

A TRANSPORTATION STRATEGY FOR REGIONAL DEVELOPMENT:  
A CASE FOR NIGERIA

by

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## ABSTRACT

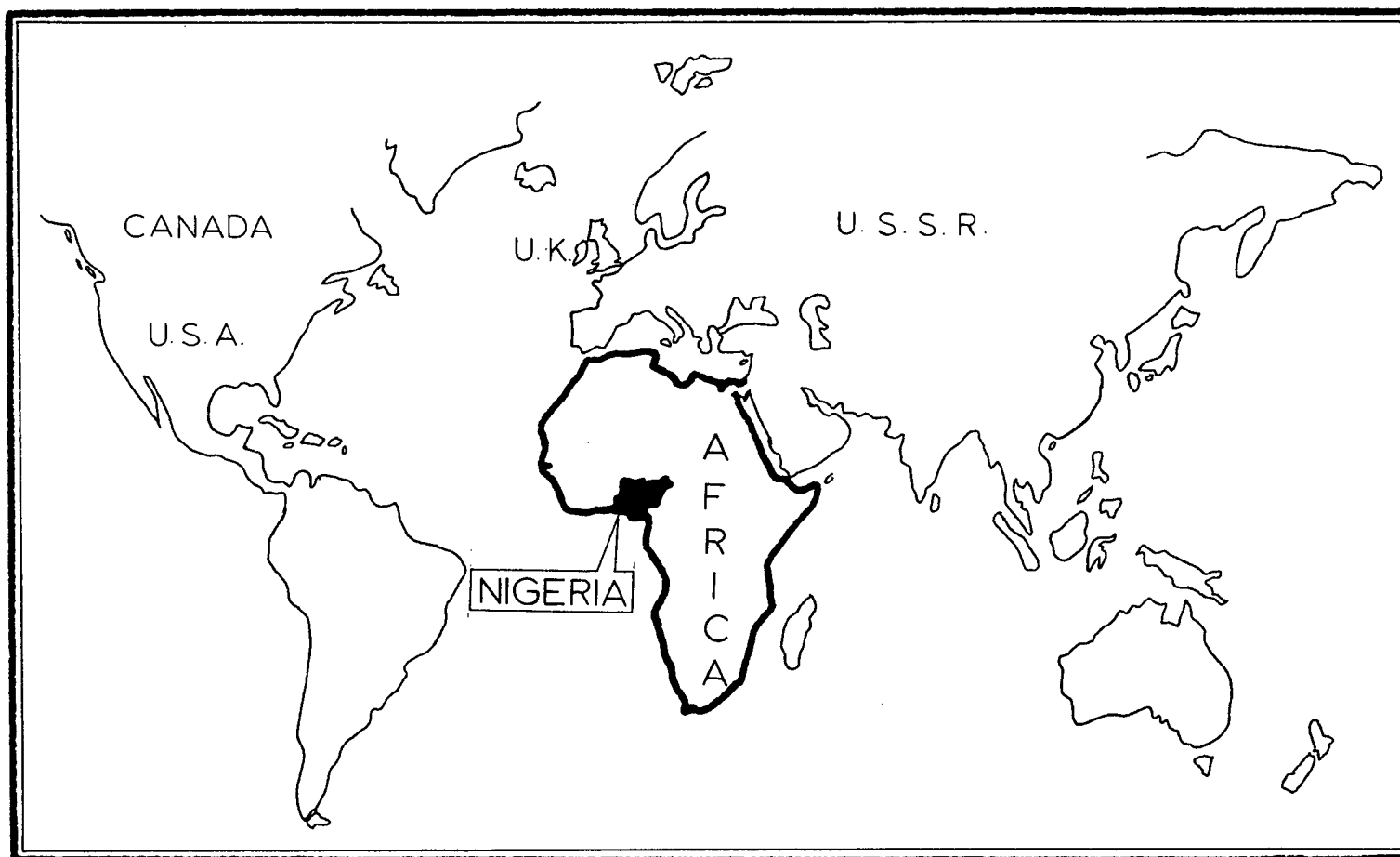
Regional development is currently a major concern of governments in the developing countries - Nigeria included. The basic emphasis of regional development in these countries is the improvement of "quality of life for all citizens as development progresses" (Federal Republic of Nigeria: Third National Development Plan, 1975 - 80, Lagos, 1975, p. 291). In order to achieve this objective, emphasis is usually placed on the rural sector of the economy - where a majority of the citizens still live and are employed. The improvement of this sector is also the focus of this study.

There are many strategies which are capable, at least theoretically, of improving conditions in the rural areas but the main emphasis of this study is the development of rural transportation as a means of developing the rural areas. Transportation is viewed as a necessity in any human settlement as people and goods have to move from one place to the other, for economic, social and political purposes. The first objective of this study is the establishment of the relationship between transportation and rural development - i.e. that there is a rural demand for transportation. If this demand exists, what mode of transport is most likely to satisfy that demand? At present in Nigeria, roads seem to be dominating other modes because of its characteristics. In this study, transportation is not seen as the sole agent for rural development. For a transportation strategy to be successful, it has

to be coordinated with other development strategies.

The problem of providing adequate rural transportation is identified as an institutional one. The institutional framework within which transportation is provided in Nigeria is then examined and problems identified, especially those related to rural transportation construction and maintenance. Especially apparent in the deficiencies of the existing administrative structure is the lack of coordination which it permits. This lack of coordination of transportation policies exists between different ministries of the same government and between different levels of government - i.e. both horizontally and vertically. For this lack of coordination, it seems that the rural roads are the most vulnerable.

In view of this institutional problem, a modification of the existing structure is recommended, which gives greater emphasis to the development and maintenance of local roads in conjunction with the development of other modes of transportation for the country. The major modification is in favour of reducing the existing responsibilities of Local Governments in road transportation construction. This implies that the Federal and State Governments would have to take more shares if all types of roads are to be developed - i.e. providing good transportation in the rural areas.



Map 1.      Location Map

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"Transportation has special significance because of the pervasive role of mobility in facilitating other objectives. Transport is a necessary ingredient of nearly every aspect of economic and social development. It plays a key role in getting land into production, in marketing agricultural commodities, and in making forest and mineral wealth accessible. It is a significant factor in the development of industry, in the expansion of trade, in the conduct of health and education programs, and in the exchange of ideas."

(Owen, Wilfred: Strategy for Mobility,  
Transport Research Program, The Brook-  
ings Institution, Washington, D.C., 1964,  
p. 1.)

## CHAPTER I.

### INTRODUCTION

#### Regional Transportation Planning:

The concept of Regional transportation planning has existed for some time and has manifested itself in various ways. Most regional planning and development theories involve regional transportation planning as well. For example, most regional economic development theories, like, trade or location theories, are based on the assumption that the region is accessible to the 'outside world' (Friedmann and Alonso (ed.): 1975; pp. 41-45 & pp. 66-73). Transportation costs are indicated as an important factor in industrial location and marketing of produce. Another main factor responsible for the concern for regional transportation planning is probably that "the planning and decision-making process for the provision of transportation facilities has not been well structured for achieving balance and coordination in transportation" (DeSalvo: 1973, p.1).

For economic development of any region, availability of transportation network for people and goods is one of the basic infrastructural requirements (Friedmann and Alonso (ed.): 1975, p.589). It is believed that by "moving goods and people from one place to another, transport facilitates economic growth in these places and along connecting routes".

This developmental role, which has been assigned to the transportation sector, has contributed to the importance of this sector among governments all over the world. The relative resource allocation to the transportation sector, compared to other sectors of the national economy, is an indication of the importance ascribed to the transport sector. In a developed country such as the United States of America, a significant amount of the national investment, about \$200 billion annually, is allocated to the transport sector (Friedmann and Alonso (ed.): 1975, p.588). Similar, if not more, emphasis is given to the transportation sector in the developing countries. For example, the transportation sector accounted for about 20.0 per cent of total national capital resource allocations in the current development plan for Nigeria (Federal Republic of Nigeria: 1975, p.53). This sector is by far the single most important sector judging from capital resource allocation to other sectors.

Despite this awareness of the importance of the transportation sector, some basic problems still hinder the national developmental role of transportation; especially in the developing countries. There are still many areas which are not served by inadequate transportation facilities. These areas are similar to the lagging or depressed regions of the developed countries (Hoover: 1971, pp.262-263). They are relatively isolated from the national system due to lack of adequate communication and transportation networks. The develop-

ment of these areas is partly dependent on the availability of transportation facilities. In view of this, the present structure for the provision of transportation facilities would have to be reoriented to facilitate easy access to these 'depressed' areas.

