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Impact of Road Transportation on Agricultural Development in Yakurr Local Government Area, Cross River State, Nigeria

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ABSTRACT
The study focused on the impact of road transportation on agricultural development in Yakurr Local Government Area (LGA), Cross River State, Nigeria. Data were collected through personal observations, oral interviews, and questionnaire administration. A total of 400 copies of questionnaires were administered and 380 copies were returned and used for analysis. The study employed a descriptive statistical approach. The study noted that the potentials of agriculture are not fully utilized in the study area due to the challenges of road transportation in the communities. These challenges are due to setbacks in government policies on transportation and agricultural development, lack of partnership and community-based organizations involvement in the maintenance of roads among others. These challenges result in high cost of transporting farm produce, inaccessibility to marketplaces, inaccessibility to farm inputs and general constraint of extension officers' operations. All these have negative effects on agricultural development. Being that agriculture plays a very significant role in land development, it was suggested that strategies such as the public private partnership and community participation in road transportation development and management be adopted.

KEYWORDS: Agricultural Development, Road Infrastructure, Rural Development, Road Transportation

Introduction

Transportation has long been recognized as a strategic factor in agricultural development, productivity, rural development and societal change dynamics (Johnson and Mellor 2008). Agricultural production is very important to the economy of developing nations as a whole and Nigeria in particular. It is the major occupation of majority of the inhabitants of the people of this country. Even though Nigeria is basically an agrarian nation and most of the goods to be transported are mostly agricultural products, which according to Igben (2007), are by nature often bulky, low priced and highly perishable. They must be conveyed from the area of production to the zone of consumption with minimum delay and cost, as well as widely dispersed over the available land area (Upton,2008).

In the last two decades, little or no attention is being given to the agricultural sector, because of the discovery of crude oil in most states in the country, until the advent of the rural transformation policy, which is the bedrock for the actualization of the Millennium Development Goals(MDGs) and vision 2020.The transformation agenda of the government involves; improvement in the supply of inputs, increase of output of commodities and a strong coordination for the development of agricultural businesses (Nwajuiba 2010).

Ajiboye and Afolayun (2009), are of the opinion that transportation is a non-separable part of any society; it exhibits a very close relationship to the style of life, the range and location of activities and the goods and services which will be available for consumption. It is therefore a major factor for all economic activities in space, as an economic factor of production of goods

and services. It is not the absence or presence of resources in their appropriate combination alone that determines the level of development in each area. The harmonization of resources depends on the technological and cultural attributes of a people. Local communities face transportation problems which limit their ability to satisfy their needs for greater access to health, education, and every possible opportunity.

Transportation network is the connectivity present in various medium like roads, railways, water ways, pipelines and air routes. As an important factor of agricultural production or development all over the world, it is the only avenue by which food produce at farm site are transported to different homes, as well as markets. Agriculture is the main stay of our economy in Nigeria. In Yakurr LGA, Bassey and Eteng (2020) showed that the residents of are predominantly involved in agricultural activities. As an agricultural society, Yakurr LGA residents are faced with lots of transportation problems such as potholes, untarred roads, lack of bridges and insufficient and irregularity of transportation mode in evacuating agricultural produce to the market, homes, and different communities. It therefore requires a corresponding efficient transportation network system to take the products from farmland to the market. Additionally, an improved transport system reduces operating cost to vehicle users and provides more direct and cost-effective access to public utilities. It is against this background and considering the agricultural potentials in the study area that this study seeks to assess the impact of road transportation on agricultural development with reference to Yakurr Local Government Area.

Literature Review

The Effects of Road Infrastructure Development on Agricultural Development

Fagbohunka (2012) in his study of road transportation and its effects on staple food production in Itaogbolu, Ondo State charted that road network, inadequate transport facilities and inefficient transportation system form the narrow head of low agricultural productivity and increase in price of agricultural products. He also found out that there is an urgent need to improve the road condition as well as tripartite participation of the state government, local government, and private interest in the transport sector. In addition, poor transportation restricts expansion of agricultural production in this area due to the low farm-gate prices, this ensures that most of the profit from farming accrues to the traders and transporters rather than the producers, the high agricultural potential of the area could however be achieved with improvement in transportation provision of better transportation facilities will ensure higher farm-gate prices; encourage the farmers to increase their production and reduce spoilage and wastage of farm produce in the area. Interventions in the transport sector should not be limited to provision of roads alone. Rather, such measures that will help improve vehicle supply in rural area should also be introduced, solving rural transportation problem in Nigeria go beyond mobility of people and goals.

