nation's export in the early 1950s and 1960s. Nigeria was viewed as a net exporter of most agricultural products like cocoa, rubber, oil palm, palm kernel, groundnut among many other cash crops with economic value. The accrual from the exports serves as a core source of revenue generation for the government. The above-mentioned period was when Nigeria was referred to as food secured; that is self-sufficient in food production with the surplus for export. However, there been a contrast to this trend, after the discovery of oil in commercial quantity in the late 1960s, which lead to the high influx of foreign exchange earnings for the country. The implication of the oil boom was the gradual decline in the other non-oil sectors especially the agricultural sector that received less attention. Much focus was geared toward the oil exploration, extraction and the returns it brought (Ifeanyi *et al.*, 2008). Nevertheless, the trend of agriculture in Nigeria over the past decades has not been favorable (FAO, 2006). The growth of agriculture in the sixties and seventies has been experiencing a downward trend. However, the growth rate increased sharply in the 1980s and 1990s. Between these periods, agriculture contribution to GDP rose from 1.1% to 2.3%.

### 3. Empirical Review of the Literature

Many studies have examined the relationship between



diversification and agriculture output cum economic growth. Findings from these studies are mix. While some studies established that agriculture exerts a negative impact on economic growth, other findings disapproved this position. This section reviews the findings on the relationship between agriculture and economic growth and also reviews the factors that account for the mixed findings. Syed, Muhammad and Rana (2015) analyzed the impact of agricultural exports on the macroeconomic performance of Pakistan for the period 1972 to 2008. The study found a negative relationship between agricultural export and economic growth, while a nonagricultural export was found to have positive relationship with economic growth. On the basis of the empirical results, the study suggested that Pakistan has to embark on structural changes in agricultural exports by converting its agricultural exports into value added products. Converting agricultural exports into value added products is applicable to the Nigerian economy but their findings showing a negative relationship between agricultural export and economic growth are not applicable to the Nigerian economy.

Furthermore, Ideba, Iniobong, Otu and Ito (2014) investigated the relationship between agricultural public capital expenditure and economic growth in Nigeria over the period 1961 to 2010 using annual data obtained from the Central Bank of Nigeria. The data were analysed using Augmented DickeyFuller test, Johansen maximum likelihood test and Granger Causality test. The result of the Johansen co-integration test showed that there exists a long run relationship between all the explanatory variables and the explained variable. The result of parsimonious error correction model showed that agricultural public capital expenditure had a positive impact on economic growth. Also, Granger Causality test showed a unidirectional relationship between agricultural public capital expenditure and agricultural economic growth. This means that agricultural economic growth does not cause expansion of agricultural public capital expenditure; rather it indicates that agricultural public capital expenditure raises the nation's agricultural economic growth. This investigation dint makes emphasis on policy adjustment as a factor needed to promote economic growth.

In addition, Bakare (2013) examined the relationship between sustainable agriculture and rural development in Nigeria. Vector Auto Regression analytical technique (VAR) was employed for the empirical study. The a priori expectation is that sustainable agriculture will impact positively on rural development in Nigeria. The findings of the study show that the past values of agricultural output could be used to predict the future behaviour of rural development in Nigeria. The main conclusion of this study was that while agriculture remains dominant in the Nigerian economy, it is unsustainable; the food supply does not provide adequate nutrients at affordable prices for the average citizen and rural development is deteriorating. The findings and the conclusion of the study suggested the need for the policy makers to promote agriculture to a sustainable level by driving rural development.

Similarly, Odetola and Etumnu (2013) investigated the contribution of the agriculture sector to the economic growth in Nigeria using the growth accounting framework and time series data from 1960 to 2011. The study found that the agricultural sector has contributed positively and consistently to the economic growth in Nigeria, reaffirming

the sector's importance in the economy. The contribution of agriculture to economic growth is further affirmed from a causality test which showed that agricultural growth Granger-causes GDP growth, however no reverse relationship was found. The resilient nature of the sector is evident in its ability to recover more quickly than other sectors from shocks resulting from disruptive events e.g., civil war (1967-1970) and economic recession (1981-85) periods. The study also found that the crop production subsector contributes the most to agricultural sector growth and that growth in the agriculture sector is overly dependent on growth of the crop production subsector. This indicates the importance of this subsector and probably, lack of attention or investment to the other subsectors.

