

ADDRESSING ROAD INFRASTRUCTURAL NEEDS OF RURAL COMMUNITIES FOR ACCELERATED AGRICULTURAL DEVELOPMENT IN ABIA STATE, NIGERIA

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ABSTRACT

This paper highlights the road infrastructure disposition of Abia State in order to verify discordant views and claims on the level of rural development in Abia State, Nigeria. In addition to extensive review of official document of Abia State governments, structured questionnaire were used in obtaining data analyzed using means, frequency distribution and percentages. There is evidence that roads in Abia State received attention by way of construction and rehabilitation. Findings show a predominance of earth and gravel-coated local government roads in the state (71.8%). Almost all the federal roads in the state (92%) were bituminized. Respondents' perception show visible dissatisfaction with the level of road infrastructural development, a situation that is capable of reducing entrepreneurship and promoting poverty and environmental degradation, if unchecked. The paper notes the complementary relationship between good access roads, promotion of opportunities, empowerment and security in driving rural development; and recommends strategic measures for improving the road network and promoting social and economic well-being of inhabitants of Abia State.

Key words: road infrastructural needs, rural communities, agricultural development

INTRODUCTION

Nigeria's rural infrastructural policy recognizes infrastructural development as a pre-condition for sustainable economic development (FMAWRRD, 1987; ASPC, 2005). This justifies Federal Government of Nigeria's past rural development initiatives and programmes, and particularly her adoption of the 1986 Political Bureau recommendations that the appropriate tiers of government in Nigeria (Federal, State and Local government) should provide all-season road network in the country to, among other things, foster rural-urban integration and integration of agriculture and industry (MAMSER, 1987).

The Directorate of Food, Roads and Rural Infrastructures (DFRRI), through the Integrated Rural Development Direct participation scheme also encouraged communities to contribute to the provision and maintenance of rural infrastructures, namely, rural feeder roads, rural water, sanitation and rural electrification. Under the first phase of its programme, DFRRI constructed 38,107,16 kilometers of rural feeder roads nationwide (FMOI, 1991).

Rural development schemes worldwide provide for reserve land for roads, public services, (schools and hospital) open spaces and burial grounds (Adesanya, 2000). A road is a thoroughfare, route or way between two places, which has been improved (smoothed or paved) to allow travel by some conveyance, including a horse, cart or motorized vehicle (National Department of Transport, South Africa). It is a line of communication (travel way) using a stabilized base other than rails or airstrips and open to public traffic, primarily for the use of motor vehicles running on their own wheels, including bridges, tunnels, supporting structures,

junctions, crossings, interchanges and toll roads (OECD, 2004). Roads are public or private, the former being laid out by public authority, or dedicated by individuals for public use, while the latter are used by private individuals only. Roads are constructed mainly with natural aggregates – sand, gravel and crushed stone. These aggregates are incorporated into asphalt and concrete to form the road base. Figure 2 is a typical cross-section of a well-constructed road.