There is a call for adequate planning and the improvement of decision-making process, especially at the national level. The institutional problems at the federal level have implications for effective planning and coordination of transportation developments at the state and local levels. Since much of transportation crosses state and local boundaries, strengthening the decision-making role of the state and local governments is not sufficient. Some kind of national decision-making structure is required, and the development of such a structure is a concern of this study. The basic question here is how can the Federal Ministry of Transport and the related agencies be organized to meet the needs for transportation in different parts of the country more effectively. An answer to this question is approached through an examination of the existing pattern of organization, especially the division of powers among the several levels of government. The administrative problem(s) which may be responsible for the lack of adequate transportation facilities in many parts of the region is identified, and a strategy for dealing with these problems is suggested.

### Definition of the Region:- The Study Area:

The definition of a region is usually necessary in a study which focuses on regional planning. Many types of regions can be identified depending on the purpose to be served. In some cases, regions are defined in terms of political units while economic activities form the basis of others. The province of British Columbia in Canada, or Kwara State in Nigeria, is an example of the former while the Appalachian region, in the United States of America, is a typical example of the latter. Even within these broad categories exist different scales of regions. As an example, many smaller administrative regions form the British Columbia region. This being the case, it can easily be said that a region is defined from the point of view of specific planning goals. In this study, therefore, a planning region is viewed as a "geographic space organized for the realization of the objectives of a planning political authority" (Hoyle: 1973, p.26). This suggests that a region can be an area within a national geographic space, the nation itself, or a group of nations. Throughout this study, the notion of a region applies to the rural areas of a nation. Nigeria is used as a study area and inferences may be drawn for other developing countries in their struggle for economic, social and politico-cultural development.

The word 'development' is another term which requires a definition within the context of this study. In many instances,

purely economic criteria - e.g. Gross National Product (GNP), is used as a measure of development (for detailed discussion see Olatunbosun: 1975, pp.37-39). This is not an adequate definition of development because "development involves more than per capita income growth" (Olatunbosun: 1975, p.39). Growth, in terms of GNP and per capita income, is only an important economic dimension of development, and whatever its importance, it is misleading to use it as a substitute for development (Olatunbosun: 1975, p.159). For development therefore, the socio-cultural and political betterment of the citizens are important components. Increased Gross National Product alone does not necessarily mean that a nation is developing. The distribution and utilization of the increase to the betterment and enjoyment of the entire population is also an important consideration. A summary of this discussion is that while increase in GNP may be an indicator of development, it does not constitute development by itself.

The fulfilment of the economic and socio-political aspirations of the citizens or inhabitants of the region are basic factors constituting development. Development will usually involve a significant structural change in the society rather than just improve the income of a few urban residents. At present in Nigeria, there is evidence showing a substantial and widening rural-urban income differential, with rural incomes usually more than 50 per cent lower than urban incomes



(Olatunbosun: 1975, p.40). Furthermore, in view of the fact that a majority of the people in Nigeria are still rural (80 per cent of the population according to Olatunbosun, pp. 6 & 7), the goal of development should be to achieve a rapid growth in output that is equally distributed to the mutual advantage of both the urban few and the rural majority. Development then implies that rural economy has to be stimulated as an integral part of the overall economy.

#### Basic Assumptions of the Study:

One of the basic assumptions of the integrated approaches to transportation planning and management is that transportation is a single service or a single system which can be analyzed on a unified basis (DeSalvo: 1973, p.380). This assumption is accepted here without questioning. It is the belief of this author that each mode of transportation is related and dependent on each other in an adequate transportation system.

Another assumption of this study is that even though different levels of governments and agencies are responsible for the provision and maintenance of transportation facilities, a proper balance of the powers and activities of these governments and agencies will enhance the improvement of the transport sector. It is also assumed that the improvement of national rural transportation network will bring about overall national development. Attempts would be made in this study to establish whether the organizational changes proposed would result in the improvement of the existing conditions in Nigeria.

The basic premise of these assumptions is that transportation is needed as a basic infrastructure for national or regional economic growth. With proper coordination this growth will bring about national development.

#### Objectives of the Study:

There are several problems that can be identified in the transportation sector of any developing country. Nigeria is an example. The analysis of these problems is one objective of this study. Problems will be identified as it concerns the institutional framework within which transportation planning is conducted in Nigeria. The understanding of the existing institutional structure, identification of problems and solution recommendation are the basic objectives of this study. Generally speaking the objectives of this study can be stated as follows:

- a) To show that rural transportation is an important factor for regional development in Nigeria;
- b) To analyze the problems of the existing institutional framework for transportation in the country;
- c) To propose a strategy for improving rural transportation, in view of the identified problems.

The first objective concerns itself to the theoretical development framework within which a rationale can be found for regional transportation development. The second and third

objective is focused on application of theory to the existing situation in Nigeria.

#### Limitation and Scope of Study:

In any developmental study, it is a very difficult task to cover every aspect. In view of this, certain limitations exists for this study. In a general sense, this study is focused on rural road transportation and, more specifically, it is concentrated on the institutional arrangement for road transportation in Nigeria. The role of transportation in development and the potential for such a role in Nigeria is explored.

A major limitation of this study is the amount of data available for analysis. Very limited data is available for many aspects of development in Nigeria when data sources of the developed countries are used as standards. The reliability of data, even censuses, are always questioned as is brought out by Theophilus Okin below:

The mature scholar who weaves into his research a scarlet thread by numerical symbols and analysis to brighten his study does so with little fuss or intellectual ostentation, and with him none should quarrel. The results of his labors clearly demonstrate the importance of quantitative methods. In Africa this scholar is handicapped by lack of sufficient and reliable statistics, especially in West Africa....The comparative absence of statistics is a fact of life in Nigeria, and one must accept it as a regrettable but unavoidable reality for a number of years to come (Okin: 1968, pp.23-24).

This situation is still the same today. Most of the developmental statistics still employed in the country are based on the 1963 national population census, although they may be out of date. A more recent population census in 1973 had to be cancelled for a number of reasons. In view of all these, a major constraint exists as to the amount of data which can be incorporated into this study. Examples from other countries of Africa, especially West Africa, may often be used to illustrate a number of discussions in this study.

#### Sources of Data:

Due to the limited sources available for data collection in this study, the primary sources have been books and publications in various libraries in Canada, and some government documents, especially the current national development plan for Nigeria. In a few instances, it is necessary to rely on personal experiences in the country. This is however minimized to situations where no other sources of validating the experience exists for this study. Under normal circumstances, direct contact with the Federal Ministry of Transport in Nigeria or a field survey would have been incorporated into the data sources.

#### Outline of the Study:

In order to achieve the objectives of this study, it has been divided into four major chapters. The first chapter,

after the introduction, is concerned with establishing the importance of road transportation in regional development. Experiences from other countries pertaining to the developmental role of transportation are constantly used for illustrative purposes. The subsequent chapter deals with an analysis of the major transportation problems in the country, with strong emphasis on the institutional arrangement, and lays the groundwork for the fourth chapter. In the fourth chapter, a strategy for the organization of transportation planning, to the benefit of rural development, is proposed. In the last chapter, observations and conclusions from this study are stated.

## CHAPTER II

### TRANSPORTATION AND RURAL DEVELOPMENT

#### Introduction

The rural sector is a very important component of many developing countries. For example, the regional development policy stated in the National Development Plan of Nigeria gave priority to rural development (Federal Republic of Nigeria, 1975, p.291). The concern for the rural sector is brought about by the low level of economic activities which in turn affects the social and cultural well being of the rural people (Olatunbosun, 1975, p.106). The need to improve the "quality of life of all citizens as development progresses" is then a major priority of regional development in the developing countries (Federal Republic of Nigeria, 1975, p.291).

The problem of regional disparity is not unique to the developing countries. In the developed countries, there are also evidences that the process of economic development does not, at any stage, affect all the regions of an economy equally (Olatunbosun: 1975, p.151; and Friedmann and Alonso (ed.): 1975, pp.539-542). There are lagging regions even in the developed countries as evidenced by the concern of the Canadian government for the Atlantic provinces (Tyrchniewicz and Tañgri: 1970, p.58) and the Appalachian region in the United States of America (Friedmann and Alonso (ed.): 1975, p.590). The lagging

regions everywhere present very grave problems in the attempt to stimulate some economic dynamism in these regions. For instance, it is shown that "it is not even clear whether or not a more appropriate policy would be to encourage the out-migration of people and industry from the region, since the apparent magnitude of investments needed far outstrips any reasonable estimates of probable benefits" (Tyrchniewicz and Tangri: (ed): 1970, p.56).