More so, Aminu and Anono (2012) investigated the contribution of agricultural sector and petroleum sector to the economic growth and development (GDP) of the Nigerian economy between 1960 and 2010 through the application of Augmented Dickey-Fuller technique in testing the unit root property of the series; after which Chow breakpoint test was conducted to test the presence of structural break in the economy. The results of unit root test suggest that all the variables in the model are stationary at first difference and the results of Chow breakpoint test suggest that there is no structural break in the period under review. The results also revealed that agricultural sector is contributing higher than the petroleum sector, though they both possessed a positive impact on the economic growth and development of the economy. A good performance of an economy in terms of per capita growth may therefore be attributed to a well-developed agricultural sector.

Likewise, Abogan, Akinola, and Baruwa (2014) investigated the impact of non-oil export on economic growth in Nigeria between 1980 and 2010, and employed the co integration approach. The study reveals that the variables are co integrated which confirms the existence of long-run equilibrium relationship between the variables. Thus, this suggests that all the variables tend to move together in the long run. The impact of nonoil export on economic growth was moderate as a unit increase in non-oil export raised the productive capacity of the economy by 26%.

Moreover, Marie (2015) investigated Economic Diversification in Nigeria in the Face of Dwindling Oil Revenue. Following the supply and demand limitation of major importers from the country, which brought about the fall in the price of oil by more than 40% since June 2014 when it was \$115 a barrel, which now is below \$70, after five years of stability, it is a well-known fact that Nigeria's continuous large earnings or revenue from this sector will be impossible. As a matter of fact, there is an urgent need for the Nigerian government to begin looking into diversification of various sectors of the economy so as to attain solid economic growth. The Neo-Classical Growth Model, some empirical researches and secondary data collected and analyzed support our call for the diversification of Nigerian economy with an urgent need to decentralizing concentration on mono-crude oil -economy. These studies have shown that there exists a positive relationship between economic growth in Nigeria and diversification of other sectors because, when there were proper management of human resources, huge investment and concentration on agriculture, Nigerian economy was recorded to be healthy and vibrant. In those golden years, agriculture offered over 70% of Nigeria's teaming

population job opportunities. Descriptive statistical method likewise was employed in his work.

Nevertheless, an empirical example relating economic diversification to risk reduction and economic growth was a research carried out by Elton and Gruber (1977). They worked out an empirical example of the gains from economic diversification. Their approach was to consider a population of 3,290 securities available for possible inclusion in a portfolio, and to consider the average risk over all possible randomly chosen n-asset portfolios with equal amounts held in each included asset, for various values of n. Their result shows that most of the gains from diversification come for  $n \leq 30$  which indicates continuous economic growth.

However, Nwanne (2014) investigated the relationship between diversification of non-oil export products and economic growth in Nigeria from 1981 and 2014. The study examines the significant role of non-oil export product on real economic growth which the previous studies might have ignored and the aggregate non-oil exports product data used by them might bias their conclusions. In achieving the objectives of the study, Ordinary Least Square Methods involving Error correction mechanism, co-integration, over-parametization and parsimonious were adopted. Johansen Co integration test reveals that the variables are cointegrated which confirms the existence of long-run equilibrium relationship between the variables. Thus, this suggests that all the variables tend to move together in the long run. The study reveals that there is significant relationship between diversification of non-oil export and economic growth in Nigeria during the period. This was evident in the study that the policies on non-oil products during the period in Nigerian do not sufficiently encourage non-oil export, thus reduce their contributions to growth. This is because the study reveals that agricultural and manufacturing components of non-oil export has positive and significant relationship with economic growth while solid minerals components has negative and insignificant relationship with economic growth in Nigeria. This study therefore recommend that government should enforce non-oil export policies towards resuscitating the failing non-oil export industry. The study among other things encourages the government to strengthen the legislative and supervisory framework of the non-oil products in Nigeria and diversify the economy to ensure maximum contributions from all faces of the subsectors to economic growth of Nigeria.