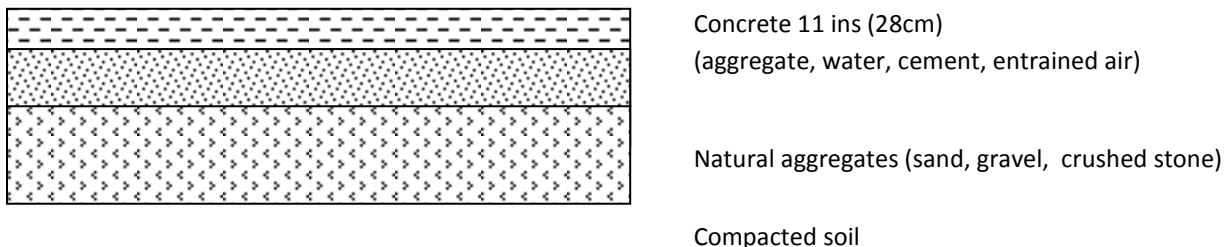


Fig 2: Generalized cross section of a typical highway

Proportions of soil constituents (sand, silt, clay) are sometimes adjusted and compacted under optimum moisture conditions, or by addition of suitable admixture to improve its load-bearing and weather-resistant properties. This improvement may be achieved through mechanical, cement, lime and bitumen stabilization. Generally, roads are classified on the basis of responsibility for construction/maintenance, traffic characteristics and total weight it can carry. (Table 1). Road transport in Nigeria evolved from the use of windy, undulating pathways or footways especially in the interior areas, to stone-paved ways; and from smoothed, paved roadways to sophisticated concrete highways. These roads criss-cross each other in a complex network, thus facilitating land communication in Nigeria.

Table 1: Criteria for highway classification.

1	Criteria	Description
	Locational and financial responsibility	National or federal highways Provincial or state highways District or local government roads, and Village or community roads.
2.	Vehicular traffic	Traffic density or number of vehicles using the road per hour and per day. Character of traffic – mixed traffic, trucks only, passengers vehicles only Designed speed represented by a figure e.g. 60km per hour.
3.	Tonnage (Useful in structural design)	Federal highways 1500 – 5000 tonnage per day. State highways 1000-1500 tonnage per day District highways 200-500 tonnage per day Village highways below 200 tonnage per day

Source: Vazirani and Chandola, 2005

Public and private roads of varying standards, quality and efficiency exist in Abia State, and they either link small communities with state road networks, or connect villages with each other providing access to farms, markets, streams and creation/tourist centers. Construction and rehabilitation of roads in the State, to make them functional and safe, is the responsibility of both the communities and the three tiers of government in Nigeria. The length of the Federal Government roads in the state as at 2006 was 34,341.25 kilometers (NBS, 2007). By 2009, the Federal Roads Maintenance Agency estimates revealed that the country's national road network was 194,200km, out of which 34,120km (17.6%) were Federal roads, and 129,580 (82.4%) state, local and rural roads (Adebayo *et al.*, 2009).

Road traffic in Nigeria varies from light passenger services (cars, buses, taxis) to heavy freight services such as trailers, tankers, trucks, lorries and delivery vans. Although roads compete with freight services (rail, air, ferry) to facilitate communication in country, it is by roads that goods and services are transported to and from railway stations, harbours and airports. However, these other communication routes do not possess features or obstacles that hinder navigation through a road network such as other vehicles, pedestrians, debris, construction accidents and emergency vehicles etc. The import of efficient road network derives largely from the fact that agricultural marketing practice has spatial and temporal dimensions. In most cases, the point of agricultural production differs from the point of processing, sale and consumption, warranting movement of inputs, goods and services. Roads facilitate farm input delivery and produce evacuation; enhance development of market and marketing infrastructures that increase competitive rural trading and value addition; facilitate market information dissemination that ensure temporal and spatial arbitrage; and determine location suitability for processing, storage and other infrastructures that reduce post-harvest losses and add value to produce. (Idachaba, 1992).

The prevailing situation in Nigeria today where most political leadership aspirants after publicly declaring through manifestos, their intent to provide rural infrastructures (feeder roads, electricity, water etc), fail as incumbents to provide these facilities and enhance the quality of rural life, is an aberration. It is indeed a breach of unconditional contractual obligation. Succinctly put, most public authorities in Nigeria now face performance crises regarding provision of effective road infrastructure. Notwithstanding avowed interest in the welfare of the rural dwellers, and significant financial resources allocated to rural development in the country in last two decades, the governed do not seem to be impressed by their efforts to redeem campaign promises regarding provision of social infrastructures and amenities, including good roads, or even reducing their vulnerability to poverty. The multiple road accidents and attendant loss of lives on Nigerian roads has become worrisome. This situation is disturbing because, according to World Bank Report, roads create enabling environment for industrial and commercial activities to thrive, and subsequently drive economic growth and development (World Bank, 1998).

