KOLA-NUT TRANSPORTATION IN NIGERIA: A CASE STUDY OF REMO-LAND, OGAN STATE

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ABSTRACT

Transportation is a crucial factor in improving agricultural productivity. It enhances the quality of life of the people, creates a market for agricultural produce, facilitates interaction among geographical and economic regions and opened up new areas to economic focus. The link between the farmers and consumers is enhanced by efficient transport mechanism for constant inflow of farm produce. The economic investigation into how this process is undertaken is necessary for the profitability of any business venture. This research investigates the crucial role transportation plays in kola nut production using survey research technique. A total of 100 respondents were randomly selected and interviewed using well-structured questionnaires. This represents 20% of the registered kola nut farmers in Remo land, Ogun state. Sagamu Local Government Area has 40% of the respondents while 30% each were from Ikenne and Remo North Local Government Areas. The obtained data were analysed using descriptive statistics. This study revealed that an improved transportation will encourage farmers to produce more, add value to their produce, and reduce spoilage.
and wastage. Efficient transport helps to move inputs and workers to and fro the farm as well as products to markets and agro-allied industries. Adequate transportation have positive impact on farmers’ productivity, income, employment and poverty reduction in the rural areas.

**Keywords:** agricultural productivity; farm transportation; agro-allied industry; product marketing; profitability.

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1. INTRODUCTION

Transportation is the movement of people and goods from one location to another, a concept that is as old as human existence. Farm transportation has evolved over the years from human carriers, farm animals to the use of sophisticated mechanisms such as air plane and train facilities. It involves means such as air, rail, road, water, cables, and space. Farm transportation plays a key role in the agricultural and economic development of many nations as it provides access for extension agents to transfer new and improved agricultural technologies to the rural and farming communities, timely delivery of inputs to the farm and evacuation of harvests to the urban areas where they are mostly demanded. These ensure improvement in agricultural production, food availability in urban areas and improvements in the economy of rural communities [1]. Availability of transport facilities is a critical investment factor that stimulates economic growth through increased accessibility, its efficiency and effectiveness [2]. Transportation and distribution are directly linked to the supply and cost of foodstuff. Enormous quantities of food produced are lost due to inadequate and inefficient transport provisions. This has hampered agricultural production and development in Nigeria [3-5].

The simplest and most probably the oldest method of conveying goods including agricultural produce employed by man, was on his head, shoulder or back depending on the sacredness of parts of the body [6]. With the increase in population and advent of mechanized agriculture, travel distances increased, as most of the centres of food production were far remote from the urban settlement where a bulk of the food was needed. Because of the limitations of the volume of produce and speed of delivery, human portaging became inadequate and better means were desirable both as complements and alternatives. Improvements in human portage were the introduction of the backpack, which places the load on the lower waist by means of a wide belt and the tapered shoulder pole, which could increase the amount of load conveyed by about 25% [7]. Various types of carts and wagons pulled by man were found useful and where the environment permitted, animals as beasts of burden were employed in farm transportation either supporting the load directly or pulling a container onto which the produce was held. Mechanically powered equipment introduced by man was found useful and where the environment permitted.

Most transportation activities carry out in developing countries is done on the land. There is the need for improvement on this within the economic and technical limitation of the end-users for enhanced operational efficiency [8-9]. Water transportation is common in the riverine and coastal regions, while rail systems where available are used mostly for cash crops transportation.
In developing countries, farm transportation experiences a catalogue of problems. These are the absence of all-weather roads in rural communities, limited vehicles, poor and expensive commercial transport system [10; 11]. Farming communities are denied of any form of access routes or at best are only linked to one another through a network of footpaths. Various efforts have been made at correcting this but very little success has been achieved [9; 11-14].

This research study was to help in improving the kola nut transportation condition of the farmers, middlemen and road users, so as to ensure effective delivery. This will help to reduce the effect of drudgery on the farmers, labour and ensure timely delivery of inputs and farm produce. It is therefore against this background that an attempt to examine in depth how the transport situation in the study area affects agricultural products with emphasis on kola nut production.

