

# Nigeria's Transport Infrastructural Development: An Integral Part of National Economic Empowerment and Development Strategy (Needs)

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## Abstract

Transportation infrastructural development remains a major tool for achieving the aspirations of the newly introduced economic principles of the Federal Government of Nigeria National Economic Empowerment and Development Strategy (NEEDS). Hence, the paper aims at empowering Nigerian basic livelihood through appropriate transport infrastructure investment. The production and their distribution costs through such investment will be reduced. Thus, higher level of production and consumption is achievable.

This paper also examines the past budgetary allocation strategies vis-à-vis the thoughts and the applicable parameters for the different transport sub-sectors. The paper further examines the structure of transport infrastructure development in Nigeria and suggests strategic reformation in the provision and financing of transport infrastructure. The paradigm shift leans more to stronger private sector participation. This alternative funding constitutes a way of minimizing the inefficiencies of public administration and avoidance of external borrowing.

This paper finally draws out the implications of the current discourse and experience for policymakers to place appropriate and adequate investment on transport infrastructure towards building strong, sound and viable economic environment.

## Introduction

Transportation is the cornerstone of civilization. As the society and economic organizations become complex, the relevance of transport grows. Also, the demand for transport is a derived one, because it depends on the demand for the commodities carried or the benefit of personal travel and each travel is unique in time and space. Hence, the demand for transport services increases with the extension of the input-output relationships of an economy. In Nigeria, transport's contribution to the Gross Domestic Product (GDP) is relatively low. For example, in developed countries, transportation's contribution varies between 11 and 16 percent of the GDP, whereas in Nigeria it varies between 3 and 12 percent.

The contribution of the transport sector to the economy of Nigeria if considered via the GDP tends to stagnate or decline at about 3% of GDP. Indeed the sector's real contribution to GDP continued to decline from 6% in 1981 to 12% in 1991 and 3.10% in 1998. In particular, road declined from 2.90% in 1995 to 2.86% in 1996 and 2.84% in 1997 before returning to 2.86% in 1998 while rail made less than 0.01% impact between 1994 and 1998. Before the Structural Adjustment Programme (SAP), transport sector contributed 5.98% to GDP in 1981, and 4.60% in 1985 before a continuous decline to its lowest 3.10% level in 1997 and 1998 respectively (F.O.S., 1999). Rail services contribution fluctuated between 1981 and 1985 before sliding continuously downwards from 0.15% in 1981 to 0.07% in 1984, the 0.06 % in 1998 and 0.02% between 1992 and 1993 before the current situation of less than 0.01% impact on GDP. Road which remains the most significant sub-sector declined significantly for this period i.e. from 5.17% contribution to GDP in 1981, roads declined to 3.88% by 1985, 2.78% in 1991 before slightly appreciating steadily to 2.93% in 1994 and again down at 2.86% in 1998 (F.O.S., 1999).

The elasticity of demand for transport depends on the elasticity of demand for the commodity being transported as well as on the proportion of transport costs in the value of the delivered product. Also, studies in Nigeria's economies suggest that transportation costs have a significant proportion of the final price of most goods - agricultural, manufactured and mining products. On the average, transport accounts for more than

30% of the value of the delivered product. This high cost is due to the inadequacy and inefficiency in Nigeria's transport infrastructure.

Transport costs on the feeder roads to the trunk road or the railway to the port often cost as much as between 55 and 60 percent of the receipts from these commodities. Also, price elasticity of demand for transport is very high in Nigeria's transport system. The more efficient the transportation network is, the lower the transport costs but presently, large productions of the economically important movements are bulky, low-value agricultural and mineral products (Olanrewaju and Falola, 1986).

It should be mentioned that infrastructure needs cut across sectors and is central to economic development and present the state of infrastructure for economic development in the country is far from meeting the expectations of the average investor in Nigerian economy. This inhibits investment and increases the cost of doing business. Hence, infrastructure development is one of the key areas that NEEDS intends to make a difference. Given active partnership with the private sector, government intends to hands-off routine management of businesses and to commit itself to the provision of adequate infrastructure and regulatory framework for business.

