

Restructuring Nigerian Road And Railway Network For Efficient Resource Distribution: Lessons From Czech Republic

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Abstract-This study unravels the debility in resource distributions in Nigeria emanating from insufficiency, improperly designed, lack of care, shortsightedness and attitude of leaders on road network and railway system which have thwarted and dislocated efficient and effective resource distribution. The over reliance on road network in Nigeria without quality roads, poor or no decent links and inadequate transportation diversification have strangled effective resource mobilisation from areas of abundance to places of scarcity. This expository study focuses on how the two transportation sub-sectors could be reformed, revived and reconstructed by borrowing a leaf from what is obtainable in Czech Republic which has the best transportation network in Central and Eastern Europe. Among the lessons from Czech Republic envisaged to help improve Nigerian road and railway networks are: adequate links of roads and railway lines to all parts of the country no matter how remote; governments of Nigeria have to plan and design railway lines involving trams, subways and metro in every state and local government areas; and railway and road network can be designed to exist together in the cities and towns so as to ensure economy of use of land.

Index Terms- *Efficient, Lessons, Network, Restructuring, Resource, Road, Rail.*

I. INTRODUCTION

Since independence, Nigerian leaders have really been interested in improving the life pattern of the people with a view to enhance development and growth of the country. This intention led to many developmental policies and programmes. The First National Development Plan launched in June 1962 has, among others, an objective of attainment of modern economy consistent with the democratic, political and social aspiration of the people. In a similar vein, the Third and

Fourth National Development Plan focused on balanced development and reduction of unemployment [1]. All these, among others, led to public investment on education, industries and transportation infrastructure such as roads and railways.

In line with the aim of investment and development of transportation system [2] posit that the enhancement of transportation such as roads, rail, sea and air provide direct benefits to users. The benefit could be economic and production efficiency in the area of product cost, product quality, or availability due to changes in labour market access, cost of obtaining production inputs and cost of supplying finished products to consumers.

[3] point that transport is considered the cornerstone of current society and investment in transport infrastructure and sustainable transport are the most discussed transport subject matters and issues in an economy. In similar views, [4] and [5] point that positive economic change and desirable development of an economy is unattainable in the absence of efficient transportation system. This is because all manners of production involve one form of transportation or the other. To all intents and purposes the benefits of efficient road and railway transportation have influence on every economic agent in both developed and developing nations.

[6] posits that the density or concentration of transport infrastructure and quality influences greatly the output of national economies as well as the quality of life of the inhabitants. Actually, good road network and railway system promote economic activities as it enhances accessibility, factor input and facilities movement in all the regions of an economy. The degree of transportation for movement of resources is an indispensable factor that is considered crucial for development of an economy. As one of the indices for

measuring the development of a country, the rural transport infrastructure development in Nigeria has been spotted as a very significant aspect for the progress of the country by connecting the rural communities to the urban places [7]. The obvious fact is that sufficient input and output distribution and circulation are highly beneficial for societal development.

Movements of resources such as raw materials, farm products, labour, manufactured outputs and inputs of production to every nook and cranny of an economy are imperative for economic revival, development and sustainability. Nigeria is confronted with myriad of debilitating factors among which is poor road network in virtually the rural and urban areas. Besides, the railway line bequeathed to her by the colonial administration was not maintained and properly managed, which was almost none functional until the current civilian government led by President Good-Luck Jonathan brought a little change. Nevertheless, efficient resources distribution is a *sine qua non* for proper utilisation of scarce resources from points of abundance to places of needs.

The world over, transport has been conceived as imperative for sustainable economic growth and modernization of an economy. Transport infrastructure sufficiency is counted among the determinants of a country's advancement in the diversification of production, trade expansion and connecting various productive inputs and markets into an integrated region, thereby bringing urban areas and hinterlands closer. A Well designed road and railway transport for instance play roles in linking villages with commercial centres; remote rural areas with urban markets and producers [8]. In addition, resources movement is advantageous for developed and developing countries. Countries interact easily due to linkages of transport infrastructure, thereby promoting easy distribution of goods produced on the basis of comparative advantage with other economies. Easy mobility of labour really encourages production efficiency as cheap labour in abundant labour country moves to labour expensive nations. It can be pointed that every increase in traveling from one area or country to another has a positive impact on labour market expansion while productivity tends to rise, other things being equal.