According to World Bank (2009), road improvements in Nigeria has been associated with increased productivity and improvement in quality of life, this is by encouraging the movement of agricultural and non-agricultural consumption commodities and ensuring the personal mobility of rural households. Similarly, in a study in Northern Nigeria, Gunusa (2018), established that road improvement in part of rural Kaduna State led to significant increase in agricultural production, farm and non-farm employment and revitalization of economic activities in the area. Poor accessibility in the rural areas poses a great challenge to actualize rural development efforts in Nigeria through agricultural reforms, as it has continued to make most of the rural areas to find difficulties in accessing markets for their produce and vice versa (Ajiboye and Ayantoyinbo, 2009; Ajiboye and Olaogun, 2006; Ukwu, 2009). The movement of agricultural goods between the area of production (mostly rural areas) and area of consumption (usually urban centres) is driven by efficient transport system.

According to Adesanya (2018), rural travel and transport in most rural areas in Nigeria still take place with great difficulties thereby compounding and worsening the problem of rural productivity and rural poverty. Those areas with good transportation network cultivate reasonable portion (hectares) of farmland are occupied to meet the demand in the urban and rural areas, whereas the farm land in inaccessible areas where there are challenges of transportation is at subsistence level. However, the case of commercial agriculture needs to be treated with caution to avoid unsustainable land use. This is because the rate and patterns of loss of tropical moist forest cover to agriculture is alarming (Nathaniel 2012: Bisong 2007; Bisong and Arokovu, 2013). The view that accessibility particularly in the form of access to road is not necessarily a precursor to development would appear to be supported by subsequent research form (Hine, 2013).

Hine (2013) found that accessibility (in terms of transport costs involved in moving produce from village to market) in the Ashanti region of Ghana had no bearing on agriculture productivity, if anything, the least accessible villages farm more intensively and sold a greater proportion of their produce. However, evidence was found that the more accessible village had greater access to alternative sources of income such as from food marketing and the provision of rural services. An example from Ethiopia shows that households with good access to roads do not necessarily use more fertilizer than the comparison group with less good

access, but they pay about 17% less for it (Arethua and Bhatta, 2012).

Arosanyin (2019), in his study of feeder road and agricultural development in Yagba East Local Government Area of Kogi State concluded that there no significant relationship between road development and agricultural production but there are other factors like climate condition, farm size and income (capital) of famers that were responsible for agricultural production. He also opined that lack of input, unfavourable climate was responsible for decline in production. In addition, farmers who increase their farm size attribute it to increased labour time on their part and increased labour assistance which is not due to road while farmers who experience declined in production was a result of lack of input and old age which has nothing to do with road.

Yaro, Okon and Bisong (2014) in their study of the impact of rural transportation on agricultural activities in communities with good transportation include: pick-up vans, motorcycle, lorries/trippers as well as head porterage. Moreover, mode of transportation like head porterage, bicycles, motorcycle, as evident in such areas are being taken to nearby communities where all these farm commodities are to be sold and are often sold at very cheaper rate because of the cost, fear and stress of conveying the commodities back home. The poor patronage of this farm commodities leads to wastage of farm commodities, but the reverse is the case in communities with good transportation system whose level of patronage is attractive. Transportation mode is the system of mobility used to carry goods and persons from one place to another. Rural transportation mostly includes animal traction, car, truck, train and other intermediary means of transport such as motorcycle, bicycle, boat and canoe mostly adopted for local transport problems with low and medium loads (Sieber, 2009). Intermediary modes of transportation are crucial to farmers' timely access to farm market adoption may not be unconnected with availability of quality of roads (Oyatoye, 2004).