This chapter is an attempt to show that the promotion of regional growth by providing incentives within the regions is a preferable strategy for the developing countries. Such a strategy is faced with the problem of determining a package of investments and policies for assessing regional potentials. In developing this strategy many considerations have to be noted since these regions already exist within a certain pattern of trade, culture, and institutional arrangements. These will be explored in relation to regional development in Nigeria in later chapters. In this chapter however, emphasis is on the theoretical framework and relationship of transportation to regional development in the developing countries.

### Self Reliance:

The concept of self-reliance is now becoming popular in the developing nations (West Africa: Jan. 1978, p.51). The adverse effects of drought in the Sahel region of Africa has brought about the concern for "self sufficiency in the pro-

duction of millet, sorghum, maize, wheat, rice, sugar-cane, meat and fish" (West Africa: Jan. 1978, p.51). This shows the need to put priority on agricultural production which is also a main income source in the rural areas (Olatunbosun: 1975, p.20). There is then no doubt that the time has come for the improvment of rural conditions, at least to a level near the urban living standards. Therefore a reorientation of policy foci is called for in many developing countries. In view of this, the improvement of the economic base of the rural areas is of paramount importance.

The development of the rural areas may not only be dependent on the self-reliance concept. Regional economic development theories such as the location and economic base theories show that production for the 'outside world' is an important element for development. (For details see Hoover: 1975, pp.17-18 and pp.207-243; also Friedmann and Alonso (ed.): 1975, pp.332-357.) For instance, Hoover states:

One approach to an explanation of regional growth is that of the so called "economic base". The essential idea is that some activities in a region are peculiarly "basic" in the sense that their growth leads and determines the region's overall development; while other ('non basic') activities are simply consequences of the region's overall development....The usual economic base theory identifies basic activities as those which bring in money from the outside world, generally by producing goods or services for export" (Hoover: 1975, pp.218-219).

This statement is supported by Charles Tiebout when he wrote



that a region's growth is closely tied to the success of its exports and may take place either as a result of the improved position of existing exports relative to competing areas or as a result of the development of new exports" (Friedmann and Alonso (ed.): 1975, p.348). It is therefore clear, from the above, that production for outside market as well as production for satisfying internal demands are very important for regional development. Concentration on any one of them, i.e. self-sufficiency or exports, should not be carried to an extreme. Policies should be structured in such a way that both complement each other for the benefit of regional economy. This being the case, the specific question to be raised here is: How is investment in transportation to enhance rural development? The answer to this is an objective of this chapter.

a) Provision of Rural Employment Opportunities:

Development policies in many developing nations is concentrated on the urban sector. The distribution of developmental resources roughly, if not entirely, coincide with spatial patterns of modern urbanism (O'Connor: 1971, p.145). This developmental trend is contrary to the usual objective of expanding productive employment and greater equity in the distribution of the benefits of growth (World Bank: Feb. 1975, p.16). For instance, "of the population in developing countries considered to be in either absolute or relative poverty, more than 80 per cent are estimated to live in rural

areas" (World Bank: Feb. 1975, p.4). It would only seem logical therefore that more emphasis be given to the provision of rural employment opportunities. Instead emphasis is given to heavy industrialization alone which can no longer be regarded as the panacea for the developing countries. Their developmental policies should be reoriented toward the belief that "without rural development there can be no sound or substantial basis for a nation to develop" (Shaver and Fischer, in Cento: 1975, p.160). This is partly supported by the World Bank. In other words, rural development ought to constitute a major part of the development strategies of the developing countries, if a large segment of those in greatest need are to benefit (World Bank: Feb. 1975, p.16).

Labour surveys in Africa show that agricultural employment is the principle occupation for 75 to 85 per cent of the rural population; "with the partial exception of some relatively advanced countries, and areas close to cities, almost everyone has some connection with agriculture" (World Bank: Feb. 1975, p.21). Data concerning rural activities, though scarce, show that agriculture is the most important source of income in the rural areas. For example, in Nigeria "over 80 per cent of the rural people are engaged in agricultural and pastoral activities" (Olatunbosun: 1975, p.5). In view of these, the question is how will the provision of better transportation help the agricultural sector which employs a

majority of the rural people. In the absence of any specific data for Nigeria, experiences from other countries will have to be sufficient to show the potential of transportation.

The best approach to this problem is to take an example from another West African country which may be assumed to have similar economic, socio-cultural, and political structures as Nigeria. An experience from Ghana will be proper in this wise. B. M. Niculescu carefully outlined how the construction of roads help increase the production of food and agricultural employment in Ghana (West African Institute of Social and Economic Research: 1956, pp.63-73). In the study, Niculescu stated:

There is, nevertheless, little doubt that one of the main reasons for the disappearance of local, as opposed to overall, food shortages has been the rapid increase in communication facilities throughout the country. The various, sometimes fairly large, bits and pieces still existing in isolation immediately after the war and making up the administrative unit known as the Gold Coast have today been to a large extent integrated into one single exchange area....This is due in part to the development of a fairly good main road system and in part to the expansion in the number of lorries" (Niculescu: 1956, p.70).

The role of transportation in bringing more land under cultivation was documented in this article. The rural areas in many countries suffer from limited access to natural resources, especially productive land for agriculture (World Bank: Feb. 1975, p.21). In Ghana, with the construction of feeder roads, "the number of roadside villages within 50 miles

of Accra supplying the town with foodstuffs increased by about 50 per cent between 1952 and 1954" (West African Institute of Social and Economic Research: 1956, p.72). The number of people engaged in agriculture also increased with the construction of the feeder roads, and more land was made accessible. In concluding this section, it is important to state that similar experiences have been documented in many parts of the developing nations (Soberman: 1966, deals with a Venezuelan case; and Tripathi: 1972 deals with an Indian case). While the specifics differ among these studies, and while many variables are involved, it is not far fetched to conclude that "the total effect of new roads in developing countries is indeed profound" (Stanley, in Ekistics: Jan. 1972, p.59).

b) Facilities and Services in the Rural Areas:

Though agriculture provides most of the work and incomes in rural areas, non-agricultural activities are important supplementary sources of income for rural households (World Bank: Feb. 1975, p.22). A few people in the rural areas are engaged in these non-agricultural activities which include textiles and clothing industry, metal work, pottery, dyeing, calabash, and leather working (Olatunbosun: 1975, p.19). The objective of expanding this sector of the rural economy is a concern of governments, and it has led to the rural economic diversification policies of many countries (e.g. Federal Republic of Nigeria: 1975, p.67). In many cases the diversifi-

cation strategy involves the location of small scale industrial activities in the rural areas. However, in these industrial location strategies in the developing countries, entrepreneurship and technical skills are usually neglected (Friedmann and Alonso (ed.): 1975, p.626). Managers and technicians prefer to live in the major cities for easy access to employment, facilities, and services. These people have to be induced to the rural areas while the rural labour force is given an opportunity of training.

The provision of reliable transportation network for the rural areas and effective links between all categories of settlements can act as an incentive for the location of industries and other 'necessities of life' by reducing transportation costs. Von Thunen and others did some work in this field, showing how transportation costs affects production (Hecht, in Ekistics: July 1976, p.44). The higher the transportation cost, the lower production tends to become. The importance of transportation in regional development is clearly brought out in the statement below:

Our topic today concerns the relationship between transportation and regional growth. It is an important subject, for developments in transportation underlie a great deal of the change that has been occurring in the pattern of regional growth in Canada. A major new highway, such as 401 in Ontario, can shape the pattern of industrial development in the entire southern half of a province. The location of major new airports can affect the growth of the entire region in which they are located. The introduction of the jumbo jets or the construction of ports to handle containerized shipping can have

similar far-reaching regional effects" (Tyrchniewicz and Tangri: 1970, p.2).

Therefore, transportation can be used to stimulate economic activities in the low-income areas of the country. Also, good transportation networks in the rural areas may help attract health and educational facilities which are presently lacking in many parts of the rural areas. It has been shown by some authors that good health and better education facilitates economic growth and development by contributing to the quality and productive potential of the people (Olatunbosun: 1975, p.152). In order to raise the health standards of the rural population in Nigeria, Olatunbosun recommended the use of mobile medical units (Olatunbosun: 1975, p.153). For this recommendation to be practical, roads or some other mode of transportation is needed in the rural areas. In conclusion therefore, good transportation network is needed in the rural areas to make facilities and services more accessible to the rural populace.