2. METHODOLOGY

Most of the rural dwellers are traditional peasants, whose individual contribution is insignificant but collectively form an important bedrock for the economy of the state. The major agricultural products found in the area are cash crops such as cocoa, kola-nut, rubber, palm-oil, citrus trees and the arable crops like yam, maize, cassava, rice, coco-yam, sugar-cane, and melon etc. These products serve as food for man and raw materials for agro-allied industries within and outside the state. They also provide revenue to farmers and generate foreign exchange to the government.

2.1. Overview of the Economics and Pharmacological Importance of Kola nut

Kola nut is generally believed to be indigenous to West Africa. It has more than forty varieties of which four are commonly and widely cultivated and edible [15]. These are ‘Cola acuminata’, ‘Cola nitida’, ‘Cola verticillata’ and ‘Cola anomala’ with only the first three having relevance for kola trade in Nigeria.

There are two major types of kola nut in Remo land namely ‘Cola nitida’ (kola of commerce), otherwise referred to as ‘gbanja/goro nuts’ and ‘Cola acuminata’ (kola of social and traditional significance) known as ‘abata nuts’ (Fig.1 & 2). Nigeria produces about 120,000 tonnes of kola nut annually and they are mostly found in the southwestern region of the country, covering Ogun, Ondo, Oyo, Osun and Lagos State [5; 16]. Kola nut contains about 2% caffeine and is chewed by many people as a stimulant while it is also used in the manufacture of dyes and cola group of beverage drinks such as Coca-cola, Pepsi-cola, Africola, and Sena-cola. A substantial quantity is exported to other African countries as well as to Europe and North America which generate the necessary foreign exchange earning to the government [17]. It also employs a greater percentage of the people as kola nut farmers, assemblers-processors, bulking agents, wholesalers, exporters, importers and retailers.

Kola nuts are often used to treat whooping cough and asthma. The caffeine present acts as a bronchodilator, expanding the bronchial air passages. Kola nuts are perhaps best known to Western culture as a flavouring ingredient and one of the sources of caffeine in cola and other similarly flavoured beverages.
2.2. Description of the Study Area

Remo land is one of the four major divisions of Ogun State, Nigeria with a population of 427,058. It is made up of three Local Government Areas namely Ikenne, Remo North and Sagamu with a population of 113,735, 59,911 and 253,412 respectively [18]. It is a semi-urban area with an urban population of about 64% [19]. Among the major settlements in the study area are Sagamu, Iperu, Isara which are designated as urban by the Ogun State Government in 1988 while other prominent ones include Ikenne, Ilishan, Ogere, Ode-Remo, Akaka, Irolu, Ilara, Ode-Remo, Ewu-Osi, Ewu-Ode and Ipara. The area is bounded in the East by Odogbolu and Ijebu-North Local Government Areas, in the North by Oyo State, in the South by Lagos State and in the West by Obafemi/Owode and Ifo Local Government Areas. It is located on Latitude 6° and 7° north of the Equator and Longitude 2° 45 and 4° East of Greenwich meridian and a land area of 97,298.34 hectares. It is one of the areas that occupy a strategic position in Ogun State because it is situated midway between west and east, an important commercial and industrial area. Apart from agriculture, a considerable number of people of Remo land have shown interest in trading especially kola nut. There are 20 daily, periodic and night markets in the land which serves as an outlet for agricultural produce and other goods from within and outside the area. Prominent of these markets are Sabo-Ofin, Awolowo, Falawo and Oja Oba in Sagamu, Ifepade, and Magbon in Isara, Aketan in Iperu while Sabo-Ofin market is the largest market noted for kola nut and general goods merchandise [5]. Road transport is the most predominant mode of transportation in Remo land and this is a confirmation of the crucial role transport plays in the socio-economic development of any nation. Road transport has the most complex network, covers a wide range, physically convenient, highly flexible and usually the most operationally suitable and readily available means of movement of goods and passenger traffic over short, medium and long distances in Ogun State [20]. There are three types of road observable in the rural areas of Ogun State covered by this study. These are tracks or bush paths that are relatively wide, unsurfaced rural roads and surfaced rural roads.