Ahmed and Rustagi (2007) further noted that crops remain un-harvested or become spoilt once harvested because of unavailability of vehicles during harvesting. According to Ola (2012), transport modes include non-motorized and motorized modes. He further opined that the non-motorized modes include head porterage which is the traditional way of carriage in most rural areas, its meant for subsistent purposes and it involves trekking from one place to another in rural areas which is limited by the distance and capacity of the journey maker both in carriage and walking. He further explained that bicycle is also classified as an unmotorized system of transport mode, and it is better than the head porterage mode for its improvement in speed and carriage capacity. Lindsay and Mukole (2014), in their study of road transportation and agricultural development in Swaziland noted that transportation costs will need to be subsidized by government, consequently without a subsidized motorized transport in rural areas. Communities will prefer to still walk or either use motorcycle or both reducing the transport burden for rural women can release time and energy for productive and socially beneficial activities the magnitude of the transport burden incurred by rural women to obtain access to domestic facilities is luge the only way is to improve access to these facilities inorder to alleviate the burden of social activities or women, they finally concluded that rural roads are catalyst which aimed at better crops, increased rural income, job creation, and improvements in standard of life to transport, relatively small quantities of harvested produce in sub-Saharan Africa not usually more than 100-200kg per week.

Raballand (2010), observed that many farmers can easily use intermediate means of transport, such as carts, bicycles and pack animals for analysis, of 47 minor rural roads in Burkina Faso found that 19 of them carried no four-wheeled motorized traffic at all although they were used by an average 250 bicycles, 100 motorcycles and 100 pedestrians per day (TRB. 2012). Developments of various transportations made have become pivotal to physical and economic developments, such modes include human porterages, railways rope ways and cable ways, pipelines, inland waterways sea, air, and roads (Said and Shah, 2018).

In addition, early results from studies carried out in Ghana (2005 and 2006) support the case indicating that, where roads, for example, are completed and properly maintained, there is relatively better access to facilities and markets, lower costs of travel and increased income, for those in rural communities through which the roads passes. Simon (2014) viewed development as the gradual growth of something so that it becomes more advanced, stronger etc; the process of producing or creating something new (Hornby, 2011). This implies that availability of quality transportation system will also increase the rate of agricultural development. Olayide (2021) sees the relationship between road infrastructure development on agricultural development as an integrated approach to food production, provision of physical, social and institutional infrastructures with an ultimate goal of bringing about improved and sustainable agriculture.

Transport affects agricultural marketing because it is the only means by which farmers can transport their produce to the market. Good transportation in the rural areas has resulted in high productivity, high income and a rise in the standard of living of rural residents and low rate of poverty. Aloba, (2006). Borlaug and Dowswell, (2012) in their study of the role of transport infrastructure in Africa's development noted that efficient transport is the life blood of economic modernization. It is essential to improve agricultural productivi-

ty and enable farmers to bring their products to markets. Intensive agricultural production is especially dependent upon access to vehicles at affordable prices.

Ahmed and Hussain, (2010) reported that rural communities with better access to markets and basic infrastructure such as good road networks have lower poverty levels. Such communities had higher agricultural productivity, higher household incomes, better health and higher participation of women in economic production. For instance, household income was about 33 percent higher in the villages with better transport facilities. In these villages, agricultural incomes were higher by up to 24 percent while, wages were higher by 100 percent in some areas compared to others. Similarly, a village level surveys carried out in Burkina Faso, Uganda and Zambia, Harwell (2006) observed positive relationship between level of access to roads and household income. He concluded that access to good roads raise the economic opportunities for people in rural Africa. Improvement in transport stimulates economic development in rural areas through the expansion of opportunities for income and employment. Similarly in rural areas, access to roads and public facilities increased farm and non-farm incomes thus, helping to raise people's welfare level (Escobal 2007).

Hine (2013) discovered that the more accessible villages are, they had better access to other source of income. Oyatoye (2004) found that in Nigeria if road quality improves, farmers have lower marketing costs and gain access to wider markets. They experience little or no delay in moving their produce and hence have fewer losses. They also receive better market prices for their products as the retaliation of a new road always attract more of transportation system and eases access to farm. Additionally, an improved transport reduces operating costs to vehicle users and provides more direct and cost-effective access to public utilities (Afolayan,2009).

In summary, scholars have reviewed that agricultural activity in communities with good transportation system flows without any mobility hindrance. A good road system is indispensable in having farm produce to market centres, in increasing, productivity, and in enhancing the socio-economic, well-being of rural dwellers in use community.

