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Analysis of the Condition of Roads and its Impacts on Sustainable Agriculture in the Rural Areas of Ifon, Ondo State, Nigeria.

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ABSTRACT
Road transportation cannot be separated from sustainable agriculture because of the key roles to help move the agricultural produce from farms to houses and markets places. This research focuses on analysis of the condition of roads and its impacts on sustainable agriculture in the rural areas of Ifon, Ondo State, Nigeria. Five communities were sampled. 149 questionnaires were used to elicit information from respondents, using systematic sampling techniques. Findings show that, many of the respondents waste too much time at the bus stops while waiting for vehicles or motor cycles that will help take their produce home/market. It also shows that all the roads in the study area were too narrow and were all earth roads devoid of road furniture. Renovation and regular maintenance of all existing roads with adequate provision of road furniture, street graphics, and clearance of weeds at both sides of the road were recommended.

Keywords: Farm produce, Ifon, Road condition, Rural areas, Sustainable agriculture.

I. BACKGROUND TO THE STUDY.

Generally, Road transport means transportation of goods and personnel from one place to the other on roads. In the early 1980s through to early year 2000s farmers in Ifon and surrounding villages and camps were very many with great harvest from their farms. Traders who engaged in buying agricultural produce were uncountable from far and near. Particularly at Oja lamotu which is a modern regional market located at the South Eastern part of Ifon town, along Akure –Benin express way. It covers about ten hectares (10ha) of land .The available facilities include; car park, lorry bay, truck park, open spaces etc. Furthermore the lorry bay used to be filled with at least fifteen (15) trailers every market days. These trailers were used to transport goods like; plantain to Abuja, Garri (cassava flakes) to Lagos, pepper and okra to Benin City and Warri respectively. It is the biggest in the area; it is a periodic market of every five (5) days. Regrettably, those large numbers of agricultural produce sold in the market those days are gradually going into extinction. To the extent that, one can hardly get a trailer load of all the major produce put together on Ifon market day. This reason has been traced to poor road condition from almost all the camps and villages to Ifon. This reason has caused many farmers to abandon their camps and move on to another state especially the non indigenes who are the majority among the farmers. The implication of this is that majority of rural travels is done on foot, and freight transport is done by intermediate means of transport, such as bicycles and motorcycles. This invariably constitutes a limitation to the ability of the farmers to transport sizeable quantities of the produce to Ifon markets.

Owen (2008) stated that "immobility perpetrates poverty", effective transportation eases accessibility to inherent potentials of rural areas, which could be harnessed for the development of its economy. In other word, road transportation provision forms an intrusive part of agricultural development strategies, serving as a mechanism and catalyst for agricultural transformation through the reinforcement of rural development and contributes to poverty reduction by enhancing both equity and efficiency outcomes. Lokesha & Mahesh (2016) posited that, among agricultural infrastructure; road infrastructure plays a very significant role in accelerating agricultural production. They further stated that, rural roads connectivity is one of the key components for rural development, as it promotes access to economic and social services, generating increased agricultural income and productive employment.

International Fund for Agricultural Development (IFAD, 2000) observed that

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construction of rural roads almost inevitably leads to increase in agricultural production and productivity existing lead use to take advantage of expanded market opportunities. Better roads also lowered the transaction costs of credit services, resulting in increased lending to farmers, higher demand for agricultural inputs and higher crop yields.

