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# Agricultural Credit And Farmers' Productivity In Gwarzo Local Government Area Of Kano State, Nigeria

**H. B. Harris**

Department of Accounting Education, Federal College of Education (Technical), Bichi, Kano State, Nigeria

**M. Ismail**

Department of Agricultural Technology, College of Agriculture Gujba, Yobe State, Nigeria

**M. Babagana**

Department of Animal Health and Production Technology, College of Agriculture, Gujba, Yobe State, Nigeria

**Z. Yakubu**

Department of Agriculture and Community Development, Kampala University, Kampala, Uganda

**Madaki M. J.**

Department of Agricultural Economics and Extension, Federal University Gashua, Yobe State, Nigeria

***Abstract:*** *A study was conducted to assess access to agricultural credit and farmers' productivity among small scale farmers in Gwarzo Local Government Area of Kano state, Nigeria. The study was confined to six villages of the L.G.A. namely Nasarawa, Dankendi, Unguwar Makera, Gangara and Menika. Descriptive Survey design involving mixed methods was adopted in which 285 farmers and officials of Farmers' Association formed the sample size obtained using Slovene's Formular and selected through Purposive, Snowball and Systematic sampling techniques. Three data collection techniques were employed to gather primary data for the study viz; Self-Made Closed Ended Questionnaire, Structured Individual Interview Guide and Focussed Group Discussions. Descriptive Statistics and Pearson Linear Correlation Coefficient were the data analysis methods used to analyse quantitative data while Content Analysis method was also used to analyse qualitative data. Demographic characteristics of the respondents indicated that the majority of the respondents were married male (88.4%) and were youth within the age group of 20-45 years (84.1%). Regarding the respondents' experience in the job, the majority of them were found to have experiences of more than 10 years (76.1%) with very poor educational background. Besides, the respondents were of varied occupational characteristics. Majority of them mainly grow cereal crops and most often engage in mixed cropping mainly growing cereals and leguminous plants. Similarly, 56.8% of them owned big farm sizes of more than 4 hectares and crop farmers who mainly grow cash crops especially cotton, beans and groundnut were found to be the majority (53.7%) while those engaged in subsistence farming were represented by 46.3%. A good number of the respondents (64.5%) stated that their annual income from farming was between 700,000 to more than 1,000,000 Naira. With regards to access to agricultural credit, study findings indicated very low access to agricultural loans by farmers in the area as a result of which many of them could not afford mechanised farming as well as improved seeds, agrochemicals and labour. Consequently, the farmers' productivity was found to be grossly affected leading to their inability to cultivate much of their lands, drop in harvests as well as in income. Thus, considering the increasing costs of farming in the area, it was concluded that, if the fates of these farmers with regards to access to agricultural loans is left unchecked or unattended, many farmlands might not be cultivated in the near future and the level of food production in the area can be greatly hampered. Hence, it was recommended that, governments at all levels should take the issue of peasant farmers' access to agricultural credit an urgent matter of concern and address it in order to achieve the country's mission of self-dependent in food production.*

***Keywords:*** *Agricultural credit, Farmer productivity, Gwarzo, Kano state.*

## I. INTRODUCTION

Globally, agricultural credit has been identified as a major input for development of agricultural sector and in covering financial gap for farmers and to increase their productivity (Harun and Ahmed, 2006). They further indicated that, agricultural credit/loanable funds play a fundamental role in determining access to the needed input that facilitate farming

and other extensive agricultural practices which ultimately transform into Increased output. Increased agricultural output establishes a forward linkage (multiplier effect) in terms of development to other sectors as well as higher income and better quality of life for the rural poor. Platteau (2008) cited in Salami and Arawomi (2013) mentioned that through its agricultural financial incentives, Brazil changed its status from undeveloped to that of Newly Industrialized Country (NIC). Access to credit facilities has been identified as a direct solution to increasing investment in agriculture. In Africa, credit is a crucial factor in agricultural production and in many cases may be a limiting factor in small holder agriculture (Salami and Arawomi 2013).

In Nigeria, the mainstay of the economy before the 1970s was the agricultural sector, Osuntogun, (1997) cited in Udoka, Mbat and Duke (2016). Also according to Osuntogun (1997) cited in Udoka *et al.,* (2016), he further explained that during this period, the structure of the Nigerian economy was largely agrarian in nature with agriculture, solid minerals and other metals forming the bedrock of the economy. Agricultural commodities were also the major export earner for the country. Nigeria was a key exporter of rubber, cotton, groundnut, palm oil, cocoa and palm kernel amounting into three per cent and four per cent in the 50s and 60s respectively of the annual rates of output growth for food and agricultural crops (Osuntogun, 1997 cited in Udoka *et al.,* 2016). Owing to this fact, the sector was later neglected because of several reasons especially with the advent of crude oil among others which substituted agriculture as the major export revenue earner. Although agriculture as at 1960 was the largest economic activity that contributed 50.2 per cent of the GDP, after the emergence of crude oil, the issue of finance was identified as the major factor hindering the agricultural production in Nigeria (Osuntogun 1997cited in Udoka *et al.,* 2016). For this reason, various programmes, polices as well as institutions have been established with the aim of providing easy finance to the sector.

Commercial Banks were at the forefront for this purpose. One of the major inputs identified over the years in the development of the Nigerian agricultural sector has been the agricultural credit (CBN, 2005 cited in Udoka *et al.,* 2016). In view of that, most of the policies promulgated by the federal government of Nigeria on disbursement of agricultural credit were done through commercial banks and the trend continued. Statistics showed that the Nigerian agricultural sector received increased credit from the commercial banks up to about N7 million in 1970 representing 1.99 per cent of the N37.4 million credits (Udoka *et al.,* 2016). The sector continued to receive increased amount of credit up to 1995. However, beginning from 2000, the share of credit to agriculture though increasing in absolute terms started to decline relatively (Udoka *et al.,* 2016). The trend moved in a fluctuation manner whereby in 2014 agricultural credit rose again from N343,696.80 million in 2013 to N478,911.78 million representing 3.7 per cent of commercial banks total credit.

Access to finance is the ability of individual or enterprises to attain financial service, including credit, deposit, payment, insurance and other risk management service (Porteous, 2005) while agricultural credit is defined as the term applied to fund borrowed by individual farm business and others for use in producing, strong, processing and marketing crops and livestock products (International Encyclopaedia of the Social Sciences, 1968). Abe (1981) wrote that, agricultural credit incorporates all loans and advances granted to borrowers to finance and service production activities relating to agriculture fisheries and forestry and also for the processing, marketing, storage and distribution of products resulting from those activities. In this study access to credit is measured by number of loans in a given Period/frequency and average loan amount/volume relative to (CGAP, 2009). Access to credit will be measure by value of the amount borrowed and frequency of the access to credit.