#### 4. Data and Methodology

The instrument used for data collection is questionnaire. The 4 points Likert-Scale questionnaire is constructed with a single option response by ticking the option most appropriate to them. Section 'A' contains demographic information of the respondents, while section "B" contain the questionnaire items. Four-point rating scale with a response mode of Strongly Agree, Agree, Disagree, and Strongly Disagree will be used for this section of the instrument. The scale is rated as follows strongly Agreed (SA) 4 points, Agreed (A) 3 points, Disagreed 2 points, Strongly Disagreed (SD) 1. A tick by the respondents indicates the option he/she has selected. The questionnaire items is given hand-to-hand to the respondents. They are required to respond to the items freely. On completion, the

questionnaire is retrieved from the respondents for analysis and interpretation.

Survey design is adopted for the study, the rationale behind choosing this research design is because a survey research is one in which a group of people are studied by collecting and analyzing data from only few people considered to be representative of the entire group. The survey design has the advantage of studying a part of the population to make a generalization on the entire population. However, data analysis is conducted using a descriptive statistics. Similar items with same objectives are presented in one table with their percentages and means attached. Formula for mean (X) is presented as follows:

$$X = \frac{\sum fx(x)}{N} \quad (1)$$

Where:

$\sum$  = Summation

F = Frequency (output)

X = Nominal Value of option (EconomicDiversification)

N = Number of observant

As hitherto, the four (4) point Likert Scale is built on Strongly Agree, Agree, Disagree and Strongly Disagree numerically represented by 4, 3, 2 and 1 respectively. The values obtained from the scale are added and divided by the number of observation. The division of this values then presents the 2.50 which is called the mean magnitude or decision rule.

#### Decision rule

Any item whose mean is equal or greater than 2.50 ( $X \geq 2.50$ ) will be regarded as agreed, while any item whose Mean is  $X < 2.50$  will be regarded as disagreed, (Ajai & Amuche, 2015).

#### 4.1 Population of the Study

The population of this study constituted the staff of ministry of agriculture (both state and federal), farmer's cooperatives and individual farmers across Taraba State. The essence of choosing these populations is to find out whether agricultural diversification is proportionate to agricultural output hence they are the people directly involved in agro-business.

The simple random sampling techniques is adopted for this study. The random sampling is that which a cross-sectional population is randomly selected to represent the entire population. This technique is adopted so as to give equal opportunity to the entire population represented in the study. Staff of ministry of agricultural, farmers cooperatives and individual farmers are sampled for the study. The sample size for the study is determined using the Taro Yamane formula.

**Table 1:** Population of the Study

Respondents	Number of staff
Staff of Ministry of Agriculture	55
Farmers' cooperative	45
Individual farmers	50

Source: Field survey, 2023

**Table 2:** The relationship between diversification and economic growth in Taraba State, Nigeria

S. No	Statement	SA	A	D	SD	% A	% D	X	Decision
1	Diversification in agriculture increases food supply in the market	50	29	16	14	73	27	3.1	Agreed
2	Agricultural diversification reduces the level of unemployment in the economy	35	29	30	15	59	41	2.7	Agreed
3	Agricultural diversification increases the quantity of raw materials available for local industries	39	20	30	20	54	46	2.7	Agreed
4	Agricultural diversification reduces poverty	54	25	16	14	73	27	3.1	Agreed
5	Diversification enhances economic growth	28	31	26	24	54	46	2.6	Agreed

Source: Field Survey, 2023

## 5. Empirical Results and Discussion

This section presents the data obtained from the structured items. The data is presented in table with analysis and interpretation given underneath for easy understanding.