#### The Potential of Transportation for Achieving Rural 'Objectives':

The marketing cost of products has always been considered as part of production cost (for example see Olatunbosun: 1975, pp.109-112 and Hecht, in Ekistics: July 1976, p.44). In fact location theory, according to Von Thunen suggested that if better transportation brings the market within economic reach of a subsistence economy, one would expect the subsistence

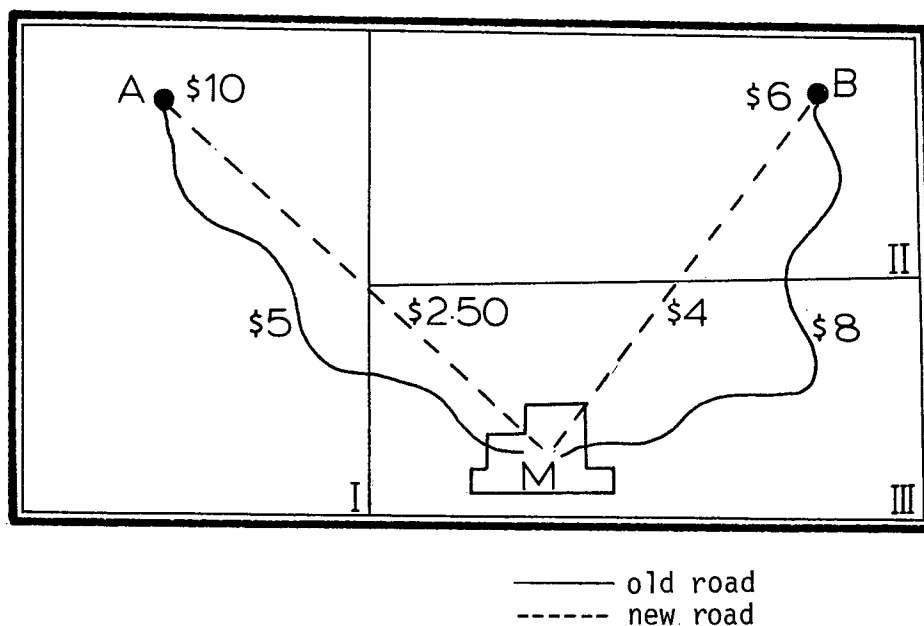
economy to change (Hecht: 1976, p.44). If a region is to compete with other regions in supplying produce to the 'outside world', comparative advantage of each is important (Kraft et al.: 1971, p.12). These authors stated that what determines the volume and direction of a region's exchange is "its efficiency in manufacturing and distributing its goods at an advantage over other regions" (Kraft, et al.: 1971, p.12). This in effect means that there are two components to that region's growth: a production advantage and a transportation advantage. Therefore the role of transportation in economic development consists of providing a region with an economic advantage relative to other regions, enabling it to secure a larger share of the national and/or international demand for certain products (Kraft, et al.: 1971, p.13).

a) Marketing of Produce:

As has been pointed out, the rural areas of most developing countries are agricultural in nature. In order to improve conditions in this sector, incentives should be offered for better agricultural production. In view of the trade and location theories mentioned above, improved transportation will have some positive effects. Greater access to market for agricultural products may reduce transportation costs, thereby acting as an incentive due to greater profit (Tripathi: 1972, p.24). The effects of changes in transportation costs on the interregional distribution of activities can better be shown by the following example from Kraft and

others:

Say that a country consists of three regions, I, II, and III. With respect to a particular commodity, oranges, for instance, two of the regions are in a situation where they can produce this commodity, the third region being the consumer of oranges. Regions I and II can grow oranges at A and B, respectively, at costs of \$10 and \$6. Clearly, Region II (which, we might assume, has the same spatial relationship to Region III as Region I) has an advantage in growing oranges. For both regions, assume that the truck lines connecting the producing centers to the market are archaic, and are characterized by high transportation costs.



### Illustrative Example of Comparative Advantage

Further assume that it costs \$8 to move oranges from B to M and \$5 from A to M (although in straight line  $AB = BM$ ). Although the BM line is more inefficient than AM, this inefficiency is more than overcome by the price differential between A and B (so that Region II will specialize in orange growing, since at the market, its products will sell at a lower price, 14, as opposed to 15 for products of Region I. It is, however, possible for Region I to improve its system and



to establish a more direct trunk line, which would, for instance, cut transportation costs by half. In that case, the advantage of Region II has been destroyed and A will now grow oranges since at the market its products are cheaper (12.5 Vs.14). This is true only if Region II does not retaliate, by also establishing a more direct line. In that case, Region II would regain its advantage (10 Vs.12.5) (Kraft, et al.: 1971, pp.13-14).

This example clearly shows the advantage of better transportation in influencing production. This however should not be taken as a substitute for inducing production cost at the site (region). If on-site production cost is too high, no amount of transportation improvement will induce more production. For instance, in the above example, if on-site production cost is greater than \$14 at A, the improvement of transportation will have no effect since B will still be at an advantage. In conclusion, therefore, transportation becomes a critical factor in regional growth since it determines the extent to which an area can capitalize on its economic endowment for generating exports. In the developing countries, as in other countries, it can be said that a very important need of the farmer is to be able to market his produce at a place where he may secure a profitable price for his produce (Tripathi: 1972, p.24).

#### b) Movement for Socio-cultural Purposes:

Transportation needs in any community extends beyond economic considerations. In the rural areas, transportation is needed to attend fairs and festivals (Tripathi: 1972, P.26). While transportation linkages are needed to facilitate the

movement of produce to market, intra-rural movement ought to be facilitated in order to enhance relationships within the rural areas. For example, in Nigeria, there is evidence showing that "rural-rural migration exists in several parts of the country" (Olatunbosun: 1975, p.32). The cause of this type of migration is attributed to population pressure on land. The fact that rural-rural movement is an important phenomenon in Nigeria is brought out by the statement below:

Some landless farmers, who would still like to continue farming, move to other rural areas where land could be obtained for farming on perhaps a share-cropping basis. Movements of this nature occur across the Niger from the East-Central to the Mid-Western State. Some farmers from the over-crowded areas of Udi and Awka, as well as from Isoko district in the Niger Delta, cross the Niger at Onitsha and engage primarily in the cultivation of yams and Cassava for sale to the neighbouring urban markets of Onitsha and Asaba (Olatunbosun: 1975, p.32).

While this may seem a movement for purely economic purposes, social considerations necessitate these rural-rural migrants to return to their original villages. For instance, it is shown that due to the seasonality of rural employment and other socio-cultural activities, many of the rural-rural migrants are those who aim at achieving a certain goal before going back to their own villages (Olatunbosun: 1975, p.31). Furthermore, the fairs and festivals in the villages, attract many people from other villages (for detail, see Tripathi: 1972, pp.26-27). All these activities require a form of transportation within the rural areas.

c) Other Uses of Transportation in the Rural Areas:

It has been shown that agriculture is a very important source of income in the rural areas. Rural development will therefore include the improvement of the agricultural sector. In order to improve conditions in the rural areas, many agricultural inputs and information as to the potential of the area should be made readily accessible to the rural population (Hoyle: 1973, p.216). Fertilizers and pesticides have to be brought to the rural areas and information concerning new varieties of crops and new methods of cultivation also have to be available to the farmers if their production is to improve. These require a very reliable form of transportation, especially in the developing countries where face-to-face contact is still more desirable (Hoyle: 1973, p.217). Extension officers are usually required to carry innovations to the rural areas and a good network of roads will be required to facilitate the duties of the extension workers.

Conclusion:

The regional impacts of transportation, in the developing countries, have been surveyed from the theoretical point of view. Some empirical evidences have been used to illustrate certain aspects of this chapter, especially where other means of establishing a point is not readily available. Basically, the theory here relates growth to regional exports but it also indicates that other intra-regional activities are necessary

for regional development. This theoretical survey shows that transportation becomes an important factor in regional development because

- a) it determines the extent to which an area can capitalize on its economic endowment for generating exports (Kraft, et al.: 1971, p.23); and
- b) it facilitates intra-regional movements which are necessary for socio-cultural purposes.

It can therefore be said that the agricultural sector does not only suffer simply from the accessibility of land but also from the inadequate facilities for moving what is already produced. "Farmers have no incentive to grow surpluses when they know from experience that what they grow cannot be moved. Isolated communities remain ignorant of market opportunities or of new ideas and new techniques, for information, like everything else, travels slowly on mud roads or primitive trails" (Owen: 1964, p.5).