On the other hand the concept of productivity according to Pandit (1965) can be defined as the output per unit of input the art of securing an increase in output from the same input or of getting the same output from a smaller input. He further suggested that, increase in productivity, whether in industry or agriculture e, is generally the result of a more efficient use of some or all the factors of production, viz. land labour and capital. According to shafi (1984), agricultural productivity may be defined as the "ratio of index of local agricultural output to the index of total input used in farm production. Besides, productivity can be viewed as the volume measure of production (output) divided by the volume measures of inputs.

In a study conducted by Awotide, Abdoulay, Alene, and Manyong (2015) on the impact of rural smallholder cassava farmers' access to credit on agricultural productivity, they came to understand that improving the production capacity of agriculture in developing countries like Nigeria through productivity increase is an important policy goal, especially in Nigeria where agriculture represents an important sector in the economy. And their results show that majority of the farmers are still in their productive age, cultivating an average of 2.59 hectare of farm land, most of which is on rented farmland. Credit is obtained mostly for agricultural and non-agricultural purposes.

## II. BACKGROUND TO THE STUDY

World agricultural markets have grown uninterruptedly over recent years. Increasing demand and supply in developing countries has created many agri-business opportunities (FAO). However, this potential has not been realized due to constraints in accessing agricultural finance, especially among small scale farmers. Addressing access to rural finance plays a critical role in achieving many of the internationally agreed Sustainable Development Goals (SDGs). Certainly, the establishment of formal agricultural credit systems in most developing countries over the recent decades was motivated by the belief that widespread shortages of short- and long-term finance constituted a constraint that arrested agricultural growth and development. The absence of what was perceived as affordable formal credit was also blamed for delaying, if not preventing, a timely adoption of new production technologies and the dissemination of non - labor intensive inputs such as fertilizer, thereby slowing down the growth and development of the agricultural sector (Cramb, 1999).

In most LOCs, there is a clear evidence of "urban bias" that is, government policies (price/tax, Investment) favor residents of the urban sector over rural Inhabitants. This bias seems to exist in the allocation of credit as well. Nevertheless, in absolute terms, the value of such credit to the rural sector has been quite considerable (Avishay and Guasch, 1989).

On the part of Africa, a number of studies such as that of Ansari, Gerasim and Mahdavinia (2009); Salami *et al.*, (2010) as cited in Salami & Arawomo, (2013) have documented the problems of the agricultural sector in Africa countries. Aside the problem of poor access to modern technology by the peasant farmers, the major obstacle of agricultural development commonly identified by the above studies among others was low investment or finance. Thus, the effect of farmers not having access to credit was identified as lasting injury to agricultural development. Consequently, general agricultural productivity of many small scale farmers has been greatly hampered by the lack of access to such loans with dire consequences on raw materials production. By implication, this led the low record of agro based industries as well as the closure of the few industries who cannot cope with the unavailability of essential raw material despite huge effort by the government in providing agro credit facilities to farmers.

Currently in Nigeria, a large percentage of farmers especially the rural farmers who contribute immensely to the nation's GDP are poor and the level of poverty has been exacerbated by the decline in agricultural output as well as income inequality sparked by financial constraints. Despite the huge food imports to complement local food production, over 46 % of the population especially rural dwellers (mostly farmers) are chronically undernourished (World Bank Development, 2015). This is a clear indication of food insecurity in the face of an increasing population in Nigeria sparked by low agricultural productivity.

## III. STATEMENT OF THE PROBLEM

In order to mechanise and improve agricultural activities which ultimately enhance food sufficiency, increase farmers' income, provide essential raw materials for the local agro-based industries, the agricultural sector has to be well financed and farmers' financial strengths well boosted through increased access to agricultural credits and loans. Certainly, bulk of farmers' population who contribute significantly to the Gross Domestic Product of Nigeria are peasant farmers majority of whom happen to be poor rural dwellers who deserve increased access to agricultural credits especially from financial institutions established by the federal government specifically to finance agricultural development through agricultural credits grants to farmers.

However, accessibility to agricultural credits by majority of farmers especially the small scale farmers in many rural areas is not encouraging at all. In many agricultural areas of Kano state, such as Kura, Bagwai, Garun Malam and Gwarzo Local Government Areas, small scale farmers narrate their ordeals due to inaccessibility to agricultural credit from government established agricultural financial institutions. Many factors might be responsible for the farmers' inability to access such loans among which are ignorance, lack of proper awareness, poverty, discrimination by the financial institutions etc. Besides, non-compliance to some of the conditions governing the allocation of such loans by the farmers as well as their failure to appropriately repay back accessed loans might also compound the farmers' dilemma.

Therefore, due to financial constraints on the part of the farmers, considerable portions of farm lands were uncultivated every farming season. In addition, these farmers could not afford many of the basic agricultural inputs required for increased productivity such as mechanised farming methods, improved seeds, fertilizers, insecticides, pesticides, labour costs etc. Consequently, farmers' productivity was significantly affected resulting in reduced rate of farm cultivation as well as reduced crop yields after every farming season. Further compounding this problem were occurrences of natural disasters especially floods and locusts and quelae birds' infestation. Furthermore, the ever increasing prices of farm inputs especially fertilizers, insecticides, pesticides and labour costs add to the farmers' decreased productivity as many of them were poor to afford such basic agricultural inputs. According to a World Bank Development Report, (2015), currently in Nigeria, a large percentage of farmers' especially the rural farmers are poor and the level of poverty has been exacerbated by the decline in agricultural output as well as income inequality. Despite the huge food imports, over 46 % of the population especially rural dwellers (mostly farmers) are chronically undernourished. This signifies menace of food insecurity in the face of an increasing population in and low productivity.

Despite concerted efforts made by farmers to access agricultural loans through the establishment of Farmers' Associations following an initiative by the Kano state government of setting up a committee in 2014 through the state Ministry of Agriculture and local governments' Departments of Agriculture to work out modalities on how to boost rural farmers' access to agricultural loans especially from government established agricultural financial institutions across the state, agricultural loans are still a mirage to many peasant farmers.