In spite of the positive effects of traveling and transport infrastructure, over the years, Nigeria has allowed her few road network built by the colonial masters and early leaders of the country to degenerate to the point of becoming a death trap to road users. Many road accidents are avoidable if good road network are in place and effective railway existing to reduce excessive use of road transport. Besides, the railway lines constructed by the then colonial administrators were entirely abandoned without maintenance, lack of innovation and inability to establish more linkages to other parts of the country and consequently the benefits expected from this capital infrastructure became a mirage. This situation gave rise to over reliance on roads for means of transportation, and the pressure of big trucks, lorries, trailers and cars coupled with lack of maintenance resulted to varieties of travelling difficulties. Many potholes abound in many usable roads; chasms, gullies have rendered some roads unusable, thereby constituting untold difficulties in travelling from one area to

the others. Perishable farm products and other outputs of the country and factors of production have experienced sluggish movement over the years.

The emergence of Federal Road Maintenance Agency in recent time was characterized with fire brigade approach; waited for federal roads to collapse before any work is done. This is basically due to the non-culture of maintenance in the country. Nigerians find it difficult to maintain their own property and see public facilities as government property which does not belong to any body. Many public facilities put in place mainly to give benefits to the people are left to decay without any positive actions from the people to encourage the sustainability of the property. Consequently, public facilities do not live up to its life span due to lack of maintenance [9]; [10]

Developmental bottleneck in Nigeria is associated with poor transportation network. Many hours of work are wasted in the cause of travelling within the country. Time actually is money. A good number of Nigerian workers do spend an average of three to four hours in a traffic jam due to bad road network and lack of railway system. Time lost is not easily recovered and so it is our conviction that the production forgone at the period of waiting for vehicle and traffic delays could be avoided if and only if efficient road net work and railway system are put in place.

It is often a thing of worry that our leaders travel here and there and see functional systems that need be established in our country to improve lives but feel reluctant to put such in place. Instead they would prefer frequent visit of such a place whereas such beautiful things could be established in Nigeria. It is unfortunate that we prefer wasting our income in patronizing other economies when we have all it takes to improve ours for effective patronage. However, there is gradual execution of actions by the state and federal governments of Nigeria to bring a better change but yet to reach a significant level.

Given this scenario, it is our belief that there is the need to emulate or adopt Czech Republic approach which has efficient road and railway system which is well known in Europe in order to improve our system. Life is more of learning the good qualities of others in order to improve self. The efficient road and rail transport system in Czech Republic was learnt from somewhere and Nigeria has no alternative but to emulate this country so as to restructure her road and transport system toward efficiency so as to enhance resources distribution. Czech Republic is a develop economy vis-à-vis Nigeria, but a developing nation has to copy a well-organized and desirable operational system for a change from poor milieu to a better one.

So, the main objective of this paper is to unravel how restructuring of Nigerian road network and railway system base on lessons from Czech Republic is imperative for effective and efficient resources distribution. To that effect, the paper is stream-lined thus: section two is the problem of road and railway system in Nigeria; an overview of road and railway system in Czech Republic is section three; section four focuses on lessons to Nigeria and conclusion.

II. Problems Of Road And Railway System In Nigeria

A developing economy is confronted with many retarding factors and problems of growthlessness which include among others, lack of capital overheads, poor transportation system, under utilization of natural resources, dualistic pattern of economy, technological backwardness and poverty. The rural areas occupied by a large proportion of the populace are worst hit by these problems, thereby encouraging excessive rural-urban migration with its associated creation of population imbalance and pressure of use of existing facilities in urban places. Besides, the cumulative causation effect of capital movement from the rural areas to urban places has helped to sustain poverty in Nigeria. The low attention to rural infrastructural development, especially power supply, road network and railway system have contributed to inefficient resource distribution. It is pertinent to examine the problems of these two sectors one after another.