### CHAPTER III

#### TRANSPORTATION PROBLEMS AND POLICIES IN NIGERIA

##### Introduction:

Over the last five decades or so, the developing countries have experienced a significant change in ways of living and methods of transportation and communication (O'Connor: 1971, p.127). Rapid urbanization, which results from the concentration of major activities in the urban areas, is a major characteristic of these regions. For example, Lagos, the capital of Nigeria, grew from nearly a quarter of a million in 1950 to about one and a half million in 1970 (Olatunbosun: 1975, p.32). This urbanization process has led to many problems in the developing countries - especially the massive congestion of the urban areas (World Bank: 1975, p.7). The main causes of this are usually attributed to the "lack of expertise to take an overall view, build up systems, give suggestions regarding policy formulation, look after feasibility studies, suggest a proper pattern of institutional and organization support and provide a wide and comprehensive range of advisory assistance....Lack of an assumed flow of financial and technical assistance also stifles initiatives on the part of governments" (Tandom and Tome: 1976, p.6). In short, these countries have not been able to cope with the changes that are taking place within their boundaries. The most noticeable changes have

occurred in the transportation sector of these countries. For instance, between 1946 and 1957, traffic tonnage by road increased by about 17.5 per cent (Ekundare: 1973, p.253). Since this period, there has been a considerable improvement in the capacity, comfort, and ease of transportation in the developing countries.

Changes in transportation technology has greatly affected the way people live and has a strong impact on the way society organizes its activities. Cheap and efficient transportation allows for large-scale production and specialization, due to the relative ease of communication between different parts or components located in different geographic space (Lansing: 1966, p.389). Improvements in urban transportation, for example, has led to a change in residential patterns in most cities. People do not have to live near their work places, which are usually located in or near the city centres (Hoover: 1975, p.365). The semi-rural atmosphere of sub-urban dwelling is now within the reach of many urban workers because of the ease of access to the central business district. The development of better transportation has brought about greater dependence on transportation (Hoover: 1975, p.364). For example, the increase in sub-urban residential developments has made it necessary for more urban dwellers to depend on transportation networks in order to perform their duties, i.e. shop, work, or enjoy the leisure facilities of the downtown.

Generally, therefore, an increase in transportation capacity permits a more effective abridgement of distance. It makes possible faster, safer, cheaper, more flexible, and more dependable service, which in turn allows or encourages a greater movement of goods and people per unit of time (Tyrchniewicz and Tangri: 1970, p.48). These characteristics make transportation very important in development in all parts of an economy as shown by the statement below:

Transportation is essential to a modern economy: the division of labor rests upon it. Both geographic specialization based on dissimilar natural resources and the internal specialization and use of machinery characteristic of mass production rest on transport. Improvements in transportation can have major indirect results....A decision in the 1930s to improve navigation on the Tennessee River helped to revolutionize the poultry industry in Georgia in the 1950s. Since the whole organization of production rests on transport facilities, there is a special public interest in them. This interest takes the form both of a concern with their development and with preventing any distortion of their use. Control of the transportation system of an area by a private monopoly, if unchecked, would carry potential control of the economic life of that area (Tyrchniewicz and Tangri: 1970, pp.389-390).

From the statement above and what has been discussed in Chapter II, one can say that there is a strong link between economic growth and transportation. The interaction between the land and pattern of transportation and the standard of living of the population in any country is a critical factor affecting economic and social progress (Filani and Osayimwese: 1974, p.387). This is not to say that trans-

portation alone is the key to progress. But transportation has special significance because of the "pervasive role of mobility in facilitating other objectives. Transport is a necessary ingredient of nearly every aspect of economic and social development. It plays a key role in getting land into production, in marketing agricultural commodities, and in making forest and mineral wealth accessible. It is a significant factor in the development of industry, in the expansion of trade, in the conduct of health and education programs, and in the exchange of ideas" (Owen: 1964, p.1). Transportation therefore, can not be an isolated phenomenon. Its impact is enhanced by the interaction of a variety of other economic stimuli (Kraft, et al.: 1971, p.1).

This chapter is focussed on the transportation policies in Nigeria and their potential for meeting the economic, socio-cultural, and political aspirations of the country. This task will be approached by tracing the role which transportation has played in national development; the deficiencies of the past strategies; and the potential of the current transportation strategies. Special emphasis is placed upon the institutional framework within which the transport sector operates. This emphasis is justified in view of the constant mention of the magnitude of manpower and coordination problems in developing countries (for instance see World Bank: 1974, pp. 81-82; and Tandon and Tome: 1976, p.6).



### Historical Development of Transportation:

In a developing country, such as Nigeria, there is a general concern for transport planning in the context of the desire to promote rapid economic development (Filani and Osayimwese: 1974, p.387). The development of transportation in Nigeria can best be articulated from a historical perspective and this is the objective of this section. To achieve this objective, the colonial development policies will be examined and compared to the independent government's policies. Consequently, two main topics will be dealt with in this section:

- a) transportation development under colonial rule; and
- b) transportation development after independence.

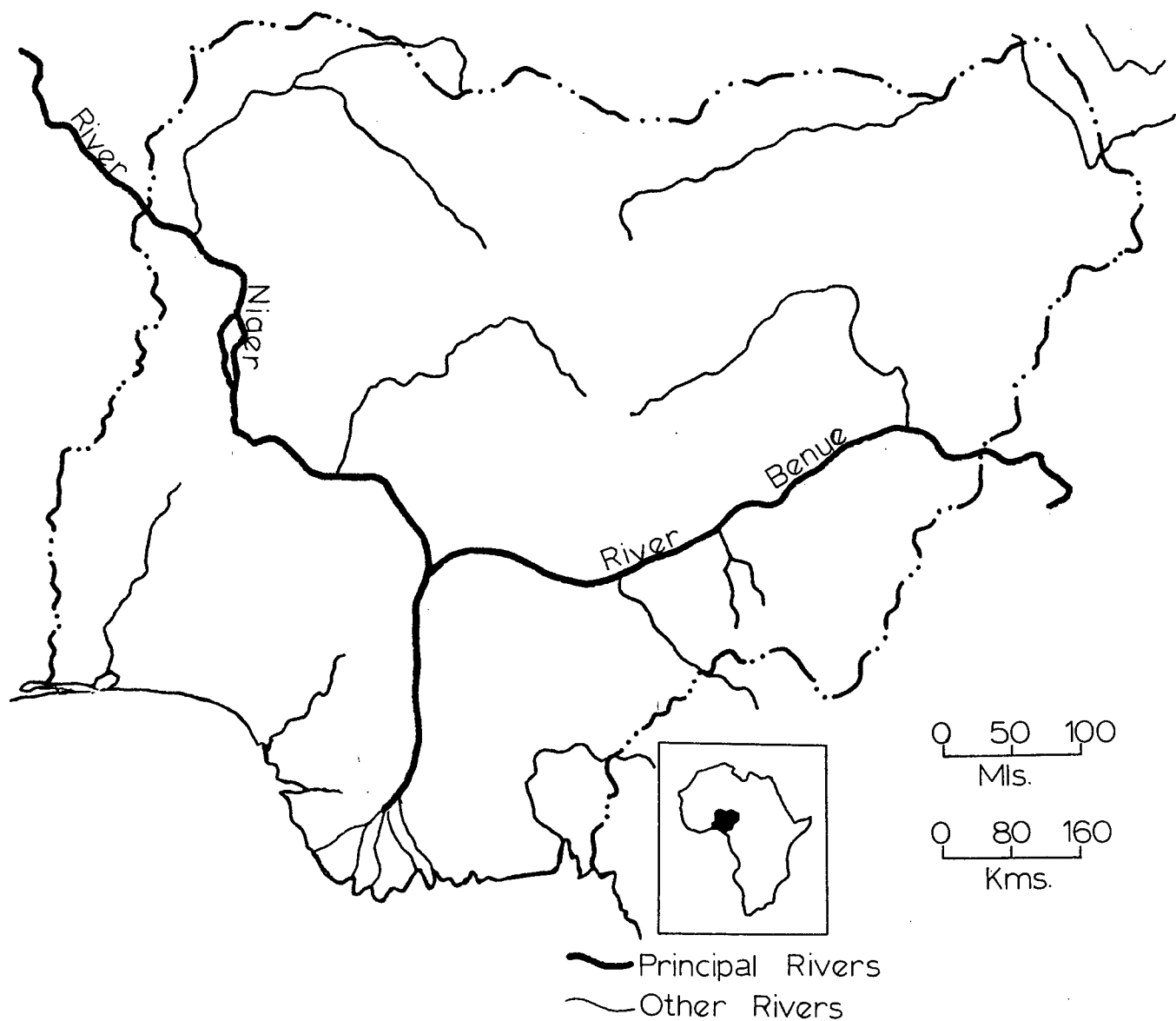
The importance of transportation in Nigeria during colonial rule is well portrayed by the following statement:

Improved transport and communications are fundamental to all other types of development. There was no doubt that at the start of the twentieth century transport difficulties were among the most important and urgent problems facing Nigeria. It was necessary for the British government to have effective control over the relatively new district which had been acquired. The movements of the administrative officers up and down the country, and the regularity of effective communications between the administrative centres and the respective local administrative stations, were indispensable to any good government. This could be made possible only with improved and modern systems of transport and communications. As far as the economic development of Nigeria was concerned there was a great need to introduce better transport and communication systems in order to quicken the pace

of the transition from a predominantly subsistence economy to a modern exchange economy. (Ekundare: 1973, p.127).