It is in this light that, this study was conducted in order to study access to agricultural credits by farmers in the area studied, their level of productivity as well as the effects of agricultural loans on the farmers' productivity with the sole aim of coming up with a first information with regards the issue in context for decision makers to come up with effective measures that can be undertaken for increased agricultural productivity in Gwarzo LGA in particular and Kano state in general

## IV. STUDY ARREA

Gwarzo Local Government Area is one of the 44 Local Government Areas in Kano state, Nigeria. It has an area of 393km2 with a population of 183,187 people as at 2006 National Census. Most of its population depend heavily on crop farming for survival. The hot season lasts for 2.1 months, from March 15 to May 17, with an average daily high temperature above 96°F. The hottest day of the year is April 9, with an average high of 99°F and low of 70°F. The cool

season lasts for 1.8 months, from December 1 to January 27, with an average daily high temperature below 87°F. The coldest day of the year is January 2, with an average low of 53°F and high of 84°F (www.climatedata.org).

Gwarzo experiences extreme seasonal variation in monthly rainfall. The rainy period of the year lasts for 6.4 months, from April 11 to October 25, with a sliding 31-day rainfall of at least 0.5 inches. The most rain falls during the 31 days centered around August 17, with an average total accumulation of 7.5 inches. The rainless period of the year lasts for 5.6 months, from October 25 to April 11. The least rain falls around January 1, with an average total accumulation of 0.0 inches.

The topography within 2 miles of Gwarzo contains only modest variations in elevation, with a maximum elevation change of 148 feet and an average elevation above sea level of 1,906 feet. Within 10 miles also contains only modest variations in elevation (453 feet). Within 50 miles contains only modest variations in elevation (1,083 feet). The area within 2 miles of Gwarzo is covered by cropland (86%), within 10 miles by cropland (66%) and grassland (14%), and within 50 miles by cropland (72%) and grassland (11%).

The average hourly wind speed in Gwarzo experiences significant seasonal variation over the course of the year. The windier part of the year lasts for 7.6 months, from November 18 to July 4, with average wind speeds of more than 6.6 miles per hour. The windiest day of the year is January 22, with an average hourly wind speed of 8.7 miles per hour. The calmer time of year lasts for 4.4 months, from July 4 to November 18. The calmest day of the year is September 11, with an average hourly wind speed of 4.4 miles per hour.

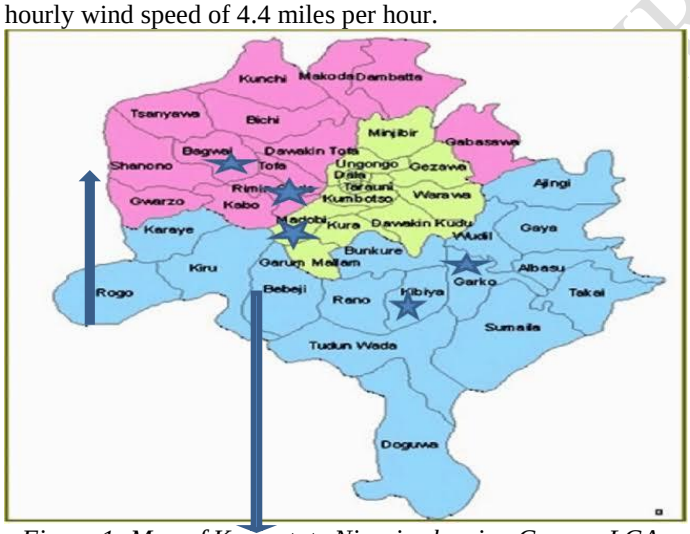


*Figure 1: Map of Kano state Nigeria showing Gwarzo LGA*

## V. MATERIALS AND METHODS

The study was conducted between the months of January – March 2019 in six villages of Gwarzo L.G.A. of Kano state, Nigeria to assess farmers' accessibility to agricultural credits, determine the level of productivity among the farmers as well as determine the effect of agricultural credits on farmers productivity. The research was confined to six villages of the L.G.A. namely Nasarawa, Dankendi, Unguwar Makera, Gangara and Menika. The rationale behind the selection of these areas was because more than 88% of the population were crop farmers. Descriptive Survey design involving mixed methods was adopted in which 285 farmers and officials of Farmers' Association formed the sample size obtained using Slovene's Formular and selected through Purposive, Snowball and Systematic sampling techniques. Three data collection techniques were employed to gather primary data for the study viz; Self-Made Closed Ended Questionnaire, Structured Individual Interview Guide and Focussed Group Discussions. All data collection processes were self-administered. Descriptive Statistics and Pearson Linear Correlation Coefficient were the data analysis methods used to analyse quantitative data while Content Analysis method was also used to analyse qualitative data.

## VI. ANALYSIS OF RESULTS AND DISCUSSIONS

| Variables | Frequency | Percentage |
|---|---|---|
| **SEX** | | |
| Male | 226 | 79.3 |
| Female | 59 | 20.7 |
| **Age** | | |
| 20-25 yrs | 34 | 12.0 |
| 26-30 yrs | 45 | 15.8 |
| 31-35 yrs | 75 | 26.3 |
| 36-40 yrs | 64 | 22.5 |
| 41-45 yrs | 21 | 7.4 |
| 46-50 yrs | 34 | 12.0 |
| Above 50 yrs | 11 | 3.9 |
| **Tribe** | | |
| Fulani | 93 | 32.6 |
| Hausa | 165 | 57.9 |
| Others | 27 | |
| **Religion** | | |
| Islam | 260 | 91.2 |
| Christianity | 0 | 0 |
| Others | 25 | 8.8 |
| **Marital status** | | |
| Married | 199 | 70.0 |
| Single | 65 | 22.8 |
| Divorced | 21 | |
| **Level of education** | | |
| None | 145 | 50.9 |
| Primary certificate | 55 | 19.3 |
| Secondary certificate | 44 | 15.4 |
| Diploma/NCE | 20 | 7.0 |
| Others | 21 | 7.4 |
| **House hold size** | | |
| 1-5 members | 37 | 13.0 |
| 6-10 members | 123 | 43.2 |
| 11-15 members | 65 | 22.8 |
| 16-20 members | 36 | 12.6 |
| Above 20 members | 24 | 8.4 |
| **Type of farm ownership** | | |
| The father | 268 | 94.0 |

| | | |
|---|---|---|
| The mother | 0 | 0 |
| The family | 17 | 6.0 |
| **Years of residence in the area** | | |
| 1-5 yrs | 23 | 8.1 |
| 6-10 yrs | 12 | 4.2 |
| 11-15 yrs | 78 | 27.4 |
| 16-20 yrs | 56 | 19.7 |
| Above 20 yrs | 116 | 40.7 |
| Nomadic | 0 | 0 |