Floyd Barry, in Abasiokong (1980), highlighted the frustration of the typical rural masses who felt short-changed by public authorities in the late seventies thus: *"I was hungry and you formed a committee to investigate my hunger; I was homeless, and you filed a report on my plight; I was sick, and you held a seminar on the situation of the underprivileged. You investigated all aspects of my plight, and yet I am still hungry, homeless and sick"*

Although committee formation, community needs and situation analysis, workshops/seminar etc are viable rural development strategies that show government's sensitivity to the plight of the rural people, this hypothetical case speaks volumes about the gap

between government's rural development efforts/achievements and rural dwellers' expectations regarding rural infrastructural provision.

Paradoxically, most leaders produce rosy annual or end-of-tenure reports or almanacs, and show crisp pictures that dramatize, personalize or sensationalize rural development efforts, particularly road construction and maintenance activities. Unfortunately, these documents are in-house generated and pictures could be manipulated to create the desired impression. The Federal legislature has commenced proceedings for the probe of all expenditures on the nation's road since 1999 to ascertain whether the nation got value for its money, and the Federal Road Maintenance Agency (FERMA) the organization with oversight function in this matter is at the centre of the probe.

Against this background, this paper reviewed the state of roads and ascertained people's perception and level of satisfaction or otherwise with road infrastructures in Abia state. This is with a view to verifying the paradoxes, and establishing the validity of claims by government agencies against actual trends and public opinion, with respect to road infrastructural provisions in the State.

METHODOLOGY

Multi-stage sampling technique was adopted in selecting respondents from the three agricultural zones of Abia State, namely, Aba, Ohafia and Umuahia. Two communities were randomly selected, from each zone; and from each of these communities, fifty respondents were randomly selected, giving a total sample size of 300 respondents.

In the first phase of the study, the achievements of the various tiers of government in road construction and rehabilitation/maintenance, as detailed in their annual reports or related documents, were reviewed. Rapid rural appraisal technique was adopted in the second phase of the study. This involved administering questionnaire to respondents, and requesting them to perceptively evaluate the current status of roads in their communities. A four-point Likert type rating scale, bad (1); poor (2), good (3) and very good (4) was used to ascertain the quality of the roads. Means equal to 2.5 or above was interpreted as indicating satisfaction with the quality of roads, and less than 2.5 as evidence of dissatisfaction or apprehension.

RESULTS AND DISCUSSION

There is ample evidence that government undertook periodical maintenance and rehabilitation of roads in Abia State. (Table 2). A total of 43 roads were handled by 21 companies including Otubraco, Technyco, Zerock, JPROS and Worldwide (ABSG, 2008). Out of these, 12.9% were newly constructed, 40.7% were rehabilitated, while the rest (42.40%) received other forms of attention. This includes patching of potholes, construction of drainage, painting of road median and kerbs, erosion control works, construction of roundabout and installation of reflective street signs/traffic posts. (ABSG, 2009).

Abia states, as shown in Table 2, has a population of 2,833,999 made up of 1,162,449 (Aba zone) 885,826 (Ohafia zone) and 785,719 (Umuahia zone). The utility of a road is determined by the population it serves, the agricultural produce of the track and industrial output of the area (Vazirani and Chandola, 2005); and the road that gives more benefit i.e. the road with more utility index is given priority attention.

Table 2 shows the types and numbers of roads in Abia State (2003-2007), classified as Federal, State and Local government (LGA) roads, and re-classified by type of surface-earth, gravel, bitumen.