## **Present State of Infrastructure in Nigeria**

The importance of infrastructures to a nation cannot be overemphasized as efficient infrastructure facilities act as catalysts for development, there is therefore cause for concern while considering the infrastructure base in Nigeria today which is comparatively unfavourably with several African nations both in terms of quality and service coverage. In particular, the rural areas where the bulk of our population resides are largely deprived of the basic transport infrastructure.

The major road transport infrastructure in Nigeria consists of 32,000 km of Federal highways including seven major bridges across the Niger and Benue Rivers, the Lagos ring road, the third mainland axial bridge, 30,500 km of state roads, and 130,000 km of local roads (Buhari, 2000). Buhari stated further that as at June 1996, only 50% of the Federal roads and 20% of the State roads were in reasonably good condition. Only an estimated 5% of the local rural roads were freely motorable. The rehabilitation program carried out by the PTF in the years 1996 to 1999 covered selected portions of the Federal roads totaling about 12,000 km, along with township roads in about 18 selected cities. Even this program however has now lost its steam. Meanwhile overuse and lack of maintenance are further eroding the rest of the Federal highway network.

In Nigeria today, a considerable number of the populace live away from an all weather road. Neglect of road maintenance multiplies the cost of repair by 200% - 300% after every rainy season, and increases cost to vehicle owners and shippers by more than 50% for paved roads and much more for gravel and earth roads. The implication of this to manufacturers and producers is grievous, to say the least. It increases cost of production and makes goods and produce made in Nigeria less competitive in both domestic and international markets.

The effects of the inadequate maintenance and renewal of equipment and facilities is visible in all sub-sectors: inadequate condition of the roads and the need for their subsequent reconstruction; inadequate replacement and maintenance of vehicles, contributing to high social costs of atmospheric pollution, resulting in high operating costs. In turn, such excessive operating costs, by decreasing net operating revenues, make timely replacement of vehicles difficult. In the case of railways, lack of necessary resources to keep track, rolling stock and maintenance facility in reasonable conditions produced a very serious deterioration of the railway system. Similar problems affect inland waterways affecting their ability to perform useful functions.

According to Olomola (2003), inadequate provision of transport infrastructure and services provide a basis for explaining the incidence of poverty across various Nigerian communities in both urban and rural areas. The categories of transport problems that can be identified are: bad roads, fuel problem (high fuel price, shortage of fuel supply and high transport cost), traffic congestion (long waiting time, bad driving habits, hold-ups), inadequate high passenger capacity/mass transit vehicles and overloading, high cost and shortage of spare parts, poor vehicle maintenance and old vehicles. It is clearly established that inadequate transport facilities and services as well as the constraints imposed on the mobility and accessibility of people to facilities such as markets, hospitals and water sources have grave implications on deepening poverty levels. Thus, there is need for urgent policy measures to address the prevailing travel and transport problems.

The vast majority of Nigerian national transport movements are performed by the road transport sub-sector, with railway and inland waterways playing important, although secondary, roles. In the international transport, sea transport is the principal transport mode, while air transport, together with coastal shipping and road transport, as a link with neighboring countries, are the principal passenger carriers.

Today, road transport accounts for more than 90% of the country's goods and passengers movements (Filani, 2002). Although planned investment in the transport sector witnessed a slight shift of emphasis to water and

air transport in the Rolling Plans of 1991-1993, and 1994-1995, the road sub sector still accounted for over half of the total investment (Table 1).

**Table 1: Federal Government Transport Sectoral Allocation 1990-1999 Rolling Plan Periods**

Plan Period	Roads %	Rail %	Water %	Air %	Total Allocation (in millions)
90-92	70.14	14.03	7.24	8.60	2,210.000
91-93	52.42	12.95	19.41	15.22	2,695.428
93-95	59.65	6.23	15.91	18.21	8,379.446
94-95	56.67	1.33	22.92	19.09	6,017.250
96-98	40.23	42.16	15.98	1.62	28,491.420
97-99	32.03	32.93	26.19	8.86	52,310.162
Average	51.86	18.27	17.94	11.93	

Source: Total sum extracted from Rolling Plans 1990-1999

The importance of the road sector is reflected in government's resource allocation to it in the last four decades. The road sub sector, which accounted for 54% of the Federal government's total public sector planned capital investment in transport in the 1962-68 First National Development Plan, received more than 70% of the allocations during the third (1975-80) and fourth (1981-85) Development Plan periods.