The development of the transportation network in Nigeria is therefore a very important aspect of the economic growth of that country. A good transportation system is an effective way of opening up the country to modern commerce, which is an essential factor for growth.

Prior to European intervention, Nigeria depended largely on its natural waterways - the rivers, for the transportation of goods and people (Ekundare: 1973, p.46). In fact during the beginning of European intervention, rivers and other waterways still provided the easiest routes for the early explorers, traders and missionaries (Ekundare: 1973, p.47). However, strong limitations existed for the use of river transportation in Nigeria. Firstly, people in many parts of the interior had to travel several miles on foot before they could reach a navigable river (Ekundare: 1973, p.46). Rivers Niger and Benue provided the main waterways of the country. As can be seen from Map 2; most areas of the country are far away from the rivers. Secondly, these rivers were, and still are, often blocked by uprooted trees and sand due to tropical rain and thunderstorms (Ekundare: 1973, p.47). Due to these, and other limitations, footpaths or bush tracks were extensively used in all parts of the country (O'Connor: 1971, p.127). In the dense forest districts of Southern Nigeria, the footpaths were



Map 2. Nigerian Natural Waterways : Rivers

too narrow for animal haulage and consequently the easiest and most practical means of transporting goods were by head-loading. In the savannah and arid areas of Northern Nigeria, however, camels and donkeys were used extensively for transporting goods. (Walker: 1959, p.88).

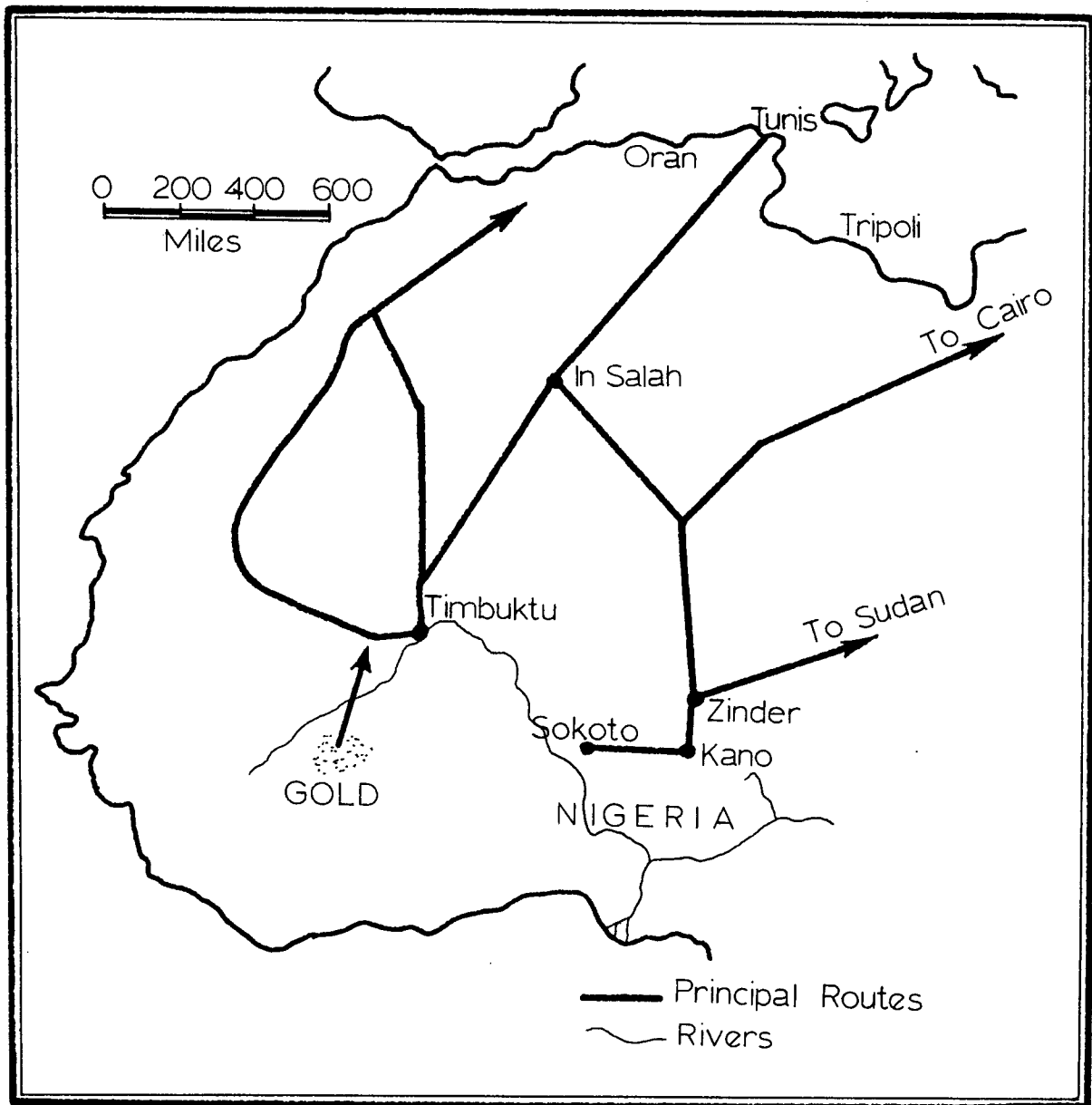
a) Transportation Development Under Colonial Rule:

By the middle of the nineteenth century, the transportation system of Nigeria was still very limited. Most of the country still lacked contact with the outside world. There were only a few foreign contacts along the coast and in the extreme north where caravan trade with North Africa already existed (See Map 3.). However, with the beginning of colonial government, the introduction and expansion of international trade became the developmental objective of Nigeria (Olatunbosun: 1975, p.50). To achieve this objective, the colonial government laid major emphasis on transportation and communication - new roads, railways and ports were built and a few telephone lines were installed. The provision of these facilities took time and it was not until the end of that century that improvements in transportation became noticeable. The only effective means of transportation were still by navigating the waters and travelling by foot. The most accessible areas were the costal areas and settlements along the rivers Niger and Benue. The important role of inland waterways during this early development period is adequately outlined by Olufemi

Ekundare as follows:

The inland waterways were used by the British administrative officers in the course of their duties, and a few traders also found them useful in transporting bulky export products (e.g. palm products) down to the coast, and in supplying imported goods to the people of the interior. The missionaries found the waterways very helpful in their task of spreading the Christian faith. From about 1880 a number of steam launches were being operated; for example, the Royal Niger Company operated a number of steam launches on the river Niger, connecting the northern portion of the country with the coast. The number of canoes plying the waterways also increased as a result of growing commercial activities, particularly towards the end of the nineteenth century (Ekundare: 1973, p.71).

By the end of the second World War, the transportation system of Nigeria had substantially changed due to colonial government investment in the transportation sector. For example, in 1945, "a Ten Year Plan for Development and Welfare of Nigeria was drawn, estimated to cost in all £55,000,000." £10,500,000, or 19.1 per cent of the total, was to be spent on road and water transportation (Walker: 1959, p.96). Before this plan, only a few roads existed, especially around Lagos, but the most visible transportation development of that period was the completion of the railway line from Kano to Lagos in 1914 (Olatunbosun: 1975, p.50). This became an incentive for increased production of agricultural produce - especially groundnuts, cotton and cocoa - the major cash crops. The discovery of coal at Enugu in 1909 encouraged the government to investigate the possibility of an eastern railway line and



Map 3. Trans-Saharan Caravan Routes

by 1932 work on the eastern rail line was completed from Port Harcourt to Kaduna (Ekundare: 1973, p.135). From Map 4, it is easy to see that the railway system, and the roads to some extent, were built to facilitate exports. For instance, the most important roads are those connecting resource regions to the port cities. This network would favour international trade more than domestic trade.