*Table 1: Demographic characteristics of the respondents*

Demographic and occupational characteristics of the respondents presented in the table above indicates that the majority of the respondents were male (88.4%) while females were represented by 11.2% while with regards to ownership, fathers were the most majority (46.0%) followed by the family (29.8%), farmers (18.6%) while the least represented were heads of the family (5.6%). With respect to the number of owners, single owners were found to be the majority (66.0%) followed by 2-4 (15.8%), 5-8 represented by 13.3% and owners above 9 constituted 4.9%. Gender wise, the majority of the respondents were youth within the age group of 30-40 years (43.5%) while those within the age group of 41-60 were represented by 30.5%. Regarding the respondents' experience in the job, the majority of them were found to have experiences of more than 10 years (76.1%) and only 23.9% stated that they have only 1 year experience in the job.

| **Variables** | **Frequency** | **Percentage** |
|---|---|---|
| **Crop Grown** | | |
| Corn | 12 | 4.2 |
| Millet | 23 | 8.1 |
| Cotton | 23 | 8.1 |
| Maize | 24 | 8.4 |
| Beans | 22 | 7.7 |
| Groundnut | 0 | 0 |
| Mixed | 105 | 51.7 |
| Vegetables and fruits | 76 | 26.7 |
| **Farm Size** | | |
| < I Hectare | 34 | 12.0 |
| 1-2 Hectares | 33 | 11.6 |
| 3-4 Hectares | 56 | 19.6 |
| >4 Hectares | 162 | 56.8 |
| **Type of Farming** | | |
| Subsistence Farming | 193 | 67.7 |
| Commercial Farming | 92 | 32.3 |
| **Alternative occupation** | | |
| None | 106 | 37.2 |
| One | 90 | 31.6 |
| Two | 89 | 31.2 |
| **Annual Average Income (~~N~~)** | | |
| <250,000 | | |
| 250,000-500,000 | | |
| 500,00-800,000 | | |
| 800,000-1,000,000 | | |
| >1000,000 | | |

*Table 2: Occupational characteristics of the respondents*

From the above table, it can be seen that the respondents were of varied occupational characteristics. Depending on the nature of the soil and wheather of the area studied, majority of the crop farmers mainly grow cereal crops where by 4.2% of them grow corn, 8.1% grow millet, 8.1% grow cotton, 8.4% grow maize while another 7.7% claim to grow beans. It should be noted that, cereal crops such as maize and sorghum are the stable food crops in the area. However, the majority of the respondents (51.7%) most often engage in mixed cropping mainly growing cereals and leguminous plants such as beans and groundnuts together. In this case, the cereal crops are stored for the family use while the leguminous plants such as beans and groundnuts are sold off. Similarly, the majority of them (56.8%) owned big farm sizes of more than 4 hectares while those owning 3-4 hectares of farmlands constituted 19.6%. Small farmlands of less than 1 hectare were owned by 12.0% of the respondents and those possessing 2-3 hectares of land were represented by 11.6% only. Crop farmers who mainly grow crops especially cotton, beans and groundnut for commercial purposes were found to be the majority (53.7%) while those engaged in subsistence farming who grow crops for their family consumption were as well represented by 46.3%. With regards to their level of income, a good number of the respondents (64.5%) stated that their annual income from farming was between 700,000 to more than 1,000,000 Naira. This group of farmers were mainly those engaged in commercial farming who mainly grow cotton, beans, groundnuts etc. However, despite the encouraging income they get from farming, majority of the farmers stated that, due to reasons beyond their control, they faced financial constraints at each farming season.

## VII. ACCESS TO AGRICULTURAL CREDIT BY THE FARMERS

Agricultural credit has been described as a process of obtaining control over the use of money and services in the present in exchange for a promise to repay at a future date (Adegeye and Dittoh, 1985). Agricultural credit enhances productivity and promotes standard of living by breaking vicious cycle of poverty of small scale farmers. Ogunofowora, Essang and Olayide (1972), reported that credit is not only needed for farming purposes but also for family and consumption expenses especially during the off season period. Globally, agricultural credit has been identified as a major input for development of agricultural sector and in covering financial gap for farmers and to increase their productivity (Harun and Ahmed, 2006). They further indicated that, agricultural credit/loanable funds play a fundamental role in determining access to the needed input that facilitate farming and other extensive agricultural practices which ultimately transform into Increased output. Increased agricultural output establishes a forward linkage (multiplier effect) in terms of development to other sectors as well as higher income and better quality of life for the rural poor.

On whether the farmers have ever accessed any type of agricultural loan, data obtained from the respondents showed that only 39.9% declared yes while 69.1% of them made it known that they had never accessed such loans. Besides, another 50.9% of the farmers stated that it was not easy for them to access agricultural credit despite the fact that they did apply for it every year. This finding agrees with those made by other scholars. For instance, Okojie *et al.,* (2010) reported that the poor have limited access to financial services, and that the main source of finance for the majority of rural women in Edo state, Nigeria is their contribution to the savings/market associations. This is further corroborated by EFInA (2008) which reports that 24% of the adult population in Nigeria has access to informal financial services while 53%t are financially excluded and that another 24% of the adult population in Nigeria source their credit from relatives, friends, traders and money lenders. In addition, the farmers also stressed that the protocols involved in accessing such credits as well as other terms and conditions were very strict. According to them, there were a lot of administrative bottle necks involved in the process and the fact that the majority of them were not well educated further compounded the whole issue. Only 36.9% of the respondents stated that it was easy for them to access the credits.

In many instances, acquisition of agricultural credits has proved to be difficult due to credit terms that are perceived to be unfavourable especially by small scale farmers. For instance, in Uganda, Kakuru (2008) reported that collateral is up to a tune of 150% of the loan, the repayment period is as short as 24 months, and interest rates range from 23% to 30% per month. Besides, in assessing the credit worthiness of borrowers, banks apply standard and stringent requirements to determine the performance of the business and the ability to repay the loans. Suppliers of credit may also choose to offer high interest rates and credit rationing that would leave significant numbers of potential borrowers without access to credit (Stiglitz and Weiss, 1981).