2.3. Method of Investigation

The method of investigation for this study was administration of a well-structured questionnaire; descriptive and analytical in nature. One hundred respondents were selected using the random sampling method which represents 20% of the registered kola nut farmers in Remo land with 40% from Sagamu local government area and 30% each from Ikenne and Remo North local government areas while hundred per cent return rate was recorded. The
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The questionnaire sought information on the socio-economic characteristics of the respondents, the type and quality of production and frequency of modes of transportation used and the effects of transport on kola nut production. Data collected were analysed using descriptive statistics.

The questionnaires administered in these villages were aimed at obtaining information about the accessibility problems faced by farmers in transporting their goods from the farms to traders in the cities and rural areas. It was designed to determine the extent to which the transportation problem affected the general well-being of the farmers, hired labour, middlemen and other road users.

2.4. Summary of Questionnaire
The questionnaire was divided into two sections. The first was addressed to the farmers seeking to obtain information on the type and quality of kola nut produced, the mode and cost of transportation, the marketing channel and transportation problems encountered by the farmers and effects of transportation on kola nut production. The second part of the questionnaire focused on itinerant transporters, traders who are usually middlemen between the farmers and traders in the urban centres. They (traders) too often experience acute transportation problem and they usually neglect the small villages in their rural visit for the purchase of kola nut. The questionnaire addressed to them sought information on type and volume of kola nut produce purchased, villages of purchase, the destination of produce, mode of transportation and cost.

3. RESULTS AND DISCUSSION

3.1. Current Status of the Road Network in the Study Area
Results obtained from the field survey revealed that a total of 30.8% of roads were tarred and these roads mainly link the major towns, the state capital and other parts of the local government area. While 19.2% of the roads are fairly goods, though they are not well constructed but at least enable transportation from one district to another. 50% of the roads are untarred or lateritic-surface, single lane road. The field survey revealed that these roads started as footpath resulting from farm activities. They were later widened, partly as a result of frequent usage to enable motor vehicles to reach the villages. Only 40.5% of this road is motorable all the year round and 52.2% are motorable during the dry season. As a measure of the alignment, the numbers of sharp bends per kilometre were minimal bases on average noticed. This indicates that the roads were straight as vehicles movement lack attempt to avoid obstacles like streams, trees, hills, valley etc.

These roads were maintained by Local Government Authority and rural communal efforts (villagers who are using them).

3.2. Result and Analysis of Findings
Results presented was based on analysis of 100 copies of the questionnaire that was administered during the field visit to respondents, while additional information was gathered through personal communication and group discussions via rapid rural appraisal technique.

The respondents were kola nut farmers, either on a full time or part-time basis as some of them produce kola nut along with some other crops such as cocoa, cassava, cocoyam, maize, melon, yam and some vegetable plants. Analysis of the kola nut type production showed that 58% of the respondents said they produce the commercial type of ‘gbanja’ kola nut only, another 26% of them specialise in producing social type of kola nut ‘Abata/Gidi’ while the remaining 16% indicated that they produce both varieties of the crop. Respondent based on the
length of time the farmers have been involved in kola nut production which was grouped into below 5, 6-10, 11-15, 16-20 and above 20 years.

From Table 1, 6%, 15%, 18%, 26% and 35% of the respondents are in the above categories and the minimum year recorded was 1 year while the maximum year recorded was 45 years. This revealed that majority of them are experienced kola nut farmers with 77% spending above 10 years in the production of the crop. Based on the reasons given by the respondents for producing kola nut, 32% of them produce strictly for commercial reason, 18% for consumption only, 13% for social and traditional reasons and 37% of the respondents produce based the three stated reasons. From the field survey, it was discovered that some kola nut farms are meant for the communities and their kings “Oko Oba” (meaning farm for the kings) and the kola nut from such farms are often not for sale but rather used for entertaining, social and ritual purposes. These types of farms are common at Makun, Ewu-Osi, Irolu and Ilishan.

The quantity of kola nut production by each farmer varies from one farm to another and from one season to another and these are based on so many variables such as the climatic and physical conditions, availability of transport and market facilities, disease and pest infections, the size of the farms and their maintenance, farm inputs and seedlings as well as the labour supply. Some 4% of the respondents reported that they do produce above 5 tonnes, 33% produce between 100-1000 kg while the rest 7% said they only produce less than 100 kg of kola nut per annum. Farm size has a direct link with the level of production as observed in the study. Those with kola nut farms above one hectare produce more than a tonne of kola nut while those with small holdings produce less than a tonne annually.