Transportation Factors Militating Against Effective and Efficient Agricultural Development

Uptal (2011) and Mac Rae (2014) posited that sustainable agriculture is both a philosophy and a system of farming. It is rooted in a set of values that reflects an awareness of both ecological and social realities and a commitment to respond appropriately to that awareness, it emphasizes design and management procedures that work with natural processes to conserve all resources and minimize and improving farm profitability. Agricultural development, a subset of economic development implies a sustained increase in the level of production and productivity over a reasonable length of time and the subsequent improved wellbeing of farmers as reflected in their higher per capita income and standard of living, but in all, there are some transportation factors working against agricultural production.

According to Mabogunje (2011), some of the factors that determine the level of development in a given environment are easy accessibility and mobility. Usman, Adefila and Musa (2013), in their study of the impact of road transportation on agricultural production in Kwara State, Nigeria revealed that factors affecting agricultural production include; farm size, distance to major market, farming experience, age and types of transport services available were found to be important in predicting agricultural production in the area. Although, the type of transport service available was found to be important, the negative relationship with agricultural production indicates that poor transport facilities are associated with low agricultural production the area. Rural settlements in Kaiama Local Government Area which has vast agricultural lands and high agricultural production are the most inaccessible in the state.

Tunde and Adeniyi (2012), in their study of the impact of road transport on agricultural development in Nigeria observed that road transport has a significant impact on distribution of agricultural produce, but some factors are not working together in achieving these significant impacts and they listed it to include:

1) Poor state of roads affects market and farmlands accessibility.
2) Poorly maintained roads lead to challenges in conveying farm produce
3) Inadequate road networks increase travel time and stress.
4) Bad road networks increase transportation cost of conveying farm products.
5) Bad inaccessible roads lead to reduction in the numbers of available road transporters thereby making it difficult for effective agricultural development.

Lindsay and Mukole (2014) in their study of roads and agricultural development in Switzerland concluded that roads are critical in supporting both rural and agricultural development for improved socio-economic conditions of the people, but when not properly managed can lead to negative effects, but in all if the transportation factors affecting agricultural development are not mitigated, it may lead to food insecurity in the area. They went further to list the factors as:

1) Bad state of road networks linking farmlands
2) High cost of transporting farm produce
3) Inaccessibility to marketplaces
4) Un-motorable road networks

Adjiboye and Afolayan (2009) in their study of the impact of transportation on agricultural production in a developing country like Nigeria concluded that an improved transportation will encourage farmers to work harder in the rural areas for increased production, add value to their products, reduce spoilage and wastage, empower the farmers as well as having positive impact on their productivity, income employment and reduce poverty level in the rural areas since it will be easier to move inputs and workers to farm as well as products to markets and agro-allied industries. But for all this to be achieved, the factors mitigating against effective and efficient agricultural production needs to be mitigated.

Other factors that affect agricultural production apart from transportation are low yield arising from old and poor planting material, depletion of humid rainforest and decline in soil fertility, lack of good agricultural practices in the management of farmlands (Iremiren, 2012) and the prevalence of malaria among farmers which has been reported to account for about 3% loss in the Gross Domestic Product from the agricultural sector (Jimoh, 2005). There is an urgent need for improvement in all the series of activities from site selection to primary processing that will ensure sustainable farming in Nigeria.

Materials and Methods

The study area is Yakurr Local Government Area in Cross River State. It has its boundary with Abi in the West, Obubra in the North, Biase in the South and Akamkpa Local Government Area in the East. It was created out of Obubra Local Government Area in 1987. It comprises settlements such as Ugep, Mkpani, Idomi, Ekori, Inyima, Nko, Assiga, Agoi, Bami, Agoi Ekpo, and Agoi Efreke. Yakurr Local Government Area is situated in the southwestern part of Cross River State, Nigeria. It is located within longitude 803' and 806'E and latitude 5040'N and 5058'N.. The study area has a land mass that covers an area of about 670.438sqkm (YAKURR LEEDS 2009). (Figure 1 is the Map of Cross River State showing the study area, Yakurr Local Government Area, Insert Map of Nigeria showing Cross River State). The study area can be accessed through land from Adim as well as Abi through land and water. Commercial mode of transportation within the study area is mainly with buses, cars and motorcycles. Most of the roads are untarred and are not in good or fair conditions. In terms of communication, Yakurr has access to telecommunication services provided by Glo, Nigeria, MTN, 9mobile and Airtel. Internet service have also been activated in the study area.