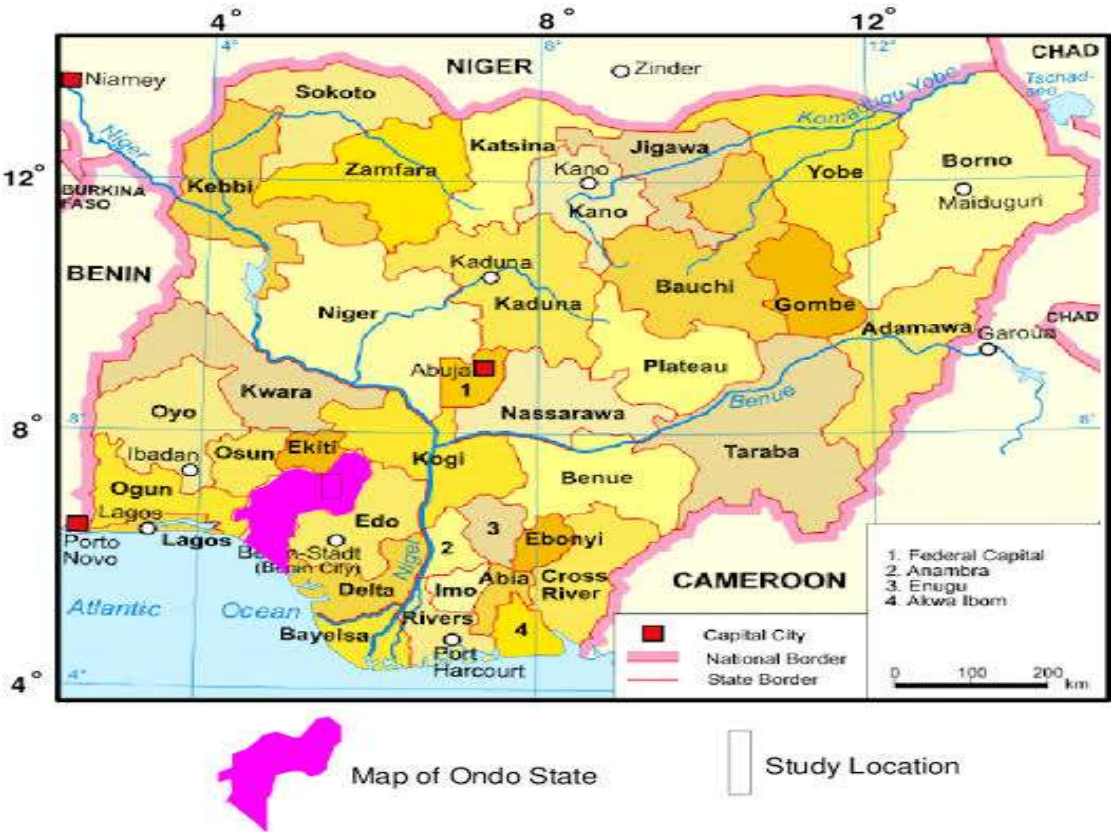
In the light of the highlight on road condition above, it becomes expedient to analyze the condition of rural roads and its impacts on sustainable agriculture in Ifon, Ondo State, Nigeria. So that the extent of the problems could be determined, and possible solutions be proffered.

II. MATERIALS AND METHODS

Study area

Ifon is located on latitude $6^0 55^{'}$ north of the equator, and on longitude $5^0 46'$ east of the Greenwich Meridian, it is on the Elevation of 153 metres and on high altitude of 1.47km. (Google earth imagery, 2016). Ondo State is in the South Western part of Nigeria (Map1).. Ose Local Government is located in the Northern part of Ondo State (Map2). Ifon is located at the South Eastern part of Ose Local Government (Map 3). It also serves as the Local government's administrative headquarters. It is bordered at the North by Ori-Ohin, at the East by Ikaro, at the South by Sobe and at the South-West by Ijagba, at the West by Imoru and at the North-West by Ute.

The two major markets in Ifon are; Oja-Olorisa, and Oja-Lamotu. These markets, particularly Oja-Lamotu attracts traders from places like; Benin City, Sabongida Ora, Uzeba, Sobe, Ugbeturu, Owan, and Agbanikaka all in Edo State. Others includes; Warri in Delta State, Owo, Akure, Ikaro, Ute, Imoru, Okeluse, etc. Major agricultural produce sold in the markets includes among others; yam, plantain, kola nut, cocoa, cassava, maize, pepper, okra, koko yam, etc. Hunting is another major practice; animals hunted and found in the markets include; buffalo, tiger, lion, elephant, antelope, grass cutter, deer, etc. villages, camps and farmstead where these agricultural produce are brought and have direct links to Ifon include but not limited to; Abusoro, Ago Asaboro, Agric Settlement, Elegbeka, Ori-Ohin, Omi-Alafa, Oruju, Ugboke Aboluwodi, Ago Ogwajalaye, Ogijesha, Odogboro, Omiobi, Ugbonla, Ago Oshomaalo, and Ugboke Iyapo (Table 1) and (Map 4).



Map 1: Map of Nigeria in relation to Ondo State.
Source; Federal Ministry of Survey, Abuja, Nigeria (2020).