3.3 Means of Transporting Kola Nut

The mode of transportation often used in transporting kola nut from the source to other destination was also identified through the information supplied by the farmers. The means of transportation identified as being prevalent in the study area are head porterage, bicycle, motorcycle, taxi, public transport (pick-up van and buses) and Lorries as shown in Table 1. It shows that the most available means of transport for kola nut is head porterage being the most predominant means of conveyance of kola nut. It could be seen from the Table that 67% of the respondents use head porterage as a dependable means of transport to carry kola nut from one place to another. This is explained by the relatively short distance from the place of origin to the destination, relatively scarce vehicles and the high cost of transport.

3.4. Distance Travelled by Farmers

The distance covered by the kola nut farmers from their farms to the nearest motorable roads and their houses to farms and markets were also analysed. On the distance between their farms and the nearest motorable roads, as shown in Table 2, 84% of the respondents have their farms within a radius of 0-3 km and above. The Table also shows that the more the distance the farm is to a motorable road the fewer the people who would want such a land to farm and this is in agreement with the finding of [2].
### Table 1: Available means of transportation and frequency of patronage

<table>
<thead>
<tr>
<th>Type of trip / Total porterage</th>
<th>Lorries</th>
<th>Public</th>
<th>Taxis</th>
<th>Motorcycle</th>
<th>Bicycle</th>
<th>Head</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm to farm 100</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>97</td>
<td>100</td>
</tr>
<tr>
<td>Farm to farmstead 100</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>7</td>
<td>92</td>
<td>100</td>
</tr>
<tr>
<td>Farm to village 100</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>12</td>
<td>85</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Farmstead to village 100</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>14</td>
<td>15</td>
<td>77</td>
<td>100</td>
</tr>
<tr>
<td>Village to town 100</td>
<td>3</td>
<td>15</td>
<td>10</td>
<td>20</td>
<td>12</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Town to headquarter 100</td>
<td>1</td>
<td>21</td>
<td>18</td>
<td>32</td>
<td>10</td>
<td>18</td>
<td>100</td>
</tr>
<tr>
<td>Total 700</td>
<td>6</td>
<td>42</td>
<td>35</td>
<td>75</td>
<td>74</td>
<td>468</td>
<td></td>
</tr>
<tr>
<td>Percentage 100</td>
<td>1</td>
<td>6</td>
<td>5</td>
<td>11</td>
<td>1</td>
<td>67</td>
<td></td>
</tr>
</tbody>
</table>

| Mean                          | 1       | 6      | 5     | 11         | 1       | 67   |

**Figure 3:** Distances involved in point-to-point transportation of kola nut from the farms
The distance covered by the farmers on a daily journey to farm from their various houses was as shown. Only 57% of the respondents have their farms within the radius of 0-3 km and 31% covered an average distance of 3-4 km before reaching their farms, 8% of them covered 4 – 5 km and the remaining 4% have their farms located at least 5 km from home. Trekking these far distances resulted in the exhaustion and also wastage of both time and money as remarked by the respondent.

Also, Figure 3 shows the distance covered by the farmers to get their products to the markets and collecting centres. 54% of the respondents have the market within the radius of 0-3 km and 17% cover an average distance of 3-4 km to their respective farms while about 29% have a distance of above 4 km before they could sell off their kola nut product. Easy accessibility and mobility are some of the variables to determine the level of development in a given environment according to [21]. But from the sampled farmers, many of them complained about the distance they have to cover, the hours and amount spent daily in getting to the farms and markets in order to farm, buy farm inputs and implements as well as sell their kola nuts. 54% of them concluded that their farms and markets are far (above 3 kms) and 28.5% are close by (2-3 km) to their houses and the remaining 17% said they are very close.