Yakurr has a total of 134,773 people in 1991 to the census carried out by the National Population Commission. This population when projected puts Yakurr at 308,361 in 2022. This population cut across the settlements of Ugep, Mkpani, Idomi, Ekori, Inyima, Nko, Assiga, Agoi-Bami, Agoi-Ekpo and Agoi-Efreke, with Ugep occupying the highest population. The topography of Yakurr Local Government Area is characterized by low land and undulating landscape. Though there are few isolated steep slope hills around Agoi-Ekpo and Agoi-Ibami forest areas.Yakurr lies within the tropical rain forest belt, the forest has undergone severe degradation due to increased human activities. The remaining forest covers about 182.21 sqkm. This is found mostly in Agoi Ekpo and Agoi 1bami communities. The forest of Yakurr consists of Ukpon River Forest Reserve and Agio forest Reserve. All these share boundaries with the Cross River National Park Forest. Yakurr has equatorial climatic conditions with two major seasons, the rainy and dry season. The area is generally wet with not less than 7- and 8-month rainfall annually. It temperature is between 18.320C and 280C, while the annual rainfall amount is about 2000mm-over 3500mm annually. The rainy seasons starts from April and ends in October with the dry season which may sometimes experience scanty rainfall which begins in November and ends in March. The average monthly temperature is between 240C to 280C.

Method and Procedures

The survey design was employed in this study. This was because the technique facilitates the systematic, objective, and accurate search for the solution of a well-defined problem. Therefore, in this study, a sample was taken from the entire population. This sample was rigorously studied, and inferences were made. Data were

Fig. 1: Map of Cross River State showing Yakurr Local Government Area. Insert: Nigeria showing Cross River State.
Source: Cross River Geographic Information Agency, 2022.

obtained on the socio-economic characteristics of respondents such as the age, sex, marital status, occupation, monthly income, and educational qualification of the respondents. Further were further obtained on the current means/mode of road transportation available, transportation factors affecting agricultural production in the study area such as poor state of existing waterway, poorly maintained road network etc.

The study population consists of ten settlements namely, Ugep, Mkpani, Idomi, Ekori, Inyima, Nko, Assigga, Agoi- Ibami, Agoi -Ekpo, Agoi -Efreke. The total population of Yakurr Local Government Area was 134,773 people in 1991 in the census carried out by the National Population Commission. This population when projected with a growth rate of 3% puts Yakurr Local Government Area at 308,361 persons in 2022. This formed the population of the study.

To determine the sample size, 0.13% of the total population was used, this percentage method was used because it carefully helps in selecting the target population. The result arrived at was 380, which implies that the researcher administered a total of 380 copies of questionnaire among respondents in the study area. Data were collected with questionnaires, oral interview and personal observation.

The random sampling technique was employed in selecting the sampled areas. Yakurr Local Government Area comprises of settlement such as Ugep, Idomi, Mkpani, Agoi- Ibami, Agoi-Efreke, Assiga, Nko, Ekori, Inyima and Agoi-Ekpo. However, for the purpose of this study, all the 10 settlements were numbered on cards and placed in a container and shuffled. From the systematic random sample exercise, six (6) settlements were selected to give every settlement an equal chance to be selected, the selection was done to avoid bias in the selection approach as the six (6) neighborhoods gave a fair representation of the entire situation under investigation. The six (6) sampled settlements were Ugep, Mkpani, Idomi, Ekori, Inyima, and Nko.

Descriptive statistics was used for the study. The descriptive statistics employed the use of tables, charts, or graphs in the interpretation of the data from the field. The percentage analysis techniques were also used to analyze the data collected and this method was used in data presentation.

Table 1: Sample Population and Questionnaire Administration

S/N	Neighbourhood	Existing Population (1991)	Population Project (2022)	Ratio	Number of Questionnaires
1	Ugep	36,869	92,175	39	150
2	Mkpani	15,211	38,028	16	61
3	Idomi	13,621	34,053	14	53
4	Ekori	11,362	28,405	12	45
5	Inyima	7,948	19,870	8	29
6	Nko	10,203	25,508	11	41
	Total	**95,214**	**238,042**	**100**	380

Source: Field Survey 2022.