Railway System in Nigeria: This the oldest means of transportation in Nigeria as it has the largest conveyor of goods. Railway system in Nigeria commenced in 1898 and in 1901 Lagos-Ibadan line was completed by the colonial administration. Gradually, other places were linked for easy conveyance of goods and passengers within the country. The single-narrow-gauge railway line designed by the colonial masters was the major mode of freight movement within the region. However, the railway line has been faced with a lot of problems that retarded its functionality [7]. [11] posits that the nature of the railway system in Nigeria with out of 1,788km, disgustingly, the existence of 1, 600 sharp curves between 4 and 10 degrees have reduced necessary speed to 65km/h. In addition, over 50 years after independence, the railway linkages were left as put in place by the colonial administrator. Even the main cities that are supposed to be equipped with railway system to easy off road traffic were not done. Consequently the major transportation option left to all and sundry is road involving cars, buses, trucks, motorcycle, tricycle and bicycle. This means no extension of major tracks made by the various government of Nigeria. Instead, the subsector was abandoned.

Accordingly, railway in Nigeria gradually degenerated due to financial losses, lack of maintenance and poor funding. For instance, [12], point that the Nigerian Railway Corporation recorded a loss of more than ₦83 million in 1981, and the loss has never ceased. Many scholars have noted the declining operation of Railway Corporation, hence giving more for patronage of road transport. This sustained situation gradually changed the consciousness of the masses to focus mainly on road transport as the major means of transportation in Nigeria. This situation increased trucks and trailers movement within the country with its associated hazards, excess pressure on roads designed for small vehicles and frequent road accidents.

The Nigerian railway line has poor track structure with single track narrow gauge, steep gradients, poor track equipment retarding speed. Besides, there are shortage of locomotives and rolling stocks, corruption and bad management, poor facilities and out dated technology, neglect of rail system for road development by the leaders, high rate

of management interference, numerous pensioners and unstable labour union, among others [13], [14], [15].

In spite of her meagre revenue generation, the subsector has heavy bills to settle all the time. [14] notes that its pension bills alone rose from ₦577 million in 1991 to ₦2.4 billion in 2009. Between 1995 to 2001, its average operating loss stood at 13% and rose to 34.2% between 2004 and 2008. This situation is critical for survival and sustenance of the sub-sector.

However, the new trend in the railway line introduced by the President Jonathan is a highly welcome development if such improvement should be extended to all over the country. [16] reports that the Nigeria railway modernization project was resuscitated in 2009 resulting in construction of 186km single track standard gauge railway line from Abuja(Idu) to Kaduna and Lagos to Kano. The present government has taken a giant stride when compared with other governments over the years. However, the provision of railway network as it should be, have links and access to the nook and cranny of the country is essential for the aspired goal of development of the economy.

This aspiration is not beyond attainment given the abundant resources at the disposal of the economy. Although, it is not the only need of the country but it is indispensable factor required to promote economic activity and attraction of foreign investors.

III. Road Transport System

Studies have shown that 90% of mobility of goods and commuters in Nigeria is through road transport in spite of its poor status. Generally, transport sector contributes about 2.4% to gross domestic product, but road transport accounts for about 86% of the output of transport sector. The high degree of bad roads in Nigeria has made government to spend heavily on road construction [17], [18]. The impact is still very low. This made Okonjo-Iweala [19] to point that Nigeria needs a minimum of US \$5 billion yearly for the next 10 years to maintain, expand and revive all types of infrastructure which is expected to help reduce the high rate of road accidents and stimulation of economic activity.