Furthermore, according to Okojie *et al.,* (2010), there are so many other factors limiting the access to credit among small scale farmers, the lack of bank accounts, collateral, and information regarding the procedure for accessing credits from banks limit rural women's access to credit from formal institutions. Also, Adejobi and Atobatele (2008) suggested that loan default could limit access to credit, while Agnet (2004) opined that the complex mechanism of commercial banking is least understood by the small-scale farmers, and thus, limits their access. In addition to these factors, Philip *et al* (2009) stated that high interest rate and the short-term nature of loans with fixed repayment periods do not suit annual cropping and thus constitute a hindrance to credit access.

In addition to the hindrances to agricultural loans mentioned above by the farmers, other factors such as favouritism, ignorance, corruption and sectionalism also hinder many small scale farmers from accessing agricultural credits despite its importance and relevance in present day farming activities. The importance of such loans to rural farmers has been stressed by many scholars. Salami and Arawomi (2013) stressed that access to credit facilities has been identified as a direct solution to increasing investment in agriculture. In Africa credit is a crucial factor in agricultural production and in many cases may be a limiting factor in small holder agriculture. Certainly, the importance of rural agricultural financing in the development of agriculture especially in the developing countries cannot be over emphasised. Takwa *et al.,* (2018) argued that, access to credit enables poor rural farmers to venture into new areas of economic activities, broaden their sources of capital and manage shocks and stress that are bound to occur. He further stated the poor farming household majority of who are impoverished have to develop the habit of saving, obtaining loans for production and transferring cash. Similarly, according to Oyateye (1980), position is no different as he states that the persistent case of low productivity resulting in low income and saving capacity could only be offset when the poor rural farmer is guaranteed to a credit facility. He added that credit improves the capacity of the smallholder farmer to have access to labour. Poor income households could lift above the poverty line provided they could reliably have access to a number of micro-finance activities in order to strengthen their asset building capacity (Claessens, 2006 and Bamford, 1997).

However, despite the numerous problems faced by the farmers in accessing agricultural loans from formal financial institutions, they still believed that their productivity could be better with such loans although they did also complain of higher interest rates attached to such loan facilities. For clarity, access to credit is defined as an absence of price and non-price barriers in the financial services (IBRD/World Bank, 2008). There are various ways through which farmers can acquire agricultural credit. Noteworthy also is that, the development of the agricultural sector in Nigeria is more or less heavily dependent on the performance of peasant farmers hence; access to agricultural credits by this category of farmers is very essential. According to Zeller (1997), access to credit is also considered to be an important tool for smoothing consumption and promoting production especially for poor households. This means that, access to credit can significantly increase the ability of households with no or few savings to meet their financial needs for agricultural inputs; especially those that are highly necessary for weed, pest, and disease control and productive investments. Furthermore, easy availability and access to credit enables farmers and entrepreneurs to diversify by undertaking new investment.

Similarly, it is inarguable to state that access to Credit and Agricultural Productivity forms the backbone of any meaningful economic development in any nation especially developing countries. This could be the reason why credit facilities should be made available and accessible to the rural areas in order to boost productivity. In an attempt to explain the importance of access to credit by the poor farmers, Akwai-Sakyi (2015) said "access to credit by the poor farmer enable them to obtain new machinery, improved seed fertilizers and other necessary inputs needed to expand the scale of production. Furthermore, Yu (2008) also noted that "beyond the ability to procure farm equipment, agricultural inputs, modern technologies and irrigation systems, smallholder farmers are able to obtain the needed storage facilities. On the other hand, Miller and Ladman (1983) reported that, access to credit goes beyond increase in productivity and income, but

affords rural households the opportunity to improve their social well-being especially in the area of health and education.

Based on the findings made by this study, the dilemma of rural farmers with regards to access to agricultural was further worsened by the financial institutions themselves by discriminating against rural farmers. Reports from other scholars affirmed that. According to Nweke and Onyia, (2001) cited in Adegbite D. A. (2009), financial lending Institutions in Nigeria often shy away from giving loans to farmers because of the high cost of administering such loans and the perceived high default rates among farmers. Surely, small scale farmers who were mostly peasant farmers living in villages were the ones mostly affected by this impression of financial institutions. Credit allows farmers to satisfy the cash needs induced by the production cycle which characterize agriculture; land preparation, planting, cultivation, and harvesting are typically done over a period of several months in which very little cash revenue is earned, while expenditure on materials, purchased inputs, and consumption need to be made in cash (Feder *et al.*, 1990).

Obviously, discrimination of small scale or poor farmers by financial institutions with regards to accessibility to agricultural credits in Nigeria is a serious issue of concern especially for the fact that these categories of farmers constitute a considerable population of farmers in the country. Oladeepo (2003) lamented that, rural borrowers in particular are not an attractive proposition for formal financial institutes because they cannot meet the minimum requirements and are perceived as high risk borrowers. In a review carried out by Badiru (2010), many other reasons were provided for the lack of access to credit by the farmers from the formal sources. For instance, Agnet (2004) opined that the complex mechanism of commercial banking is least understood by small-scale farmers and this limits their access. Financially, the Federal Government of Nigeria (FGN) established credit schemes such as the Agricultural Credit Guarantee Scheme (ACGS) in 1977 and the Agricultural Credit Support Scheme (ACSS) to ensure farmers' access to agricultural credit. The ACGS fund was set up with the sole purpose of providing a guarantee in respect of loans granted by any bank for agricultural purposes (Central Bank of Nigeria, 1990). Nwosu *et al.*, (2010) noted that the ACGSF was formed solely with the objective of encouraging financial institutions to lend funds to those engaged in agricultural production as well as agro processing activities with the aim of enhancing export capacity of the nation as well as for local consumption. However, this is noted to be exclusively in favour of large-scale farming (Somayina, 1981cited in Awotide, 2015) as smallholder farmers seldom obtain credit from formal credit sources.

Another reason for the failure of most credit institutions in Nigeria is that they have complicated, cumbersome and time consuming procedure which results in delay in approval and in loans not being made available when required, illiteracy on the part of the farmers, high administrative charges, period for advance. Security of advance discourages peasant farmers from commercial bank facility. Several factors militate against efficient procurement and utilization of credits from formal sources of credit. Such factors include the inability of the farmers to provide acceptable collateral demanded by the lending institutions, delay in the disbursement of credit to synchronized with the different farming operations and lack of well-planned clear debt repayment scheduled.

Agricultural credit access has particular salience in the context of agricultural and rural development in Nigeria. Some 70% approximately of the population live in the rural areas with their main source of livelihood being agriculture (Kohansal and Mansoori, 2009). Recent studies showed that the growth rate of investment in the agricultural sector is less than that of the other economic sector. Therefore, financing agriculture is one of the most important factors to develop rural areas in developing countries.