Table 2: Condition of Road leading to Farms and Markets

Conditions	Frequency	Percentage
Tarred but with potholes	64	17
Earth surface road	146	38
Graded but not tarred	111	29
No Bridge nor culvert	35	9
Narrow Road	24	6
Total	**380**	**100**

Source: Field Survey 2022.

Table 3: Means used by Farmers in Transporting Farm Produce

Means	Frequency	Percentage
Vehicles (Bus /Lorries/Vehicles)	25	8
Bicycles	85	23
Head Porterage	142	38
Motorcycles	114	31
Total	**380**	**100**

Source: Field Survey 2022.

Findings and Discussions

Conditions of Roads leading to the Farms and Markets

Table 2 shows the conditions of road leading to farm and market. From the appraisal, 17 percent respondents are of the opinion that the roads are tarred but with potholes, 38 percent respondents are of the opinion that the roads are earth surface roads while 29 percent respondents stated that the roads are graded but not tarred, 9 percent respondents stated that there are no bridges or culverts at stream connections while 6 percent respondents are of the opinion that there are narrow roads. From the analysis, majority of the respondents attributed it to the existence of earth surface roads as it dominated the study.

Means used by Farmers in Transporting Farm Produce

The information presented in table 3 below are responses from the respondents regarding the means of transporting agricultural products in the study area.The information shows that; 142(38 percent) of the respondents are of the opinion that most of the farmers carry their farm produce on their head to the homes or market, 114 (31 percent) of the respondents are of the opinion that farmers transport their goods using motorcycles, while 85 (23 percent) respondents are of the opinion that farmers transport their goods using bicycles and only 25(8 percent) of the respondents are of the opinion that farmers transport their goods using vehicles such as buses, Lorries, vehicles etc.

Contribution of Road Transportation in Agricultural Development

The data in table 4 shows the contribution of road transportation to agricultural development in the study area as majority of respondents affirms that it leads to higher demand for farm products with 103 (27 percent) respondents, 99 (22 percent) are of the opinion that it

leads to increased access to farmlands, 64 (17percent) are of the opinion that it leads to increased accessibility to market places, while 51(14 percent) are of the opinion that it leads to an improvement in income level, 43 (11percent) and 20 (5 percent) respondents are of the opinion that it guarantees access to farm inputs and it leads to creation of employment opportunities respectively.

Cost of Transporting Agricultural Products

The data in table 5 shows response on the cost of transporting agricultural products in the study area. 85 (22 percent) respondents believed it's very high, while 198 (52 percent) respondents believed the cost is high. The table also shows that 65 (17 percent) respondents believed the cost is low, and 32 (9 percent) respondents believed the cost of transporting agricultural products is very low. It may be deduced from the table that, those who spend high in the cost of transporting agricultural products dominated the study area.

Challenges posed by Road Transportation on Agricultural Development

From the information represented in table 4.16 below on the constraints lose by transportation on agricultural development, majority of the respondents are of the opinion that the challenges have led to high cost of transporting farm produce. This was represented by 122 (32 percent) of the study population. It was closely followed by 102 (27 percent) of the study population who stated that it has led to inaccessibility to marketplaces while 84 (22 percent) of the respondents affirms that it has led to poor state of road networks linking farmlands, and only 72 (19 percent) of the population affirms that it has led to a constraint in the duties of agro-extension officers operations and duties.

Table 4: Contribution of Road Transportation in Agricultural Development

Responses	Frequency	Percentage
Guarantees access to farm inputs	43	11
Improvement in Income level	51	14
Increase access to Farmlands	99	26
Creation of Employment Opportunities	20	5
Increased accessibility to marketplaces	64	17
Leads to high demand for farm products	103	27
Total	**380**	**100**

Source: Field Survey 2022.

Table 5: Cost of Transporting Agricultural Products

Response	Frequency	Percentage
Very High	85	22
High	198	52
Low	65	17
Very Low	32	9
Total	**380**	100

Source: Field Survey 2022.

Table 6: Challenges posed by Road Transportation on Agricultural Development

Response	Frequency	Percentage
Poor state of road network linking farmlands	84	22
High cost of transporting farm produce	122	32
Inaccessibility to Market Places	102	27
Constraints agro-extension officers' operations	72	19
Total	**380**	100

Source: Field Survey 2022.