Repulsively, the road transport situation in Nigeria compares unfavorably with most several African countries both in terms of quality and coverage. The rural areas mostly occupied by a large chunk of the population are highly deprived of transportation infrastructure. But Nigeria claims to be the giant of Africa, which is ridiculous. In recent past, [20] points that the major road transport infrastructure in Nigeria is made up of 32, 000km of Federal High ways which include the seven major bridges across the Niger and Benue Rivers, the Lagos ring road, the third mainland axial bridge. At state level are 30,500km roads and the local roads of 130,000km. The number of roads under the control of all the three tiers of the government is in poor condition.

[21] survey of Nigerian road network showed an estimate of 194, 000 kilometers, and most of the roads are in a deplorable state especially the South Eastern and North Western part of the country. It was further noted that some of

the roads were constructed over 30 years ago and had never been adequately taken care of and so potholes, depressions, gullies and broken bridges abound. Although, over the time period there have been actions on the part of the government to improve on road network in Nigeria, much is yet to be done and so the existing status of the average Nigerian roads is an eye sore. In a similar vein, [22] points that inadequacy, weak and poor road infrastructure have tremendous effect like expensive and disgusting task of transporting goods and services from the remote rural region to areas of need, hence leading to delays, loss of man-hours and high cost of products in the long run. Loss of this nature has been estimated at ₦133.8 billion owing to bad roads and operating cost of vehicles.

This ugly situation made [23] to assert that insufficient transport infrastructure and associated services have contributed greatly to the issue of incidence of poverty across various Nigerian communities. Besides, high cost and shortage of spare parts, poor vehicle maintenance, overloading by public transporters, cum insufficient transport facilities and required services coupled with debilities experienced on the mobility of and accessibility of the masses to facilities like markets, hospitals and water sources have impacted drastically in raising poverty level.

Worthy of mentioning is the attitude of Nigerians with respect to adherence of codes, rules, guides and regulations in the use of roads. Traffic rules are hardly obeyed, especially government officials. The careless attitude and indiscriminate use of mobile phones by motorists have its own chunk of problem.

However, the existing problem is not insurmountable. It is a matter of conscientious and judicious use of public funds by all the three tiers of government with a view to restructure roads and railway system for better. In our perspective, all these problems can be resolved if and only if sufficient efforts are directed to it.

IV. An Overview Of Road And Railway System In Czech Republic

Undoubtedly, no country has a perfect state as far as road and rail transportation is concern, but some nations have a better and improved system than others. Hence, it becomes relevant to borrow a leaf from the good aspects of a nation's system in order to improve own system.

Czech has a relatively excellent and efficient road transport network with a good safety of public transportation. Czech has the most advanced transport network in both Central and Eastern Europe. Apart from adequate transportation links within the country, it has varieties of transport links to other neighboring countries and other European states, and the density of the transport network ranks Czech Republic amongst the world's most progressed nations [24].

Every area is adequately covered with one form of transportation or the other. There is availability of bus network services in most areas not accessible by train. Buses run less frequently during weekends unlike trains. Conditions

and maintenance of roads in every area of the country is generally good compared to Nigeria's situation. The total road and motorway network in 2011 and 2012 stood at 55,742km and 55,717km respectively. While motorways/expressways in operation was 1,172km in 2011 but rose to 1,193km in 2012. The major road users are buses, taxis, bicycle and motorcycle with rules and regulation which are strictly observed by all. For instance there are speed limit for cars and buses not exceeding 3.5 tons: residential/urban areas: 50 km/h (30mph), rural roads: 90 km/h (56mph), motorways and highways: 130 km/h (80mph); helmets and goggles are compulsory for motorcyclist and passengers. Motorcyclist must carry first aid kit and spare vehicle bulbs. Besides, parking system in the town is excellent. There is high degree of orderliness, although not perfect but worthy of emulation. Czech Republic has a very decent rail network and it is considered to be the most comprehensive in Europe. The two main types of trains are rychlik which moves with a relative speed and stops only at major towns and Osobni that stops at every station with a lesser speed [25], [26]. The density of railroad network is 0.12km per square km and the highest when compared to Austria, 0.06km, Germany, 0.09km, Hungary, 0.08km, Poland, 0.06km, Slovak Republic, 0.07 and United Kingdom, 0.07km per square kilo meter [24]. This gives the country transportation options, effectiveness of movement of inputs of production and efficient resources distribution.