Table 2: Average Road Mileage by Type of Surface and LGA (2003-2007)

	Federal Roads			State Roads		LGA Roads		Total	
	2006 population	Bitumen	Earth / gravel	Bitumen	Earth/gravel	Bitumen	Earth/gravel	Bitumen	Earth/gravel
Aba Zone									
Aba North	107488	17.2	-	110.9	180.4	16.0	356.64	144.1	537.04
Aba South	423852	80.08	-	122.04	140.6	14.4	287.5	202.12	428.7
Obioma Ngwa	181439	30.68	-	98.52	50.6	-	670.4	129.2	721.0
Osisioma Ngwa	219632	19.2	-	66.84	106.2	-	362.6	86.04	468.8
Ugwunagbo	82618	13.2	2.4	37.4	59.0	-	422.4	50.6	483.8
Ukwa East	58865	2.0	-	111.6	61.6	-	224.4	113.6	286
Ukwa West	88555	65.6	-	76.6	58	-	310.2	142.4	386.8
Sub-total	1162449	227.96	2.4	623.9	656.4	30.4	2634.14	868.06	3312.14
Umuahia Zone									
Ikwuano	137993	31	-	19.6	28.4	-	130.28	50.6	155.08
Isiala Ngwa North	153734	47.4	-	58.46	62.6	-	87.12	105.86	149.73
Isiala Ngwa South	134762	26.9	-	69.56	54.4	-	77.0	96.52	131.4
Umuahia North	220660	55.0	-	162.8	28.6	-	177.68	217.8	206.28
Umuahia South	138570	19.4	-	23.62	27.56	-	117.74	43.02	114.36
Sub-total	785719	179.75	0.0	334.04	201.56	0.0	589.82	513.8	756.84
Ohafia Zone									
Arochuku	170206	47.6	-	44.04	57.0	-	196.02	91.64	253.02
Bende	192111	65.2	-	232.76	45.0	-	167.08	297.96	212.08
Isuikwuato	114442	47.0	-	48.3	61.2	-	155.8	95.3	204.0
Ohafia	245144	32.8	52.8	84.2	120.6	6.8	295.4	123.8	468.8
Umuneochi	163923	68.6	-	39.6	60.8	6.8	119.2	108.2	158.8
Sub total	885826	261.2	52.8	448.9	344.6	6.8	933.5	716.9	1296.8
Grand total	2833999	668.92	55.2	1406.84	1202.56	37.2	4157.46	2098.76	5365.78

Source: Ministry of Works, Housing and Transport, Umuahia NPC (2006)

The Table reveals a predominance of earth and gravel-coated local government roads in the state (71.8%) and an extensive use of both bitumen (53.9%) and earth/gravel (46.1%) coating in state road construction and rehabilitation. Almost all the federal roads in Abia State (92%) were bituminized. Some federal roads in Ugwunagbo and Ohafia LGAs had earth and gravel coating.

Bituminous materials derived from petroleum have cementing property that increases hardness, toughness and durability of roads. Maintenance treatment for such bituminized roads include crack sealing, surface rejuvenating, fog sealing, micro milling and surface treatment (O’flaherty, 2002). Generally, Federal roads are longer than state and LGA roads, and carry the heaviest traffic. The total length of Federal road sin Nigeria in 2006 was 33,835,75 kilometers with Niger State having the highest (2,177.2km) and Bayelsa State at least (167.8km). The high population density and expansion of construction industries and sites in major cities place additional demand for solid construction of federal roads and for routine treatment in order to extend their service life. Maintenance of such roads take the form of normal repairs (maintaining shoulders and berms) and patching repairs); renewals (putting a fresh wearing coat on the surface when due to size and number of potholes it becomes uneconomical to continue to fill potholes); and repair of bridges and culverts.

Entries in Table 3 reveals respondents divergence of opinion but dissatisfaction with the state of infrastructures, particularly feeder roads in Abia State.

Table 3: Respondents perception on state of infrastructural facilities

	Perceived state of Infrastructural facilities	Ohafia Zone			Aba Zone			Umuahia zone		
		Non-existent	Poor	Good	Non-existent	Poor	Good	Non-existent	Poor	Good
1	Rural feeder roads	56.6%	14.2%	29.2%	-	78.0%	22.0%	-	100%	-
2	Rural electrification	24.5%	58.5%	17.0%	-	62.0%	38.0%	8.0%	50%	12.0%
3	Rural water and sanitation	67.0%	30.2%	2.8%	-	26.0%	74.0%	34%	52%	14.0%
4	Agro-processing facilities	31.2%	33.0%	35.8%	40%	60.0%	-	50%	38%	12.0%
5	Agro-storage facilities	68.9%	28.3%	2.8%	48.0%	52.0%	-	-	20%	80.0%

Source: Field Survey, 2011.