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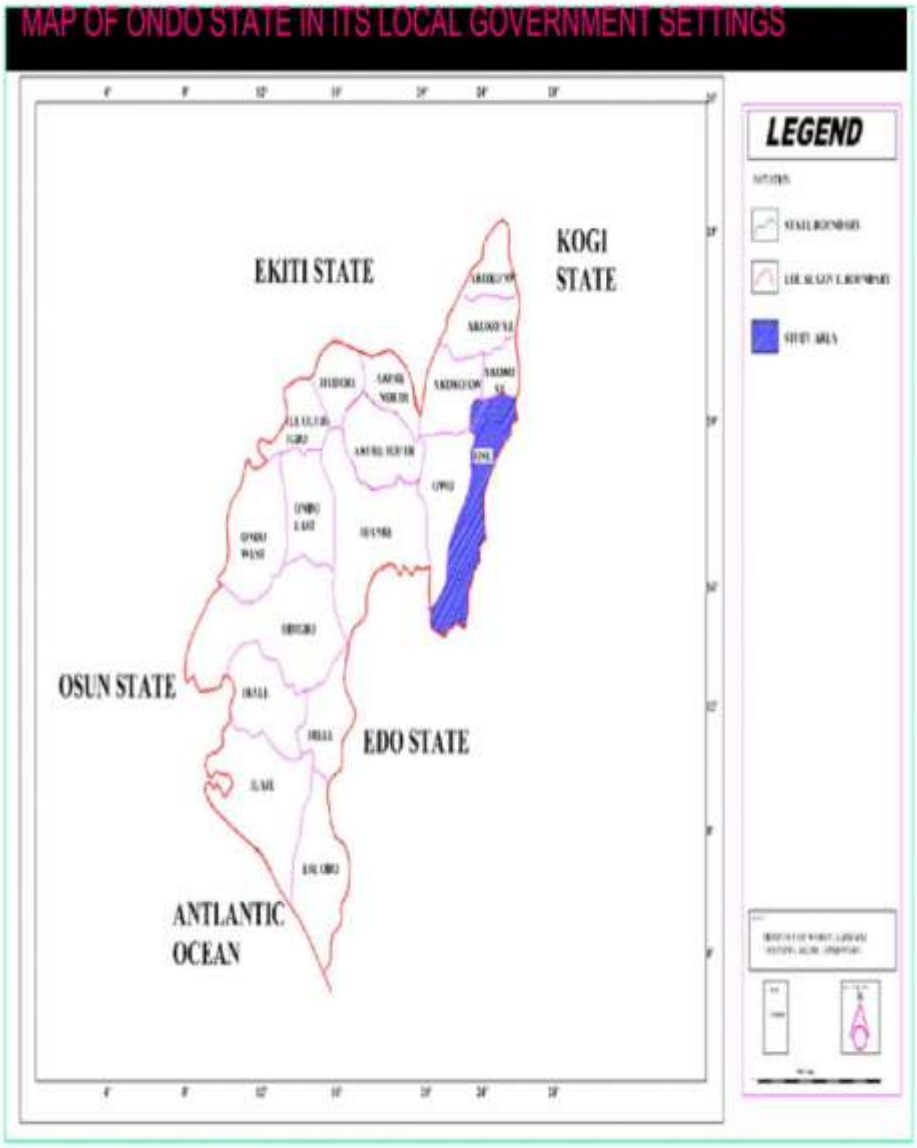

Map2: Map of Ondo State, in its Local Government Settings.
Source; Ondo State Ministry of Physical Planning and Urban Development (2019).