Discussions

Findings of the study revealed that; majority of farmers covers a distance of between 6-10km from there house to there farmlands as it dominated the study with 198 (52 percent) response rate, while in appraising the existing state/conditions of road networks revealed that majority of the respondents were of the opinion that the road network are in bad condition with 219 (58 percent) response rate. While on the aspect of the contribution of road transportation to agricultural development, it was revealed that the major contribution is on leading to higher demand for farm products with 103 (27 percent) response. Findings of the study also revealed that; the cost of transporting agricultural products in the study area is relatively high with 198 (52 percent) response.

The major factor mitigating against effective and efficient agricultural development in the study area was analysed in table 4.14, which shows what, 139(37 percent) of the respondents stated that inadequate road width is a major cause of the challenges faced by farmers in the area, 123(32 percent) of the respondents stated that is due to the poorly maintained road networks in the study area, while 86(24 percent) of the respondents are of the opinion that it's due to the poor state of the water transportation facilities that would have complimented the road transport in the area and there was an indecisive opinion from 32(8 percent) of the respondents who stated that it is attributed to poor state of substitute waterways, poorly maintained road networks and inadequate road networks in the study area. While the agencies responsible for the management of road networks in the study area revealed that it is solely handled by the community locals with 165 (3 percent) response. Furthermore, findings of the study revealed that; the factors contributing to inaccessibility in the study area ranges from poor government policies, lack of NGO involvement, setbacks in community co-operation and poor financial mobilization and corruption with poor government policies taking the lead response rate.

The effects of road infrastructure development on agricultural development in the study area could be seen in table 4.17 which shows that; it leads to increase in income, improvements in standard of living, guarantees employment opportunities and leads to food security and improve the local values of the people in the community. 135 (35 percent) of the respondents

affirms that it guarantees increase in income level,101 (27 percent) of the respondents affirms that it leads to an improvement in standard of living, while 83 (22 percent) of the respondents and 61 (16 percent) respondents affirms that it guarantees food security and local values and provide employment opportunities respectively.

While the negative effects of undeveloped road infrastructure on agricultural development in the study area was presented in table 4.16 which explains that majority of the respondents are of the opinion that the challenges has led to high cost of transporting farm produce. This was represented by 122 (32 percent) of the study population. It was closely followed by 102 (27 percent) of the study population who stated that it has led to inaccessibility to marketplaces while 84 (22 percent) of the respondents affirms that it has led to poor state of road networks linking farmlands, and only 72 (19 percent) of the population affirms that it has led to a constraints in the duties of agro-extension officers operations and duties.

Conclusion

It is obvious that transportation is responsible for the development of agriculture and other industries right from the past to the present. By meeting travel requirement of people, goods, and services from areas of production to areas of consumption. In an agrarian culture like Nigeria, the impact of transportation spans across different areas of economic, social, environment, agricultural, and political background.

Inaccessibility may therefore affect food availability and food security. The decline in the number of commercial vehicles transporting farmers and traders and their goods to and from the market militates against development. As observed by Iwuchukwu and Igbokwe (2012), policies of government on the transformation of agriculture yet to be given implementation plans. The movement of agricultural goods between the area of production (mostly rural areas) and area of consumption (usually urban areas) is driven they efficient transport system. According to Adesanya et.al. (2013), rural travel with respect of agricultural products in most rural areas in Nigeria is still taking place with great difficulties thereby compounding and worsening the problem of rural productivity and rural poverty.

This study shows that road transportation facilities in the study area are in poor state and this situation has been aggravated by the setback in government policies on transportation and agricultural development in the study area. This is obviously having a negative implication on agricultural development. It is also revealed that road transportation has a significant impact on the distribution of agricultural produce in the study area. It can therefore be concluded that road transportation in agriculture dominated areas should be improved upon to improve agricultural production generally in Yakurr Local Government Area of Cross River State. This will in turn generates more income, develop the agricultural sector, and improve the standard of living of the farmers as well as the inhabitants of the area under study.

Government should make available or provide transportation development to ease the problem of transportation in the study area, while re-evaluating the existing accessibility infrastructure in the study area. Construction of new roads and bridges should be carried out to open areas that are inaccessible. Conversely, there is need for infrastructural development advocacy and to revive the transportation system envisaged in the study area. While doing this, there is a need for farmers to form small scale ventures to attract government interest, as this would expose their community resources or potentials to the government, thereby encouraging investors to invest in the local economy.

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