3.5. Economic Analysis of Transporting Kola Nut

From the analysis, it was discovered that a large percentage of the respondents trekked to and from their farms every day and even when the transport facilities are available, many of them could not afford it because of their low income. However, some among them go to their farms on bicycles, motorcycles and on public transport. The cost of transporting the farmers and their products are considerably high and increasing every day according to the respondents. The factor responsible for the disparity in prices varies from one community to another and from one farmer to another. However, these are issues raised by the respondents, the poor condition of the roads which make some places inaccessible, high fuel price, high price for acquiring new or fairly used vehicles which resulted in inadequate supply of transport facilities, periodic availability of vehicles on some roads, the high cost of spare parts and maintenance.

The respondents also confirmed the general belief that transportation has an effect on the production level of the farmers as well as the price of the crops. 30% of the respondents very much agreed that the above statement is true, another 48% mentioned they agreed, 20% slightly agreed and the remaining 2% do not agree at all. This further shows the importance of transportation in agricultural development. If there are no good transport facilities, the farmers would not be able to produce more since they are not quite sure of how they would evacuate the products from their farms and the price of the little available crops in the markets would be very high as many people would not be able to afford it. Similarly, it would affect the health of the citizenry, the production level of the agro-based industries as well as the general economy. The frequency and methods of selling of kola nut by the farmers were also focused upon. The response given by 48% of the respondents was that they sell their kola nut on daily basis, 20% sell theirs on a seasonal basis, 18% on weekly basis, while the remaining 9% and 5% of the respondents sell on monthly and quarterly basis respectively. However, it is generally believed that the best period for a farmer to sell kola nut is between May and July before the harvesting of kola nut which commences in late July to September of each year.

On the mode of selling, 40% of the respondents said they sell through the middlemen that come around and visit the farmers at their farms and homes and buy the processed nuts, while another 35% of them sell their own products at the specialised kola nut markets. Another 13% indicated they always take their kola nuts to the urban market (Sabo, Sagamu) to sell while the last group of respondents which make up the remaining 12% indicated they sell their fresh
unprocessed nuts directly on the farm and home to the itinerant female assemblers who later sell to the local consumers and these conclude a three link channel as identified by [22]. The majority of the kola nut farmers that sell their products on the farm indicate reasons for these which are to minimise transportation cost and problem involved in trying to process the kola nuts. The farmers gave their opinion on the issue that inadequate transportation facilities have a negative effect on the production and price charged on kola nut. Some 72% of the respondents believed that an improvement on the road condition among other factors can motivate them to grow more kola nut and this, in essence, will mean more improvement in transport services and will also attract more buyers into the region as well as possible higher profit margins for the kola nut. However, 28% of the sampled farmers were in contrary on the ground that there are other factors to be put in place such as the enlargement of the farm size, prompt maintenance of the farm and control of pest and diseases. The views of the respondents on the ways the improvement on road condition can benefit them most were also analysed. It could be observed from Figure below that 42% of the respondents believed that an improvement in the condition of the road will help them have easier access to markets for their kola nut, 27% believed that it would help their crop to attract higher prices by increasing the demand, 7% believed that it will help them to have easier accessibility to farms, 3% was of the opinion that it will help to reduce damaged and spoilage of crops before getting to the markets while 21% of them believed that it will help to reduce majority of the problems they have been having in their farm work.

![Graph showing benefits of road improvement](image)

**Figure. 4:** Respondents view on the ways the improvement on road condition can benefit the farmers

4. CONCLUSIONS AND RECOMMENDATION

The study was concerned with the evaluation of transportation of kola nut with emphasis on Remo land in Ogun State Nigeria. The study revealed that the rural transport is poorly developed and more often rural communities have to improve their accessibility to their settlements through communal efforts, such roads are at the best lateritic–surfaced, seasonal roads of poor quality.

Transport plays a significant role in the structure of food production, distribution and marketing. From the analysis, it could be deduced 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 the productivity, income, employment level and reduce poverty level in the rural areas.
Transport is also seen as a facilitating factor in the mobilisation of the farmers and other allied workers in the overall national development of the nations.

An effective farm transportation system depends on the availability of good functional vehicles and good motorable roads that minimizes the wear and tears to which vehicles are subjected. A holistic framework must be put in place for improved transportation network for enhanced productivity in the rural areas.

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