On the average, only 17 percent of these respondents admitted that the roads were in good state. This is not surprising given the predominance of earth and gravel coated roads in the state. Earth roads are of low quality and are unsuitable for weighty vehicles. The dust which is a regular feature of earthen roads is a nuisance because it causes discomfort to the travellers, loss of visibility to the driver, and increase in vehicular depreciation. Good roads guarantee efficient transportation system and our social, cultural and political institutions can be built up and our life in general enriched only through efficient transportation system (Vaziram and Chandola, 2005).

On the other hand, poor road conditions, among other things, cause tyre wear, accelerate vehicle deterioration, increase maintenance needs and reduce fuel consumption. There is, in addition to the cost of building and maintaining the road, the cost to the vehicle user for using the road. The poor state of roads and transport in Nigeria caused mechanical damage resulting in 20-100% of the loss of fruits and vegetables (Onayemi, 1981).

CONCLUSION AND RECOMMENDATIONS

Roads, this discourse has shown, are indispensable whether they perform sub-arterial functions in urban centers, link small towns with each other or big cities, provide access to recreation/tourist centers, or provide access for flows of freight vehicles etc. One of the development challenges facing Nigeria, and Abia in particular today, is road infrastructure deficiency. Agricultural development will be enhanced if there is optimal location of agro-service (input supply and marketing) centres, enhanced mobility to farms, reduction in crop loss through flooding, and efficient functioning of farm machinery such as tractors and allied equipment. These are facilitated or marred by the state of roads. The following recommendations will improve the road situation in Abia State.

Firstly, there is urgent need for our leaders to show political will to implement government's rural infrastructural policy of promoting the construction of more feeder roads in Abia State to facilitate opening of new lands for development, and enhance social interaction among the rural, populace. This will reduce the heavy pressure on, and further deterioration of dilapidated roads in the state. A substantial amount of government's funds needs to be committed regularly, in addition to incentives for private sector investment in road construction in the State. Secondly, members of rural communities and development agencies should always take proactive action to prolong the lifespan of roads in Abia State. Practical steps in this direction include surveillance or monitoring road conditions to identify and manage spots that hinder free flow of traffic and smooth functioning of the highway. The cost of maintaining potholes and ruts is minimal, but increases if not handled with dispatch as the process will now involve cutting a regular pattern around the damaged part, removing the earth to the depth of the pothole, filling the pattern thus made with same type of soil, and compacting it thoroughly with a grader, dragline or scarifier.

Thirdly, additional attention should be given to roads during rainy seasons. Excess water due to precipitation and flow from adjoining land has a detrimental effect on the road, because it gets into the foundation of the soil and affects its superstructure. The rainy season in Abia State is bimodal, commencing from early March to late October, and sometimes lingering into November. An efficient drainage system would control the moisture content of the roads. Vazirani and Chandola (2005) recommended providing adequate camber for the road surface to ensure quick drainage of surface water, side draining to avoid accumulation of water at particular points on the roads, provision of bridges and culverts to drain away the maximum discharge likely to pass and tapping, and draining off all sub-surface water.

Fifthly, deliberate efforts should be made to plant avenue ornamental trees or establish roadside tree plantations in the state. Apart from providing shade, enhancing aesthetics and yielding revenue, roadside arboriculture provides fruits, stabilizes soil formation and protects the soil surface against bleeding. Finally, Tourism development is a revenue generating venture, and tourist attractions (zoo, hotels, parks, and reserves, teachers, endangered species) exist in Abia State. Developing good roads, walkways and paths will, among other things, boost tourism,

reduce the occurrence of road accidents, enhance aesthetics and promote social and economic well being of inhabitants of Abia State.

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