In item (1) of Table 2, the responses obtained on whether diversification in agriculture increases food supply in the market, the responses showed that a mean of 3.1 which is above the decision rule of 2.5. It can therefore be inferred that diversification in agriculture increases food supply in the market. Responses from item (2) shows a mean of 2.7 above the decision rule of 2.5 when the respondents were asked whether agricultural diversification reduces the level of unemployment in the economy. It can be deduced from this item that agricultural diversification reduces the level of unemployment in the economy. In item 3 of the above table, respondents agreed to this assertion agricultural diversification increases the quantity of raw materials

available for local industries with a mean of 2.7 which is above the decision rule of 2.5. It can therefore be inferred from the above item that agricultural diversification increases the raw materials available for local industries. Similarly, item (4) shows a mean of 3.1 which is above the decision rule on respondents' opinion on whether Agricultural diversification reduces poverty. The respondents also agreed that diversification enhances economic growth with a mean of 2.5 as can be seen in item (5) of table above.

Furthermore, the findings of the study revealed that diversification has a positive relationship with agricultural output in Taraba State. This corroborates the findings of Nwanne (2014), who investigated the relationship between diversification of non-oil export products and economic growth in Nigeria.

**Table 3:** Ways in which diversification can boost the economy of Taraba State, Nigeria

S. No	Statement	SA	A	D	SD	% A	% D	X	Decision
6	Diversification encourages government expenditure in agriculture	35	29	30	15	59	41	2.8	Agreed
7	Diversification promotes policy formulation in agriculture	39	20	15	35	54	46	2.6	Agreed
8	Agricultural diversification enable the government to allocate funds to agricultural sector	28	31	26	24	54	46	2.6	Agreed
9	Agricultural diversification promotes accessibility of soft loans to farmers and farmers cooperatives	50	29	16	14	72	28	3.1	Agreed
10	Diversification ensures the provision of incentives and subsidies to farmers to promote agricultural output	30	31	13	35	56	44	2.5	Agreed

Source: Field Survey, 2023

In item (6) of Table 3, responses on whether diversification encourages government expenditure in agriculture, the respondents agreed with a mean of 2.8 above the decision rule. Similarly, the respondents agreed that diversification promotes policy formulation in agriculture as can be seen in item (7) with a mean of 2.6 above the decision rule. The responses in item (8) shows that the respondents agreed that agricultural diversification enable the government to allocate funds to agricultural sector with a mean of 2.6 above the mean criterion. Again, the respondents agreed that agricultural diversification promotes accessibility of soft loans to farmers and farmers' cooperatives as can be seen in item (9) with a mean of 3.1 above the decision rule. The

responses in item (10) shows that the respondents agreed that diversification ensures the provision of incentives and subsidies to farmers to promote agricultural output with a mean of 2.5 as can be seen in the table above.

In addition, the study also revealed that increase in government expenditure, policy formulation, increase in soft loans to farmers, subsidy and incentives are ways by which agricultural diversification can be encouraged. This agrees with the findings of Ideba, Salisu & Mohd (2014), who investigated the relationship between agricultural public capital expenditure and economic agricultural output in Nigeria.

**Table 4:** Relationship between economic diversification and agricultural output in Taraba State

S. No	Statement	SA	A	D	SD	% A	% D	X	Decision
11	Diversification in agriculture increases agricultural output	30	29	30	20	54	46	2.6	Agreed
12	Agricultural diversification enhances food security	51	28	16	14	72	28	3.1	Agreed
13	Agricultural diversification increases the availability of food	24	20	30	35	40	60	2.3	Disagreed
14	Diversification in agriculture reduces the importation of food from other countries	26	29	39	15	50	50	2.5	Agreed
15	Agricultural diversification reduces the level of hunger among household	19	31	26	33	46	54	2.1	Agreed

Source: Field Survey, 2023

In item (11) of the Table 4, responses obtained from the respondents shows that diversification in agriculture increases agricultural output with the mean of 2.6 above the

mean magnitude. Similarly, the respondents also agreed that agricultural diversification enhances food security. This is represented with the mean of 3.1 above the decision rule of