There is little doubt that the colonial government, which might have constituted an important source of initiative and a dynamic element in promoting rural development in Nigeria, restricted its role mainly to the development of agricultural and mineral exports. This strategy ensures adequate and cheap supply of raw materials to industries in the large urban centres, and overseas. There are some evidences to show that the colonial policy was "clearly biased towards the promotion of exports rather than indigenous manufacturing, and the resulting decline of traditional industry associated with the pre-colonial agrarian society was replaced by the expansion of and reliance on imported manufactures" (Birnberg and Resnick: 1973, p.576). The transportation policy of this era also reflected the need for foreign transportation links.

#### b) Transportation Development After Independence:

Few will disagree that increased national growth is one over-riding goal of development planning. In the first

national plan for Nigeria, the first objective stated for plan preparation was "to surpass the past growth rate of the economy of 3.9 per cent per year compound to achieve a rate of 4 per cent per annum and if possible to increase this rate" (Federation of Nigeria: 1962, p.23). The problem is to decide what constitutes national growth. Certainly, it is a matter for debate to state what factors constitute national growth and what their relative ranking are. Many variables are capable of being included in the definition of national growth and among these are unity, equity and prosperity. As was mentioned in Chapter I, Gross National Product (GNP) is often used as a quantitative measure of national growth. The popular belief is that the higher the GNP, the better the country.

The first real national development plan for Nigeria, which incorporated all government programs, was published in 1962, two years after independence (Olatunbosun: 1975, p.60). The document was called "National Development Plan, 1962-68." The main goals of the plan were to raise the rate of economic growth and to increase the standard of living of the people (Federation of Nigeria: 1962, p.23). To achieve these goals, the strategy was to maintain an average growth rate of 4 per cent of the Gross Domestic Product (GDP). The plan aimed at investing 15 per cent of the GDP annually in the directly productive sectors of the economy. These directly productive sectors, which were to absorb about 70 per cent of total esti-



mated expenditure of ₦1353.6 million (about \$2030.4 million), were transportation and communication, electricity, primary production, and industry. Table I below is a summary of governmental allocations to different sectors of the economy during the first national development plan period.

TABLE I

ALLOCATION OF DEVELOPMENT FUNDS IN THE FIRST  
NATIONAL DEVELOPMENT PLAN, 1962-68.

Sectors	Amount (₦ million)	Percentage of Total
Transportation and Communication	348.1	25.8
Electricity	205.7	15.1
Primary Production	181.4	13.4
Trade and Industry	179.3	13.3
Health	141.8	10.5
Education	139.6	10.3
Administration	103.1	7.6
Water Supply	54.6	4.0
TOTAL:	1,353.6	100.0

Source: Federation of Nigeria: National Development Plan, 1962-68, Federal Ministry of Economic Development, Lagos, 1962, p.41.

In the transportation sector, the basic objective of the 1962-68 Plan, and other subsequent plans, was to expand and

upgrade the transport infrastructure. For instance, in the early 1970s, the Federal Government stated that "Nigeria's transportation objectives have been stated since the early 1960's, in general terms as aimed at co-ordinated development, economic efficiency and, by implication, the support of national interests like the opening up and binding together of this vast nation" (Federal Republic of Nigeria: 1973, p.26). The transportation programs of Nigeria were aimed at meeting the demands of the economy "through modal co-ordination and rational investment decisions" (Filani and Osayimwese: 1974, pp.388-389).

The objectives for the transportation sector indicate that the government is still mostly concerned with economic efficiency. This is similar to the guiding force that dictated investment in the transportation sector during colonial administration. In fact, the basic characteristics of the first plan made it essentially a continuation of colonial development policy in Nigeria. The search for economic efficiency was as strong as ever, with a relative neglect of social considerations. The first plan was basically export-oriented since most of the transportation networks to be constructed were selected because of their economic role - i.e. the transportation of export materials to overseas markets. In this process, the rural areas are still relatively neglected in national development. The statement below testifies to the

rural neglect that have been going on in the developing countries:

It is important for rural development that the overall relationship between input and output prices within agriculture, and the terms of trade between agriculture and other sectors of the economy, should be such as to stimulate growth in the rural areas. The Bank's analyses indicate that all too often government policies discriminate against development, particularly agricultural production, in the rural areas. They are designed to provide assistance to manufacturing and processing industries, or to raise government revenues. As such, they tend to raise the cost of agricultural inputs relative to output prices, making innovation unrewarding and highly risky for the farmer" (World Bank: 1975, pp.29-30).

It can then be said that the transportation development objectives after independence were not substantially different from what occurred during the colonial era.

#### Transportation Modes in Nigeria: Problems

In recent years, the methods of transporting people and goods from one place to another, the world over, are so varied as are the reasons for movement. The methods range in technology from head-load, and animal haulage/pedestrian movement to supersonic jet aircraft and space crafts. In the Nigerian case, four major transportation modes will be considered - roads, railways, waterways, and air. Pipelines are still relatively undeveloped in Nigeria.

a) Roads:

The need to generate enough traffic for the newly constructed railways triggered the concern for road transportation in Nigeria (Ekundare: 1973, p.142). The construction of feeder roads was viewed as a strategy for increasing both passenger and cargo traffic for the railways. Progress in road development, therefore, followed closely the gradual construction of rail lines. It is documented that "between 1900 and 1915, road transport services were established by the Nigerian railway...." (Ekundare: 1973, p.142). By 1951, a total road network of over 27,000 miles had been constructed. Out of these only 1,114 miles were paved (World Bank: 1974, p.88). This World Bank publication also reported the rapid progress made in road construction. By 1970, the roads in Nigeria "amounted to about 55,000 miles, of which about 10,000 miles were paved." The percentage of roads paved had increased from 4.1 per cent in 1951 to 18.1 per cent in 1970.

The rapid increment in motor vehicle ownership is another factor which brought about the marked development of road transportation in Nigeria (World Bank: 1974, p.88). There were only a few cars in Nigeria just after 1910 but by 1969 it was documented that the country, with its population of more than 60 million people, had approximately 100,000 private and commercial vehicles (World Bank: 1974, p.88). This trend in vehicle ownership brought heavy demand for more and better

roads. One basic problem faced by roads in Nigeria is maintenance. The history of road transportation in the country shows that maintenance is very poor (Walker: 1959, pp.100-102). Pot holes are common features on many roads - both trunk and local - and road signs are not available in many segments (Walker: 1959, p.100). Financial limitations and inadequate supply of qualified manpower constrained the amount of roads that can be maintained, or even constructed. Despite these difficulties, road transportation is still the most important component of the transportation system - both in terms of traffic and investment. It accounted for about 77 per cent of freight ton-mileage and roads were allocated about 69 per cent of public transportation capital investment during the second national development plan period of 1970-1974 (World Bank: 1974, p.188).

In Nigeria, the responsibility for developing and implementing road transport policies falls to the Federal Ministry of Works and Housing at the Federal level (World Bank: 1974, p.89). Within each state of the federation different ministries are responsible for developing and implementing transportation policies. The problems inherent in this approach is clearly brought out by the World Bank as follows:

Nigeria's twelve states also have ministries concerned with road maintenance (including the maintenance of federal highways on an agency basis) and with the construction of some secondary roads.