It is clear that, prevalence of poverty in most agricultural rural areas would not only lead to decreased agricultural productivity on the part of farmers but could also trigger massive rural urban migration the consequences of which on agriculture could not be estimated. According to Rahji, (2010), credit accessibility is important for improvement of quality and quantity of farm products, so that it can increase farmer's income and reduce rural migration. Credit constraints to farm households thus impose high cost on the society. This is in terms of rural unemployment, rural poverty, and distortion of production and liquidation of assets. Governments in both developed and developing countries attempt to overcome these problems by subsidizing credit, setting up Agricultural Credit Guarantee Fund Schemes e.g. ACGFS in Nigeria, 1977, specialized Agricultural Credit Bank e. g NACB, 1973 now BOA, 2010 and stimulating institutional innovations in the financial system e.g. People's Bank, Community Bank, Rural Banking Schemes etc.

Finally, it is not an over exaggeration to say that the contribution of peasant farmers to the growth of the nation's Gross Domestic Product (GDP) cannot be over emphasised. Thus, it is very clear that with the provision of sufficient agricultural loans to farmers especially small scale farmers, their productivity would be boosted which could eventually result in increased farm yields. This is synonymous to increase in the country's GDP. Thus, denial of access to loans to the peasant farmers can in other way round affect GDP of the nation. In addition to that, access to rural credit has the capacity to raise the level of the national income distribution of the country (Miller, 1977). This assertion is informed by the perspective that bulk of the people in the country are engaged in the area of agriculture and therefore, if farmers are able to secure such financial support then it may go a long way to improve their economic contributions to the country. IFAD (2007) contends that during off farming seasons or after poor harvest, access to credit could raise the income status of the low income rural households.

## VIII. DETERMINING AGRICULTURAL PRODUCTIVITY OF THE FARMERS

By definition, agricultural productivity is referred to as the output produced by a given level of input(s) in the agricultural sector of a given economy (Fulginiti and Perrin 1998). More specifically, it can also be defined as "the ratio of the value of total farm outputs to the value of total inputs used. Results obtained on farmers' productivity in the studied area

were not so encouraging. The majority of the respondents (66.7%) were of the view that with agricultural credit they could be able to cultivate the whole of their farm lands and made very encouraging harvests. As it is the tradition in this area as well as in many rural African settlements, majority of the farmers (74.7%) stated that they use local manure in their farms. Often, such local manures were obtained from animal dungs however; another 72.3% also claimed that they do also make use of manufactured fertilizers on their farms hence; for enhanced crop yields, the farmers stated that they use insecticides and pesticides on their farms in order to eradicate insects and crop pests capable of destroying crops (75.8%). In addition, 55.1% of the farmers responded that the loan facilities enabled them to cultivate their farmlands more than once every years meaning; they also engaged in irrigation during dry seasons when they grow vegetables such as tomatoes. Another 56.5% also stated that loan facilities made it possible for them to employ mechanised farming and purchase insecticides, pesticides and fertilizer for better productivity. This agrees with the statement made by the International Food Policy Research Institute in its Nigeria Strategy Support Programme document which stated that the average smallholder farmer in Nigeria does not have access to sufficient fertilizer for one hectare. Yields require a combination of education through extension services, access to appropriate and timely inputs as well as access to finance to purchase inputs (Opara, 2011).

In addition, another 67.7% of the respondents did also state that they used local farming methods in their farming activities because they could not afford mechanised farming which they described as very much labour intensive. They attributed this to severe financial constraints made worst by lack of any financial assistance from the government or loan facilities as well as unstable prices of farm produce. Obviously, the issue of labour intensity in contemporary farming activities in Nigeria deserved to be seriously addressed for increased productivity especially among small scale farmers. According to Olukunle (2013), availability of labour affects the use of farmland in the traditional farming system. Since agriculture in Nigeria is virtually unmechanised, human labour becomes vital in all production systems, accounting for about 90 percent of all farm operations. Under semi-mechanized systems, including animal traction use, human labour use is as high as 70 per cent of all operations (NISER, 2001 cited in Olukunle, 2013). Although farming is largely labour-intensive, farmers, generally often experience seasonal labour shortages. The supply of labour is affected by unending migration of able-bodied youths from the rural to urban areas creating labour shortages especially at peak periods when labour is required for land preparation, weeding and harvesting. Hired labour shortages have driven up the cost of labour making such labour unprofitable to the average smallholder. Exacerbating the migration problem has been the poor agricultural productivity of smallholder farmers and the perception among young adults in farm families that the farm cannot support them and their livelihood (Chemonics, 2003 cited in Olukunle, S2013).

Similarly, most of African agriculture is traditional and characterized by labour intensive production and excess demand for labour often occurs during periods of land preparation, weeding and harvesting. Agricultural labour consists of two categories, namely hired labour and family labour. According to Mensah (1986) as stated by Antwi (1997), the causes of labour shortages in less developed countries is largely due to the migration of labour from rural to urban areas. Besides, literature reviewed showed that agricultural productivity increases more in developed countries compared to less developed countries. This could be due to high investment in research and development, labour, land, capital and improvement in the use of inputs such as fertilizer, machinery and others.

Meanwhile, reduction in the sizes of farm lands cultivated over years was also another problem facing many of the crop farmers. In this line, 67.4% of the farmers made it known that, due to insufficient funds they were only able to cultivate some parts of their farm lands while another 65.6% claimed that they experienced encouraging harvestations with the agricultural credits. According to the farmers, these factors along with others cumulatively affect their productivity seriously. Thus, for the fact that majority of the farmers in the study location lamented that low capital incapacitated them from cultivating considerable portions of their farms could negatively affect agricultural productivity in the area studied. Thus, this clearly brings out the intimate relationship between agricultural productivity and cultivable farm sizes. Many studies of agricultural productivity in developing countries support the view that there is an inverse relationship between productivity and farm size. This may be a result of market imperfections, such as missing rural labour markets. The recent literature suggests that land has a major influence on production since its estimated coefficient is positive in most studies; for instance, in a study on relative technical efficiency of cotton farmers in Manicaland Province of Zimbabwe, Mushunje *et al.*, (2003) found positive coefficients in land significant at all levels. Fufa and Hassan (2003) also found that the estimated coefficient of land is positive and significant. This shows that the positive influence of land on agricultural production. Certainly, decrease in peasant farmers' productivity is a catalyst for poor agricultural development that could have devastating economic consequences not only on the farmers alone but on the nation at large because aagricultural development is considered to hold the key to economic development for most developing countries including Nigeria. However, the good news was that majority of the farmers (64.2%) stated that they did not face any difficulties in selling their farm produce after every farming season although the prices tend to fluctuate most of the times and poor road networks pose serious threats as well.