2.5 as can be seen in item (12). On the contrary, in item (13) of the table above, a mean of 2.3 disagreed that agricultural diversification increases the availability of food. The respondents agreed that diversification in agriculture reduces the importation of food from other countries as can be seen in item (14) with a mean of 2.5 above the decision rule. The responses in item (15) shows that the respondents disagreed that agricultural diversification reduces the level of hunger among household with a mean of 2.1 below the mean magnitude as can be seen in the table above.

Moreover, the study also reveals that there is significant relationship between diversification of non-oil export and agricultural output in Taraba state during the period. This was evident in the study that the policies on non-oil products during the period do not sufficiently encourage non-oil export, thus reduce their contributions to aggregate agricultural output in the State.

## 6. Conclusion and Recommendations

The prospects for growth and sustainable development in Taraba State Agricultural sector are bright, if government adopts pragmatic steps to stem the inadequacies in the sector. The study examined the effect of economic diversification of the present regime on agricultural output in Taraba State. The main objectives of the study was to examine the relationship between diversification and economic growth in Taraba State, identify the ways in which diversification can boost the economy of Taraba State and examine the relationship between economic diversification and agricultural output in Taraba State. Literature related to the study were adequately reviewed. Survey design was adopted for the study. The population of this study constitutes the staff of ministry of agriculture (both state and federal), farmers cooperatives and individual farmers across Taraba State. Simple random sampling techniques was adopted for this study involving 109 respondents. This technique is adopted so as to give equal opportunity to the entire population represented in the study. The study also revealed that increase in government expenditure, policy formulation, increase in soft loans to farmers, subsidy and incentives are ways by which agricultural diversification can be encouraged. It was also revealed that agricultural diversification ensures food security and increase in agricultural output.

Since the agricultural farming in Taraba State is a mixture of subsistence production and modern farming system, the study believes that application of uni-modal and bi-modal strategy of agricultural development would be appropriate option for Taraba state towards economic diversification. The uni modal strategy takes care of Peasant farmers in the traditional setting while the bi-modal takes care of large mechanized commercial farms since the State is blessed as the "nature's gift to the nation" with abundant land and water resources. This is because the bi-modal strategy emphasizes a synchronized development of both agricultural sector and industrial sector at the same pace due to backward and forward integration between the two sectors. This leads to increase commercialization of agricultural production thereby creating room for exports, foreign exchange earnings, employment, wealth and income distribution there by reducing poverty.

In view of the aforementioned, the study recommended that agricultural value chain system must be strengthening through increased government spending and investments

expenditures in the sector. Fiscal incentives and special agricultural credit that will promote food production and efficiency in resources allocation must be sustained. To drive agricultural sector out of the present economic quagmire the government and its officials should stop paying lip service to development of the sector. A more proactive and pragmatic approach in decision making and service delivery must be channeled into the sector so as to ensure increased production, food security and zero hunger environment for the citizens. Furthermore, the sector must be opened to foreign investments technological inputs and mechanization. Government must ensure that efficient institutional frame work is put in place to ascertain success of every development programs shoved into agricultural sector. Also, both public and private partnership should be encouraged in agricultural production. Government must look inward with regards to product development and value chain in agricultural production. National savings and investment must be sustained in the sector by both public and private initiatives and expanded to support increased domestic production of food and for exports. Agricultural fund schemes and intervention must be established to take care of basic constraints facing agricultural production. Disbursement and utilization of such funds must be monitored and ensure it is applied in agriculture and not non-production ventures. Finally, agricultural Research institutes must be strengthened through provision of research funds, experts, skilled and well-trained personnel or researchers. These researchers would enhance increased output and yield in agricultural production through continuous research in agricultural inputs such as farm machines, equipment, seedlings, weeds control, soil nutrients and other inputs which are hall mark of agricultural modernization.

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