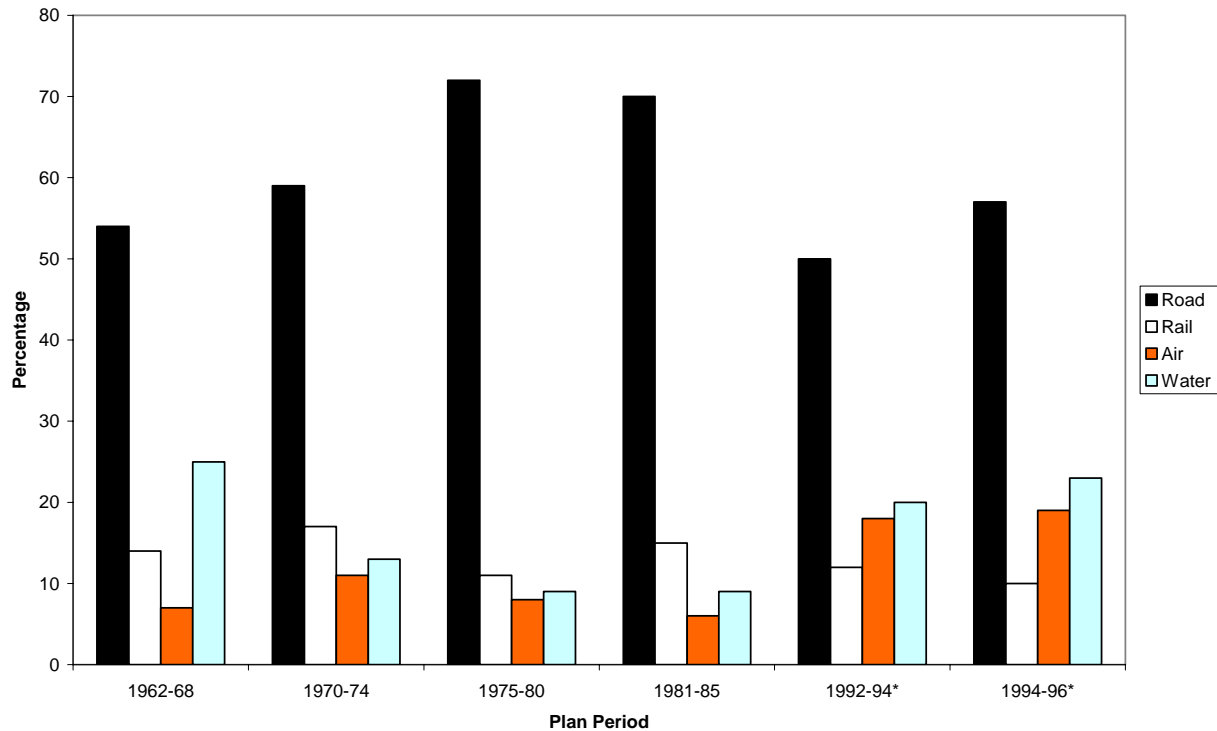
**Table 2: Modal Distribution of Public Sector Planned Capital Investment in Transport (in Percentage)**

Plan Period	Road	Rail	Air	Water
1962-68	54	14	7	25
1970-74	59	17	11	13
1975-80	72	11	8	9
1981-85	70	15	6	9
1992-94*	50	12	18	20
1994-96*	57	10	19	23

\*Rolling Plans: Percentage calculated from the various Plans

Source: Filani, 2003

**Figure 1: Modal Distrution of Planned Capital Investment in Transport**



\*Rolling Plans: Percentage calculated from the various Plans

Table 2 and Figure 1 show plan allocations and not actual expenditure on transport sector, the fact still remains that there has been a disproportionate share between the modes. The greatest attention was given to the road mode and in terms of actual expenditure; the Railways had claimed less than one-fifth of the amount spent on road transport. The results of the huge differentials in the inter-modal shares of total transport investment over the four National Development Plan periods show that:

- While railway kilometrage had remained more or less static since 1965 or so, the road network has more than doubled*
- The railways had been treated with neglect as far as improvement and modernization of its infrastructure facilities are concerned.*
- The nation has been made to pay very high social costs arising from more wasteful use of energy by road transport and huge maintenance cost due to heavy trucks engaged in road haulage over long distance.*

Although, the primary objective of public policy in the transport sector is to meet the demands of an efficient transport service at minimum cost to the economy, the pattern of investment seems to have inhibited the achievement of inter-sectoral efficiency and equilibrium. The pre-eminent position of railway within the context of transport coordination is obvious and it is really strange that urban and regional planners in Nigeria had been flat-footed when allocating development resources to the railway in the transport sector.