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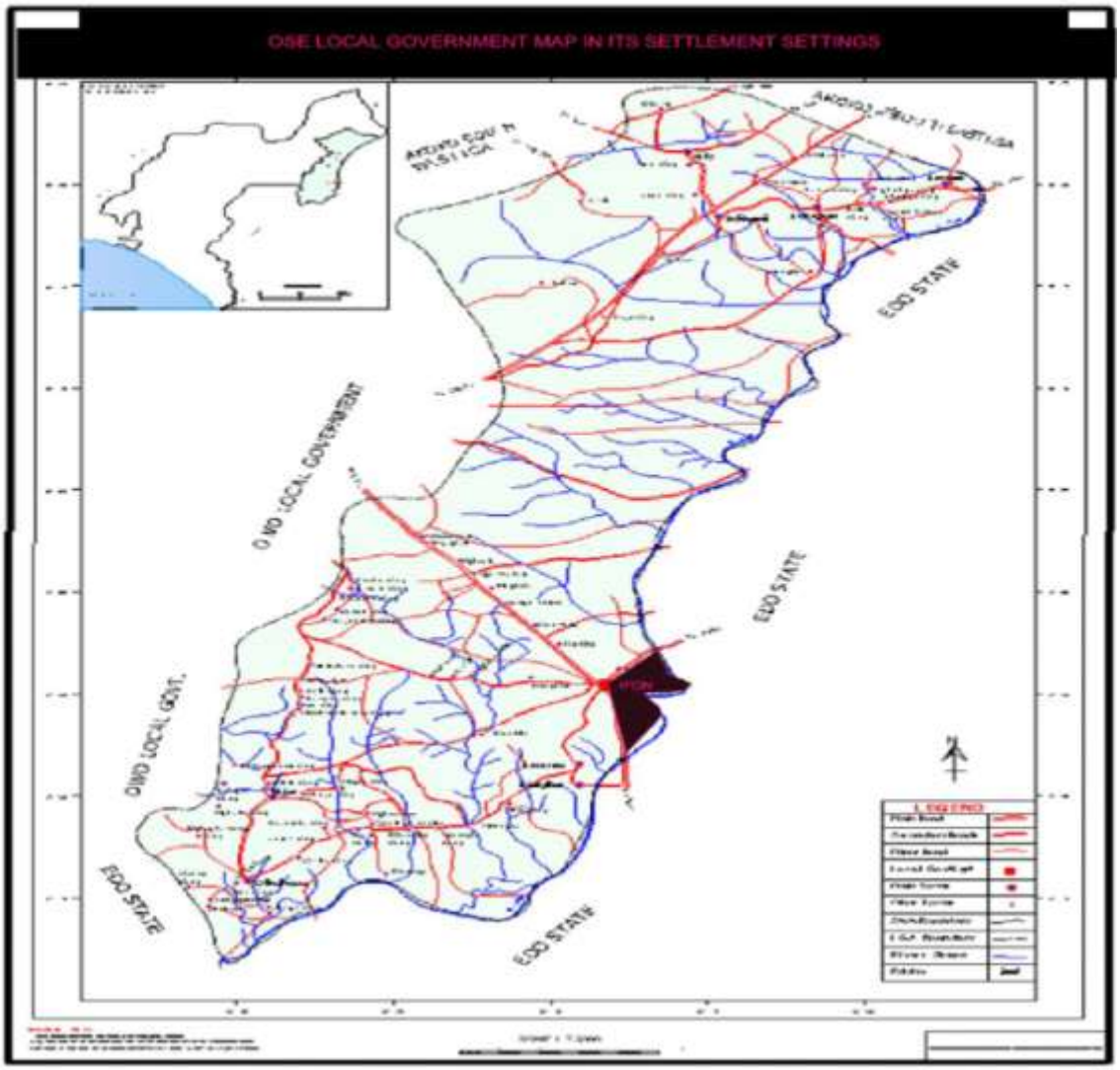

Map 3: Map of Ose Local Government, in its Settlement Settings.
Source; Ondo State Ministry of Physical Planning and Urban Development (2019).

III. METHODS

Data for this study were sourced from internet, text books, academic journal, and field survey among others. Five (5) communities were sampled out of the fifteen (15) identified communities. (Table 1) and (Map 2), on account of their geographical locations, and condition of roads, significance and quantity of agricultural produce, and distance from Ifon markets. Purposive sampling technique was used to select sampled communities. Questionnaire was administered on the households using systematic sampling technique. Focus group discussion was used to extract information from the road users, particularly the commercial vehicle and motor cycle operators. The key point of the discussion with the road users was the major challenges faced with regards to the road condition, while the farmers informed on the impact of the transportation system on their production. Measuring tape was used to determine the road width; photo camera was used to complement personal observations for the on-the-spot assessment of the roads' condition. Relevant literatures were also consulted as secondary data.