In order to complement the above findings on farmers' productivity, responses were collected from five crop farmers for comparison of the level of their productivity in 2010, 2014 and 2018. Three factors were considered for the comparison viz; money spent, size of farm cultivated and number of bags harvested. The table below presents the results of the comparison:

| Farmers | Years | Capital | Farm size | Crop yield |
|---|---|---|---|---|
| Farmer 1 | 2010 | 540,000. | 7 Hectares | 110 bags |
| | 2014 | 575,000. | 7 Hectares | 102 bags |
| | 2018 | 620,000. | 7 Hectares | 118 bags |

| | | | | |
|---|---|---|---|---|
| Farmer 2 | 2010 | 490,000. | 5 Hectares | 84 bags |
| | 2014 | 410,000. | 3 Hectares | 69 bags |
| | 2018 | 455,000. | 3 Hectares | 62 bags |
| Farmer 3 | 2010 | 730,000. | 7.5 Hectares | 132 bags |
| | 2014 | 685,000. | 7.5 Hectares | 125 bags |
| | 2018 | 845,000. | 7.5 Hectares | 172 bags |
| Farmer 4 | 2010 | 340,000. | 5 Hectares | 87 bags |
| | 2014 | 415,000. | 4 Hectares | 70 bags |
| | 2018 | 440,000. | 3 Hectares | 60 bags |
| Farmer 5 | 2010 | 515,000. | 5 Hectares | 90 bags |
| | 2014 | 400,000. | 3.5 Hectares | 72 bags |
| | 2018 | 600,000 | 5 Hectares | 89 bags |

*Table 4: Comparison of farmers' productivity across 3 years*

Data from the table above showed either increase in total expenses incurred across the three year period or decrease in sizes of farm lands cultivated in the three years with no significant increase in the number of bags harvested. Hence, the farmers complained of increase in the amount of money they spent each farming year with decrease in sizes of farm land cultivated as well as decrease in number of bags of crops harvested. Thus, it can be concluded that, productivity of the five farmers did not show any tangible increase in spite the increases in the amount of money spent. Many factors were cited to be the reasons for the farmers' decreasing productivity over the 3 year period. The leading factor given was poverty followed by hiking prices of insecticides and pesticides, scarcity of fertilizer, lack of access to mechanised farming methods, increase in the cost of labour as well as other farming tools. Besides, low level of technological advancement especially in the field of agriculture could be a hindrance to increased productivity among small scale farmers as witnessed in the studied area. According to Cheng *et al.*, (2001), the low level of agricultural productivity among farmers in developing countries especially small scale farmers might be attributed to the low level of technological advancement in these nations which could have been caused by negligible investment in agriculture, research, poor governance and corruption. Unlike in many developed nations where governments invest heavily in agriculture and research. For instance, in Asia, Chang *et al.*, (2001) determined how to promote agricultural productivity growth to achieve sustainable food security. The study looked at the role of investment, both in physical and human capital in maintaining and increasing agricultural productivity. By using TFP and partial factor productivity functions they found that, the only way to promote agricultural productivity was through improving labour productivity. Due to the improvement in labour productivity, the agricultural output growth for these countries has remained positive from the period of 1961 to 1994.

There exists quite vast literature on the trends of agricultural productivity, factors affecting agricultural productivity and ways to improve agricultural productivity in both developed and developing countries. Agricultural productivity of a given farm household is determined on many factors in the literature. Ellis (1993) argued that small farms in terms of land size are more productive than large farms and his recommendation that agricultural development strategy based on the promotion of small rather than large farms can serve both growth and income distribution objectives. Empirical studies have also arrived on the same conclusion (Bhalla, 1979 cited in Ramesh, Lakshmi and Aruna, 2011). But still there are also counter arguments which says large farms perform better than the small one. However, with regards to the outcome of this study, whatever the case may be, farmers' perceptions of agricultural productivity in the area under study seemed not to be largely dictated by farm size but by number of bags of crops harvested in relation to the total amount of money spent.

Although aagriculture is the major occupation in Nigeria, the efforts of millions of rural farmers to contribute to the nation's GDP through food production are handicapped by numerous factors. It has been reported by many scholars that aagriculture is the major occupation in Nigeria employing almost two-thirds of the active work force and contributing 40 percent of the national GDP however, the dream of the country to feed itself might not be achievable due to numerous reasons responsible for poor agricultural production in the country which further fuels the issue of food insecurity. For instance Matemilola and Elegbede (2017) stated that, in the rural Nigeria, inadequate post-harvest technology and poor distribution of food have combined with poverty to form an almost insurmountable challenge and especially with unpredictable variations in weather conditions. Besides, the International Fund for Agricultural Development (2012), rates Nigeria as the number one producer of yam, cassava and cowpea in the world; yet Nigeria remains a food insecure nation and relies heavily on importation of grains, livestock products, and including fish.

As previously opined by Omorogiuwa, *et al.*, (2014) cited in Matemilola and Elegbede, (2017), Nigeria has about 75 percent of its land suitable for agriculture, but only 40 percent is actually cultivated. Majority of the rural populace engage on subsistent farming on small plots of land to feed their households and relying on seasonal rainfall. Lack of access to necessary infrastructures such as roads has further worsened the rural poverty situation by disconnecting the rural farmers from required inputs and the markets (Matemilola and Elegbede, 2017). Furthermore, agriculture is mostly practiced by the farmers who cannot access facilities required for optimum food production. According to the World Bank's statistics, 90% of agricultural production in Nigeria is the output of inefficient small scale farmers. As a result, such farmers only manage to produce sufficient food to sustain their immediate families (Matemilola and Elegbede, 2017). According to Odoemenem and Obinne (2010), there is very limited access to modern improved technologies and their general circumstance does not always merit tangible investments in capital, inputs and labour. Agricultural technology for the smallholder farmer must help minimize the drudgery or irksomeness of farm chores. It should be labour-saving, labour-enhancing and labour-enlarging.