Also, a metroline project was planned in 1982, but was later abandoned as a result of politics and parochialism of military administration. The building of metroline would have greatly improved the transport situation in Lagos. The World Bank has indicated that the light rail project could be an alternative to the metroline. Since, automobile vehicles could no longer cope with the increased demand for transportation, a rail system, no matter how limited in scope, is preferred to any of the other means of transport (Oni, 2004).

Motor vehicles create various costs in the process of their being used within urban areas. But these are not costs being paid for by the vehicle user, they are costs borne by others. City inhabitants bear various costs for living along side the motor car; bronchial patients may suffer through vehicle exhaust fumes; office workers experience the strain of traffic noise and vibration, and society as a whole, both now and the future, will have to face the consequences of the damage done by motor vehicle to buildings of historic architectural value.

Consequently, there is a need for road-user charges in urban areas. This would involve linking moves to recover the full costs of public transport with moves to set appropriate levels of fuel taxes or road-user

charges. The option of charging efficient prices for the use of scarce urban road space, together with unsubsidized public transport, is preferable to any alternative involving unpriced road use and compensatory public transport subsidies, not only because a superior incentive structure is created, but also because a lower fiscal burden is imposed (The World Bank, 1999).

The various transport modes by which goods were conveyed from inland depots and warehouses to the seaports for shipment abroad are rail, roads and water. Available statistics revealed that the road transport mode was used predominantly for the evacuation of goods to the seaports between 1970 and 1990 and it still accounts for a very significant proportion to date.

From 1970 to 1986, road transportation accounted for 83.3 percent of goods conveyed to the seaports, while water transportation accounted for only 5.0 percent. The balance was accounted for by rail transportation. By the 1970s, the participation of the rail transport system in the conveyance of goods to the seaports had been relegated to the second place after the road transport. A decline ensued till the end of the 1990s when the use of the rail transport fell to insignificant-zero. With the introduction of pipelines, conveyor belts and suction pipes since 1987, this mode has taken pre-eminence, accounting for 62.1 percent of total goods conveyed to the seaports between 1987 and 1999 (Nigerian Statistical Association, 2000). As shown in Table 3 and Figure 2 below, in 2002, road transport delivered the largest tonnage of cargo (10,207,821 tonnes) at Nigerian Ports, followed by Suction pump/Conveyor belt (8,634,646 tonnes). 5,687,739 tonnes were delivered by Pipeline while water delivered only 693,163 tonnes.