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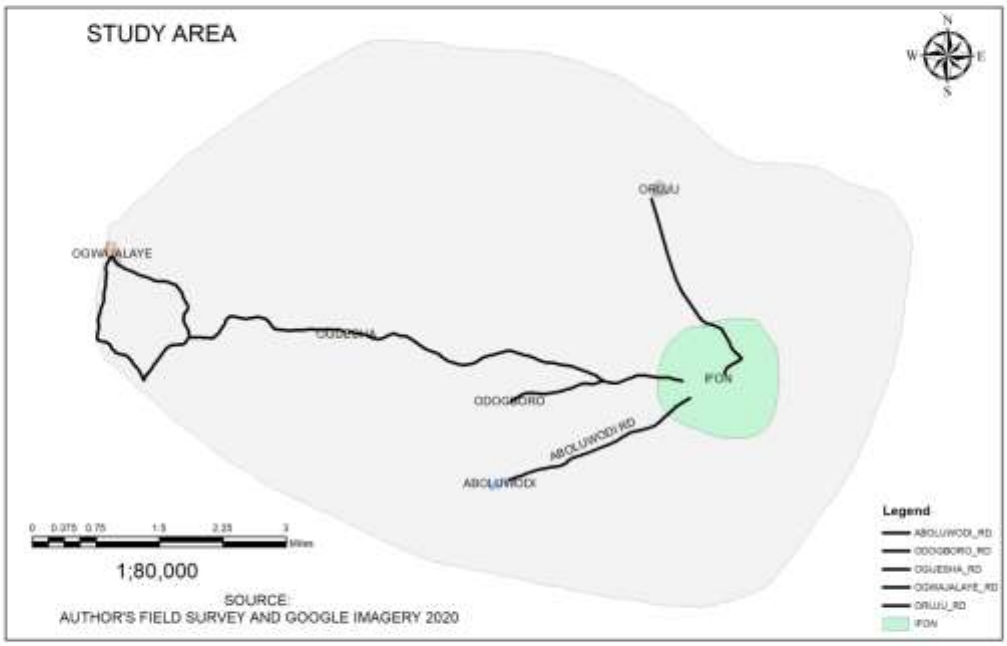
Table 1; the Selected Communities.

Communities	Projected Population	Number Of Households	Sample Size
Ogijesha	578	83	17
Ogwajalaye	1255	179	36
Aboluwodi	1017	145	29
Odogboro	2169	310	62
Oruju	173	25	5
Total	**5192**	**742**	**149**

Source;National Population Commission (1991) and Author's input (2020).



Map4: Map of The Study Area.

Source; google earth imagery (2016) and authour's input (2020).

IV. RESULTS AND DISCUSSION.

Findings of the study include condition of roads, challenges faced by road users, and the impacts of road condition on agricultural produce.

Condition of Roads at the Study Area.

The survey conducted on condition of roads include; width of roads, available road infrastructures, type and nature of road surface.

Distributor road was the only hierarchy of road linking the communities at the hinterland to Ifon. Obateru (2007) posited that, a standard distributor road should be between 18 and 24 metres wide. The study revealed the average width of road linking the communities to Ifon as; Ogijesha road was between 2 and 4 metres, Ogwajalaye road was between 1 and 4 metres, Aboluwodi road was between 3 and 6 metres, Odogboro road was between 2 and 4 metres, Oruju road was the narrowest (plate 2) it was between 1 and 3 metres wide (table 2).

Findings on the type and nature of road surface revealed that; all the roads at the study area were earth roads, and almost all of them were eroded, except Aboluwodi road that was newly graded as at the time of conducting this research (plate 1). The study also revealed that none of the roads had road infrastructure (table 2). This implies

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that, no road at the study area was up to manageable standard considering their conditions.

Table 2; roads condition at the study area.

Communities	Average road width (metres)	Type and nature of Road surface	Available Road furniture
Ogijesha	2-4	Earth and eroded	None present
Ogwajalaye	1-4	Earth and eroded	None present
Aboluwodi	3-6	Earth and eroded	None present
Odogboro	2-4	Earth and eroded	None present
Oruju	1-3	Earth and eroded	None present

Source; Athour's field survey (2020).

PLATE 1: Condition of road between Ifon and Aboluwodi camp.

PLATE 2: Road condition between Ifon and Oruju camp.

Major challenges faced by road users.

Safety and timely arrival at one's destination are factors of transport system but insufficient mode, and a paucity of infrastructure affect traffic flow, patronage, and sustainability of the market (Ayo-odifiri, et al, 2018). Where these

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challenges abound, delay at the bus stop likely set-in, especially where the number of vehicles plying the routes are few. Figure 1 revealed that, 4% of the respondents spent less than or equal to 30 minutes with their loads at the bus stop while waiting for vehicles or motor cycles, respondents who spent between 30 and 60 minutes at the bus stop accounted for 15.4%, about 52.4% of the respondents spent between 60 and 90 minutes at the bus stop. From the summation above, a negligible 4% of the respondents usually spent less than or equal to 30 minutes at the bus stop, whereas, a total of 96% confirmed that they usually spend hours at the bus stop waiting for vehicles and motor cycles (figure 5).This implies loss of time and fatigue experienced by farmers at the study area.