Furthermore, other reasons given for poor agricultural development in Nigeria by Olukunle (2013) include marketing problems, poor storage and processing, infrastructural inadequacies, unstable input and output prices, technical constraints as well as inadequacies in past policies and programmes. It is true to say that rural farmers who constitute bulk of the country's farming population still employ very primitive storage and processing techniques as a result of

which crops worth millions of Naira could be lost every year while poor road conditions in majority of the rural areas make marketing of farm produce very difficult resulting in decreased incomes. In addition, poor implementation of agricultural policies and corruption coupled with unpredictable prices of farming inputs could also be considered to be hampering the general development of agriculture in many parts of the country.

Possibly, farmers in developing nations could not attain 100% productivity in agriculture due to lack of modernised farming tools unlike their counterparts in developed countries where modernised agricultural technologies were very much available and affordable by farmers (Chang *et al.*, 2010). Cheng *et al.*, (2010) still reported that, unlike in other developing nations, the labour productivity in China increased by 4.13% whilst that of the United States was 7.16% during 1987-1994. In general, land productivity is higher in less developed countries as compared to developed countries due to land reform. It must be noted that, growth in agricultural productivity depends primarily on technological change, improved input use efficiency and conservation of natural resources. These in turn, depend crucially upon investments in agricultural research, extension and human capital. In recent years, many attempts have been made to agricultural growth in order to reduce poverty through direct effects on farm productivity, incomes, and employment. It may also generate indirect impacts on the welfare of rural households through the growth linkage with the non-farm sector as well as through its impacts on food prices (Popli, 2010).

Furthermore, the International Fund for Agricultural Development (IFAD) (2009), observed that a number of negative factors militate against high productivity in small scale farming in Nigeria include: a large proportion of small-scale agriculture is uncompetitive, and is neither profit-/business- oriented nor sustainable; there is a vicious circle of low productivity and income, total shortages of cash, and limited investments or input availability/use; and the lack of market access and of credible processing and trading outlets also hinders improvements in or expansion of production. For example, an effective distribution system is needed to give smallholders access to fertilizer at affordable prices and help them remain competitive. The existing seed and planting material industries are underdeveloped, and supplies are often of substandard quality. Thus, if left unchecked, these factors that limit the productivity of many small scale farmers in Nigeria could make the Federal Government's dream to put the country on a concrete platform to feed itself could be very difficult to achieve and could just be a mirage. Similarly, Wiebe *et al.*, (2001) in their study on Agricultural policy, Investment and Productivity in sub-Sahara Africa, argued that an expected increase in output from improved infrastructure and price policies were difficult to quantify, but such improvements were probably prerequisites to make possible the increases in productivity from the use of conventional inputs and research. The study concluded that education of rural labour force and agricultural research is needed to improve the future prospects for productivity growth in sub-Sahara Africa.

Finally, increased productivity in agriculture has a number of advantages. Firstly, it increases the flow of resources from one sector to the other, thereby enhancing economic growth. Secondly, a higher level of agricultural productivity results in lower food prices that increase consumers' welfare. Thirdly, productivity growth improves the competitive position of a country's agricultural sector (Haji, 2008). When carefully manipulated, all these could lead to a general development of the agricultural sector especially for the fact that increased agricultural productivity could lead to decrease in the rate of poverty among small scale farmers. Many other studies have confirmed that. Agricultural growth may reduce poverty through direct effects on farm productivity, incomes, and employment. It may also generate indirect impacts on the welfare of rural households through the growth linkage with the non-farm sector as well as through its impacts on food prices (Popli, 2010). There have been arguments that the poor typically spend a high share of their income on staple food; therefore, they benefit from a decline in the price of staple food induced by agricultural productivity improvement.

## IX. CONCLUSION

Based on the findings made, it can be concluded, considering the socioeconomic status of the majority of the farmers in Gwarzo as well as the numerous challenges facing them, the issue of access to agricultural credit among small scale farmers should be given much priority in order to enhance the ever dwindling farmers productivity in the studied location as well as in other similar places. This is necessary for the fact that, bulk of the population of farmers who make enormous contribution to the nation's GDP were poor and uneducated peasant farmers mostly living in rural areas. More often than not, due to their socioeconomic status, this category of farmers find it very difficult to access loans from financial institutions to enable them afford the rising cost of farming inputs and labour as a result of which their productivity is seriously affected. Obviously, this can mean doom to agricultural development in the country and also fuel the crisis of food crises in many parts of the nation especially for the fact that, Kano state with its large population neighbours some of the states bedevilled by the Boko Haram insurgency that are currently embattling food crises sparked by the 7 year long crises. Besides, Kano state happened to be a safe haven for many of the internally displaced people from the Boko Haram stricken areas of Borno, Yobe and Adamawa states of Nigeria. In addition, food insecurity in the northern region could affect many areas in the southern region as well due to the fact that the south heavily depends to some extent on the northern states for food supply especially rice, maize, sorghum, corn, beans etc. This is because, geographically, the northern region has that comparative advantage to produce cereal crops more than many of the states in the south.

## X. RECOMMENDATIONS

From the findings made by this study as well as the conclusion drawn, the following recommendations are hereby

proffered for the betterment of food production in the study location as well as other similar areas:

- ✓ More agricultural financial institution should be established to complement the ones currently in operation with the aim of boosting access to agricultural credits.
- ✓ Establish agricultural financial institutions in remote rural areas in order to make them close to rural farmers.
- ✓ Awareness raising campaigns on agricultural credits should be organised for the majority uneducated rural farmers with the aim of making them more conversant with issues relating to agricultural loans
- ✓ Terms and conditions as well as other requirements for acquisition of agricultural credits should be softened so that small scale farmers can afford.
- ✓ Interests rates involved in such loans should be minimised to the most bearable amount such that poor farmers can afford.
- ✓ Basic agricultural inputs such as fertilizers, improved seeds etc. should be made readily available at affordable prices to rural farmers for improved food production.
- ✓ The idea of agricultural extension should be strengthened by governments at all levels by recruiting more agricultural extension officers who give expert advises to farmers.
- ✓ Professional training on modern farming techniques should be given to rural farmers to boost their productivity.
- ✓ The current land tenure system should be relaxed so that accessibility to land could be made easier.
- ✓ Poor road conditions especially those linking agricultural rural areas with other cities should be mended in order to ease transportation of farm produce from rural areas to urban markets.
- ✓ Government should be involved in the marketing of farm produce belonging to small scale farmers in order to encourage them produce more.
- ✓ In times of natural disasters such as flooding, rural farmers should be well compensated by the government with the aim of instilling hope in them not to relent in their efforts.

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