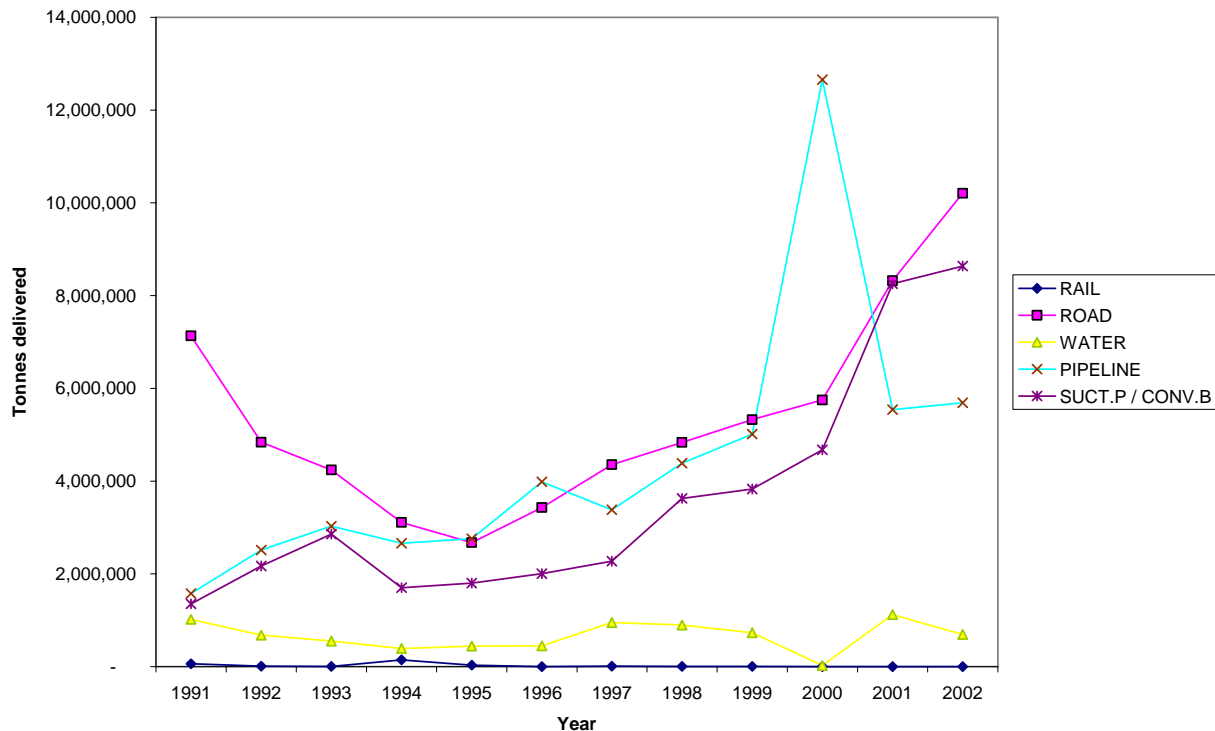
**Table 3: Analysis of Cargo Delivered at Nigerian Ports by mode of Transport (in tonnes)**

YEAR	RAIL	ROAD	WATER	PIPELINE	SUCT.P / CONV.B	TOTAL ( ALL MODES ) ( IN TONNES )
1991	63,677	7,133,728	1,020,875	1,575,526	1,355,756	11,149,562
1992	8,789	4,841,225	679,717	2,515,080	2,169,674	10,214,494
1993	6,206	4,238,377	551,143	3,028,308	2,859,557	10,683,591
1994	145,611	3,107,664	390,687	2,660,351	1,702,608	8,006,921
1995	30,754	2,676,273	442,536	2,758,826	1,799,939	7,708,328
1996	1,246	3,427,161	450,344	3,985,918	2,002,637	9,867,306
1997	8,550	4,355,007	951,639	3,381,847	2,273,361	10,970,404
1998	6,259	4,832,596	895,410	4,385,039	3,628,382	13,747,686
1999	5,088	5,323,620	729,788	5,013,869	3,830,602	14,902,967
2000	-	5,749,331	21,974	12,653,417	4,672,375	23,097,097
2001	-	8,321,285	1,124,953	5,541,901	8,253,004	23,241,143
2002	-	10,207,821	693,163	5,687,739	8,634,646	25,223,369
<b>TOTAL (1991-2002)</b>	<b>276,180</b>	<b>64,214,088</b>	<b>7,952,229</b>	<b>53,187,821</b>	<b>43,182,541</b>	<b>168,812,868</b>

NOTE : SUCT.P / CONV.B = SUCTION PUMP / CONVEYOR BELT

SOURCE : NIGERIAN PORTS PLC ( 1991- 2002 ) ABSTRACT OF PORTS STATISTICS

Figure 2: Analysis of Cargo delivered at Nigerian Seaports(1991-2002)



### Urban Transport Infrastructure

Urban transport infrastructures form the foundation of the urban transport system. The infrastructures include roads, intra city rail lines, ferry routes terminals, all the associated road complementary facilities (terminals, bus stops, service garages, road signs etc) and other facilities for non-motorised transport. Urban transport is usually road-based and its infrastructures are looked at from the perspective of roads and their complementary facilities. In some cities of Nigeria, infrastructures for rail and water are prominent.