The vehicles and motor cycles' operators confirmed that the poor condition of roads used to cause a lot of damages to their vehicles and motor cycles. Hence, many of their colleagues have left the routes, and those still operating have increased the transport fare and do not carry too much loads. The inference is that, the delay at the bus stops were caused by the high number of road operators who left the area and subsequently lead to high cost of transport and shortage of vehicles and motor cycles

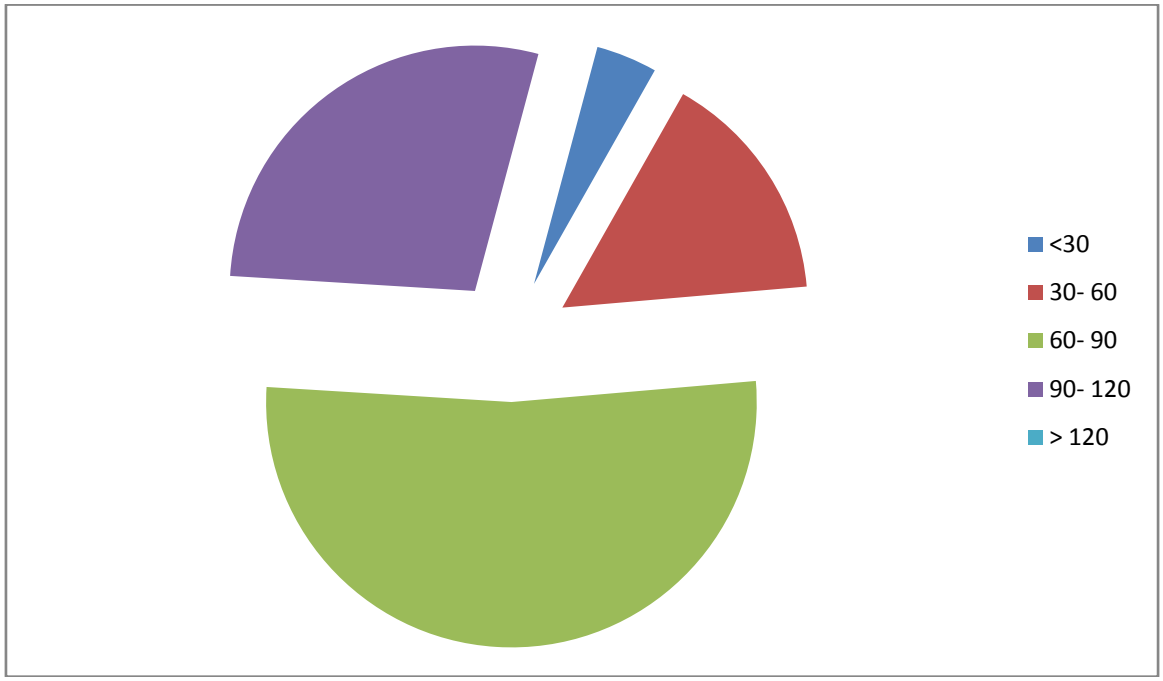

Fig. 5; Average time (minutes) spent at the bus stop by respondents.

The impacts of road condition on produce.

All stakeholders at the study area formed different Community Base Organizations (CBOs) simply because of the challenges faced concerning the road and how best to solve it. The result gathered from the CBOs revealed five (5) major negative impacts of poor roads' condition on agricultural produce in the area. Most of the farmers have reduced the quantity of their farm produce because of many reasons. The reduction in farm produce resulted to shortage supply of agricultural produce at the markets which invariably leads to unimaginable increase in price of farm produce at the study area. The increase in price leads to low patronage. Hence, many of the farmers changed their system of farming from annual to perennial. Some of them who cannot afford to change farming system relocated to another area where the road condition is favourable.

Policy guidelines.

It has become imperative and urgent for all stakeholders in the study area to evolve a well articulate policy on rural roads' management for sustainable agriculture. Hence, the study recommends that the policy thrusts should include among others;

- All the existing roads in the study area should be renovated to acceptable standard with adequate provision of road furniture.

- Road maintenance is a cost-effective measure which makes use of existing transportation infrastructure. Thus, regular maintenance of roads, street graphics, and furniture is advocated.
- The CBOs in the study area should be well motivated and adequately guided.

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