Rail way system is well developed in Czech Republic with the largest and busiest railway station in Praha Hlavni drazi (Prague's main station). The Country's railway is linked to countries like Germany, Serbia and Switzerland and almost all the cities in Czech Republic. The pattern of designed railway promotes easy businesses and factor of production movement. This is quite unlike Nigeria that the road and rail system are limited to few areas in the country. In addition, the Prague subway is the fastest, decent and reliable means of transportation in the city. It has three mainlines with 57 stations. The extent of transport provision in Czech Republic is highly satisfactory. Several tram systems operate in various cities. Prague has a 24 hour tram system with relevant stop stations which make movement quite easy. Each tram has a number which runs on a certain route. Passengers hardly become stranded because of the way tram operates, especially in Prague. Metropolitan railways are urban electric transport system with high capacity and high frequency of service. It is optimal public transport modes with high capacity network service. Investment in Metro involves huge capital outlay but required mostly in big cities where there is high demand to cover cost. It is well developed in Czech Republic. In actual fact, the entire Czech Republic is completely covered with varieties of modes of transportation (trains, subways, trams, buses, taxis, air travel and ferries). This makes business and economic activities easy [27], [28].

The economy of use of land in transportation planning in Czech Republic is quite interesting. Trams and cars run on same road with building on both sides of the road in the cities and parking spots still provided unlike what is obtainable in Nigerian cities where no parking place is provided and any stop on the way to pick items in shops, the vehicle is towed

away by untrained public servants or touts. Besides, there is high degree of obedience and observance of traffic rules by motorists and pedestrians in Czech Republic. Besides, there are sufficient traffic signs for all manners of transportation and pedestrians in Czech Republic and strict compliance is the slogan.

Trains and commuters move on schedule to avoid waste of workers precious time. The high degree of time consciousness among the citizens of the Czech Republic is worthy of emulation.

V. Lessons To Nigeria

Life offers us opportunities to learn and improve. Emulation and application of workable and efficient approaches and strategies are a way of life. Changes capable of enhancing development and transformation often start from ideas and actions of someone or activities of nations. Considering the situation of Nigerian roads and railway system, it is our sincere conviction that application of lessons from Czech Republic with respect to road network, varieties of railways and a change of attitude will help reposition ours for better resource distribution and encouragement of development.

Given the workable design in Czech Republic, it is not out of place for us to rebuild the road network existing in Nigeria and ensure adequate links to all parts of the country no matter how remote, just like Czech Republic. This has the benefit of encouraging easy distribution of inputs and outputs to and from remotest areas in the country to areas of needs.

The governments of Nigeria have to plan and design railway lines involving trams, subways and metro in every state and local governments considering the nature of the city and environment so as to have varieties of rail movement as it is obtainable in Czech Republic. Also, the neighboring countries to Nigeria such as Ghana, Benin Republic, Cameroun, among others have to be linked with railway system and functional road network to enhance export and import.

Railway and road network can be designed to exist together in the cities and towns so as to ensure economy of use of land. Modern trains are required in Nigeria. Besides, parking lots should be incorporated in road and railway design to avoid unnecessary embarrassment by touts.

Speed limits for trains and vehicles, traffic codes, rules and regulations have to be adequately enforced and obeyed by all including government officials and security agents like is done in Czech Republic. Also, it is necessary to learn movement on scheduled time.

VI. Conclusion

The study has examined the difficulty of road and railway system in Nigeria and the pattern of same system in Czech Republic worthy of emulation to encourage resource distribution and development of Nigeria economy. The degree of problems of these two types of transportation in Nigeria has over the years retarded efficient input and output distribution. A positive change and adequate restructuring of road and railway due to lesson from Czech Republic is considered

imperative and critical in having a better Nigerian transport system.

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