Also, urban road infrastructures are characterized by a planning and design oriented towards the private car, poor physical conditions, poor management; poor connectivity, high incidence of misuse and a resultant low productivity. Constantly, urban transport infrastructures in Nigeria are owned and managed by government. The failure of existing funding mechanism of government accounts for the deterioration of these infrastructural facilities and the difficulty in the provision of additional ones. In virtually all urban centres in Nigeria, very little attention is paid to urban transport infrastructural provision including non-motorized modes like walking and bicycling. Interchange point, bus stops, terminals, parking facilities among others are either absent, inadequate or ineffectively located (Federal Republic of Nigeria, 1995).

In addition, there is an observable widespread misuse of the limited available urban transport infrastructures. Major roads are partly occupied by roadside traders; bus stops, where available are inhabited by destitute. Access roads are used for domestic waste disposal; roadside railings, urban highway, road and rail barriers, traffic light among others are badly vandalized. Unfortunately, law enforcement agents are incapable of arresting this human misuse of urban transport infrastructures.

A transportation system however is expected to provide a reliable, safe, comfortable and easily accessible service at reasonable costs to satisfy both temporal and spatial travel demands of the society within which it operates. Adequate infrastructure is required to achieve these service attributes. As stated by Connor (1993) the transport infrastructure needs of a city include:

- A. Bus Transport: rolling stock (buses, maintenance and emergency vehicles), terminal and depots, garages and shops, office buildings, training, road improvement for bus priority, bus stops and shelters, fare collection equipment, software for routing, inventory and analysis.
- B. Rail Transport: track, stations including fare collection equipment, escalators and elevators, rolling stock-passengers car, other rolling stock, which include work trains, rider cars and hopper cars, tunnel lighting, signals and communications, power equipments substation and circuit breakers, shops - car maintenance

and overhaul, yards, depots, security systems, safety systems- fan plants pump rooms and fire suppressant system.

In Nigeria, urban road infrastructure planning and design are oriented towards the demand of private cars to the neglect of buses and non-motorized modes. The roads of most urban centres, except Abuja, suffer from inadequate maintenance. About 60% of urban roads are in deplorable conditions. Traffic congestion increases because of the poor roads, leading to increased vehicle operating costs and non-viability of public transport (National Transport Policy for Nigeria, 2003).

According to Vandu-Chikolo (2004), as cities expand so must their road system. Cities need a basic amount of circulation space, adequate for their size, in order to operate efficiently. Early planning of, and space reservation for transport infrastructure is thus an important strategic requirement.

### **Addressing the Problems of the Rural Poor**

In Nigeria the deepest poverty afflicts rural populations, especially those living in the more remote and marginal areas of the country. Addressing the needs of these people is a particular challenge.

Trunk roads in rural areas, particularly if designed for limited access, primarily offer mobility benefits to longer-distance traffic, whether originating in the rural areas or not. For the rural poor, however, the dominant concern is basic accessibility, both to local facilities and to the primary network.

The capacity of countries to plan, fund, implement, and monitor rural roads works is often inadequate because the appropriate local institutions or policy frameworks are missing. Hence, the institutional basis for improvement must be a coherent structure defining the ownership of rural roads and the responsibilities of various institutions for development, maintenance, and priority setting. The policy basis for improvement should also be the simultaneous determination of the overall level of funding for rural roads and of the balance between new development, rehabilitation, and maintenance (The World Bank, 1999).

### **Road Development**

In Nigeria, the available road networks in cities range between 10% and 18% of the total urban land area. This falls short of normative 30% recommended by Town Planning principles. Thus, the capacity, coverage and designs of most urban road networks would appear to be inadequate for the volume of traffic using them (Vandu-Chikolo, 2004).

A nation-wide survey was conducted by Central Bank of Nigeria (CBN) on the state of highways in the country in December 2002. The survey revealed that the road network, as at December 2002, was estimated at 194,000 kilometers, with the Federal Government being responsible for 17%, State Governments 16%, and Local Governments 67%. It was also shown that most of the roads were in a bad condition, especially those in the South Eastern and North Western parts of the country. The pattern is generally the same for the roads in the other parts of the country. Some of the roads, constructed over 30 years ago, had not been rehabilitated even once, resulting in major cracks (longitudinal and transverse), depressions, broken down bridges and numerous potholes that make road transport slow and unsafe (CBN, 2002).

The survey also shows that the state of Nigerian roads had remained poor for a number of reasons. Such reasons include faulty designs, lack of drainage and very thin coatings that are easily washed away; excessive use of the road network, given the underdeveloped nature of waterways and railways which could serve as alternative means of transport; absence of an articulated road programme, and inadequate funding for road maintenance.

The National Transport Policy for Nigeria (2003) stated the road is the primary right-of-way to accommodate and ensure the safety of all modes - bus transit, automobile, walking and cycling. Hence, priority must be given to the maintenance and improvement of roadways, sidewalks and arterial roads. The objective of government in urban road infrastructure is to maintain and improve all urban roads including sidewalks and to ensure efficient arterial roads to facilitate transit and ensure safety.

### **New Trends in Infrastructure Financing**

Daramola (2003) noted that the construction of infrastructure in many countries has traditionally had a large public sector component. But the last decade has seen a fundamental shift in the paradigm of infrastructure and service provision around the world with governments retreating from being owners and operators of infrastructure and focusing more on their roles as regulators and facilitators of infrastructure services provided by private firms. Developing countries have not been left out of this novel development. In 1996, private investment nearly accounted for 15% of all investment in transportation infrastructure mostly in East Asia and Latin America, a confirmation that the concept of trade liberalization is fast gaining ground. In the last one and

half decades, the Nigerian state has steadily been giving up its control as well as deregulated some sub-sectors within the transportation industry.

According to Daramola (2003), the encouragement of public-private partnership in various forms and scales seems to be a key policy issue in financing all types of transportation infrastructure. This public-private combination will ensure:

- *Shared costs*: this will ease the burden of maintaining and expanding transportation facilities which has simply grown too great to be borne solely by tax payers and government
- *Reduced costs*: getting private entrepreneur to build and operate a transportation facility can often result in lower costs because the private sector's administrative burdens are fewer than those of government. Accountability is also more crucial in the private sector
- *Efficiency*: Actions taken by private entrepreneurs are likely to be efficient, although it may some times reflect their own requirements.

Private sector participation has been very significant in the road transport industry in Nigeria. Today, the vast majority of road transport operations belong to the private sector. It accounts for more than 90% of urban and non-urban road transport services. Certain factors have, thus far, encouraged private participation in the road transport industry in Nigeria. Also, it should be noted that in matters concerning other sectors of the transport industry, (the railways, airways, national shipping and the ports) the Federal Government exercises some measure of control in the provision of services, pricing and investment policies. The obvious reason for such control is that the Nigerian Railway Corporation, the Nigeria Airways, the National Shipping Line and the Ports Authority had, until recently, (particularly before the introduction of the 1998 privatization and deregulation policy) have been public corporations which performed both economic and non-economic functions. Thus, the government had a direct, though partial, responsibility.

On the other hand, in road transport, the governments of the Federation provide the "permanent way" and, outside some large cities, commercial road transport has been in private hands. Also there are no specific legal restrictions on entry into the road transport industry (excluding some urban services).

In terms of government control, what exists are planning and supervisory regulations consisting of vehicle registration and licensing laws, standards for awarding drivers' licenses and measures for enforcing established technical and safety standards on streets and highways (Filani, 2003).

The World Bank (1999) stated that transport must be cost-effective and continuously responsive to changing demands. Competition facilitated by regulatory reform to enable private firms to enter and exist the market more freely, forces transport supplies to respond to user's needs at lower costs. Charges for the use of infrastructure and services that reflect the full cost of that use to society are necessary for market signals to be meaningful. The commercialization of remaining public sector firms is also necessary for economic and sustainability.

### **Institutional Arrangement**

The role of the three tiers of government in the provision and maintenance of urban transport infrastructure is not clearly defined. Under the present situation, the Federal Government is responsible for the Federal routes in urban centres. Similarly, there are state and local government roads. The provision of infrastructure on these routes belongs to the respective owners of the roads.

According to Oni (2004), the present federal system arrangement puts urban transportation predominantly under the control of the local governments. Local governments manage 67% of urban roads, state governments 27% and the federal government 6% only. The local government is not only grossly under-funded, but lacks fund generating drive, technical expertise and other resources to provide for efficient urban transport infrastructure and service delivery.

Also, the functions of the level of involvement of the three-tiers of government are not clear. Their roles overlap, and confused, whereas, successful implementation of urban transport policy can only be achieved within the context of an effective, coherent and well-coordinated institutional framework.

This institutional arrangement which vests the provision, management and administration of urban transport solely in the local Government, the lowest unit and least equipped in the three tiers of government, has been the bane in the conscious effort to develop good public services in Nigeria.

### **Government's Policy Thrust in Infrastructural Development**

According to NEEDS (2004), the Governments' policy thrust is to develop and maintain adequate/appropriate infrastructure conducive to private sector-driven economic growth and development ensuing in the process. Some elements of this thrust include:

- Rapid privatization of key infrastructural services to ensure effectiveness in provision.



- Enhancing and enforcing relevant laws to improve competition and protect consumer welfare in the industries providing infrastructural services.
- Providing targeted intervention in the provision of infrastructure especially to rural areas and vulnerable groups.
- Encouraging private sector initiation and participation in the provision of infrastructure using such methods as build-operate-and-transfer (BOT), build-own-operate-and-transfer (BOOT), rehabilitate-operate-and-transfer (ROT) etc in the provision of infrastructural services.
- Providing counterpart funding for major infrastructural projects for which either the resource involvement is too high or the incentive too low for private sector participation.

Infrastructural reforms in the transport sector, as listed by NEEDS (2004) will aim to:

- ◆ Complete on-going construction of 3,000 km network of roads, and embark on any new construction if and when fund-specific assistance or finance is available to facilitate economic growth and development across the geo-political zones of the nation
- ◆ Strengthen the newly created Roads Maintenance Agency and involve the private sector in the management of roads
- ◆ Make Nigerian seaports play a prominent role in the shipping sector within the ECOWAS sub-region with a strong indigenous Nigeria private sector participation in the coastal shipping activities
- ◆ Develop a seaport with capacity to handle modern shipping activities and establish inland/dry ports
- ◆ Make our ports more efficient and competitive, with capacity to handle modern shipping activities. Also implement policies targeted at indigenous human capital development
- ◆ Rehabilitate and upgrade the railways with a view to restoring the relevance of the railways in the national transportation (bulk/haulage and human) system
- ◆ Ensuring the achievement and sustenance of world class standards in all aspects of aviation operations, including the development of indigenous manpower and maintenance capacity
- ◆ Achieve total radar coverage of Nigeria airspace and establish an effective and efficient emergency rescue unit under Federal Airports Authority of Nigeria.

## **Strategies at Sustaining NEEDS Philosophy in Transport Infrastructural Development**

The following should be adopted in transport infrastructural development. In the short run, the government should:

- 1) Enhance the capacity of the existing transport infrastructure through proper maintenance and efficient traffic management.
- 2) Ensure efficient urban traffic management through proper intersection control, better passenger pick-up and disembarking spaces, priority lanes, congestion control, etc.
- 3) Strict enforcement of traffic regulations.
- 4) Creation of more interchanges points to facilitate intermodal operations.

In the medium to long run, government should:

- 1) Expand substantially, urban and rural road infrastructure, with proper concern for needs of public transport infrastructure (railway, dedicated bus routes) etc
- 2) Promote road widening and extension in new areas as part of land use planning and development. The new roads will connect the existing road network to facilitate linkages.
- 3) Provide facilities for alternative modes -walking and bicycling. The right- of-way as shared- use facilities by all modes should be encouraged.
- 4) Develop a multimodal transport network plan for major cities. The plan should include strategies for the development of pedestrian, cycling, public transit facilities, road, rail and water transport.
- 5) Improve the effectiveness of urban planning which should take cognizance of transport implications of different land use patterns and prevent congestion inducing developments.

## **Conclusion**

It is no secret that transportation infrastructure have not kept pace with development in many Nigerian cities. In reality, the bureaucracy of the state and its attendant shortcomings coupled with the socio-economic realities of the day have raised questions on what exactly should be the role of the state in transport infrastructure provision and maintenance. A key factor that makes private participation in transport infrastructure financing essential is the need for continuous, assured managerial autonomy, which is not possible when the government retains the authority to make management appointments, operational and

business investment decisions for transport concerns. However, despite the shortcomings of state ownership, some governmental interventions are generally necessary to achieve some sort of optimum leverage in the provision of transport infrastructure.

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