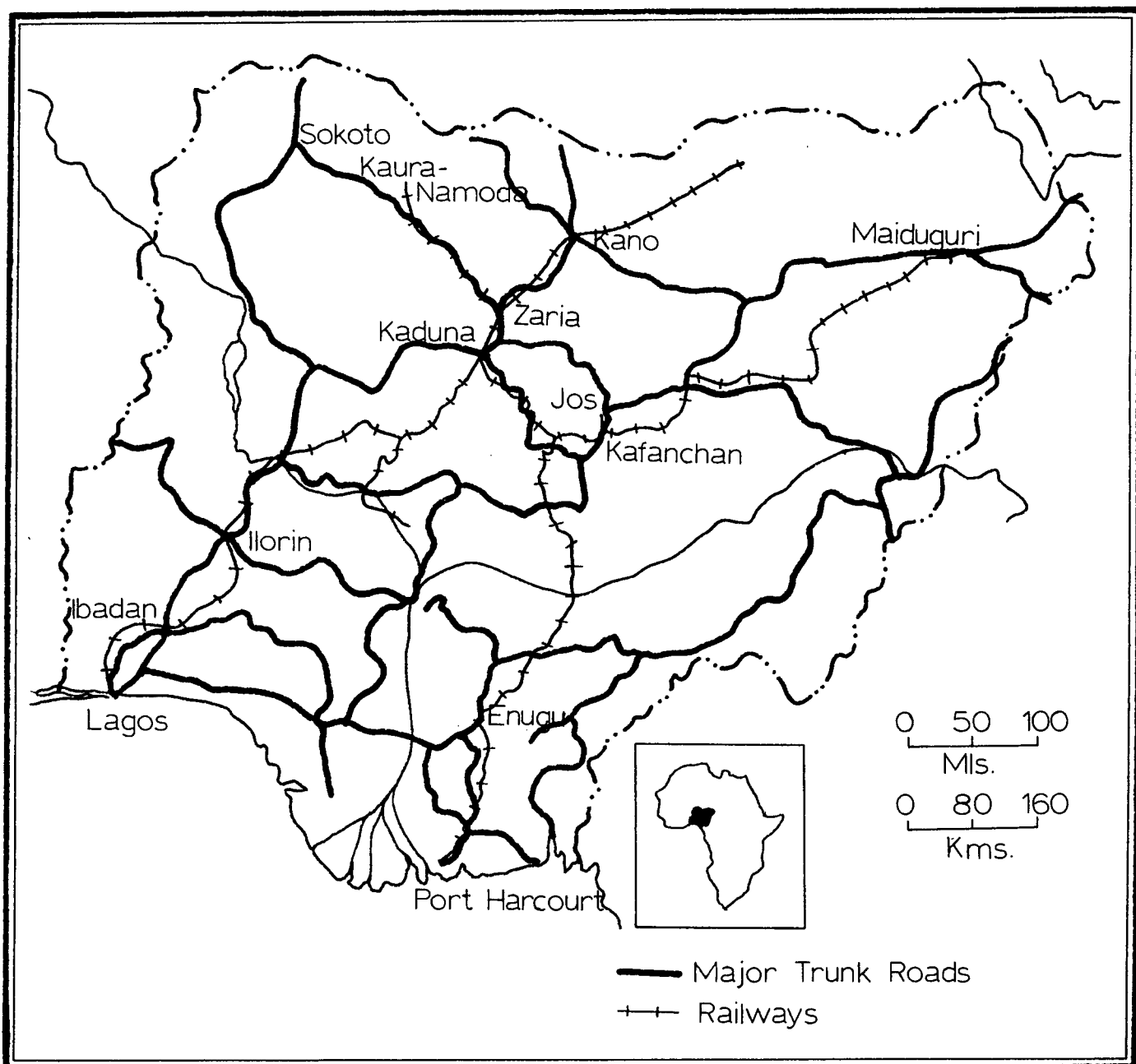
There is no formal body to coordinate state/federal planning and the relationships between federal and state highway administrations are not clear (World Bank: 1974, p.90).

This shows that the problem of coordination is a serious one in road transportation. This will be further elaborated upon later on in this chapter.

The basic concept for road transportation development in Nigeria was to construct a grid system covering the entire country. This concept included six trunk roads running from west to east and four trunk roads running from south to north. Map 4 shows the existing network of trunk roads in the country. Parts of the original grid pattern proposed for Nigeria are still vaguely noticeable, especially on the north-south axis. A critical look at the map shows that priority has been given to the north-south trunk roads rather than the east-west roads - thereby facilitating the transportation of export minerals and agricultural goods from the north to the south. More road networks exist in the southern part connecting port cities or inland cities to ports. The map therefore confirms an earlier assertion. "A major coordination problem is the carriage of bulk export produce from the agricultural North to the southern ports" (World Bank: 1974, p.90).

b) Railways:

The railway system of Nigeria is owned by the Federal



Map 4. Transportation Networks in Nigeria : Roads and Railway

government and is operated as a self-contained enterprise by the Nigerian Railway Corporation. The government, however, retains general powers of control over its policies and rates. Work on the construction of the rail system started at the turn of this century from Lagos to the north. The system was operated as a government department until 1955 when it became a commercial concern (Federal Republic of Nigeria: 1975, p.212). The existing railway network consists of two main lines. One runs from Lagos to Kano spanning a distance of 700 miles (1126.3 kilometers) and the other running from Port Harcourt to Maiduguri spans 897 miles (1443 kilometers) (World Bank: 1974, p.192). There are connections at Kaduna and Kafanchan linking these two main lines. There are also a few branch lines as can be seen from Map 4.

The railways played a more major role, than roads, in earlier transportation of export goods in Nigeria. This may be as a result of the relatively low level of road transportation when the essential railway networks have been completed. The difficulties associated with road construction at that early period is documented as follows:

Road building in 1914 was interrupted by war and immediately after by the diversion of effort to the construction of the railway from Port Harcourt to Kaduna...The building of bridges capable of carrying heavy weights is an expensive business. Much technical skill is needed. The driving of piles or the sinking of caissons to reach a solid footing requires heavy plant and lifting gear,



none of which is easily transportable. Besides the engineering problems caused by the difference in the volume of water between wet and dry seasons, and by the depth to which foundations may have to be sunk in swamp and sand, there is in Nigeria the further difficulty of getting plants, materials and structural members to the site. Wood, cement and plant, in the early days, all had to be head-loaded through difficult and often disturbed country" (Walker: 1959, pp.88-90).

The railways then served the colonial objectives more than roads, as it is more advantageous for transporting heavy and bulky commodities over long distances. The railway played well its part in moving goods to overseas markets and the transportation of imports to the interior. The new extension to the lines, i.e. from Jos to Maiduguri, which was completed in 1965 by the federal government was to serve the same objective. The rail transportation objectives of the federal government can hardly be expected to differ from those of colonial administration because of the very nature of rail transportation. The basic characteristics of the railway system in Nigeria are outlined below:

The railways serve the two major ports, Lagos and Port Harcourt, and there are rail heads at Kaura Namoda, Nguru, Jos, and Maiduguri, and lines of lesser importance to Baro and Idogo. The system provides transport links between productive and well-populated parts of the country with traffic origin and destination areas widely separated. This provides opportunity for long-haul bulk traffic in both directions, a kind of traffic in which railways have an inherent competitive advantage over other modes of transport. Axle load is limited by several stretches of light-weight rail, and operating speeds are restricted by extensive distances of curved track as well as steep grades in parts of the system" (Federal Republic of Nigeria: 1975, p.212).

The important role which this mode had originally played, within the transportation system of Nigeria, is now on the decline. For example, goods traffic declined from 2.5 million tons in 1963/64 to 1.5 million tons in 1970/71 and ton-miles declined from 1,462 to 692 million. During this same period, passenger traffic declined from 526 million passenger miles to 302 million passenger miles (World Bank: 1974, p.192). A partial reason for this decline can be attributed to the slowness of the railway traffic. The desire to move faster has probably motivated many patrons to other modes of transportation. Many factors are responsible for this slowness including the fact that all lines are single tracks with 1.067 metre (3 feet 6 inches) gauge. Loops are provided in each station for crossing and passing trains. A great deal of time is wasted in sorting out, and in waiting for crossing and passing trains. For example, if two trains start travelling at opposite ends of a rail line, the time it takes each of them to reach its destination does not only depend on its speed but also on the speed of the other train and the possibility of being delayed by engine and track problems. Many of the engines used, until very recently, were secondhand and they breakdown very easily, thereby causing delays and discomfort to passengers (Ekundare: 1973).

Another reason for the decline can be associated with coordination problems. This is recognized by the government as is evident from the following statement: "The government

attributes the railway's decline to defects in management, equipment, and rate policies, and to competition from road transportation" (World Bank: 1974, p.192). This aspect will be elaborated upon later in this study. However, the steady decline in railway traffic has made it necessary for the federal government to heavily subsidize the mode. The problems associated with this decline is amply brought out as follows:

NRC (Nigerian Railway Corporation) operates under conditions of heavy traffic demand, long haul, easy terrain and spare track capacity which, given reasonable efficiency, should result in economic and profitable operation. But NRC is operating inefficiently, and is consistently in deficit. These deficits are growing and traffic demands are not being met. The government is anxious to get the railways running efficiently, so that they may meet their economic share of total transport demand and also ease being a burden on public funds (World Bank: 1974, p.88).

In conclusion therefore, unreliable service and scheduling coupled with lack of adequate coordination with other modes are responsible for the decline in rail traffic. However, the rail system will continue to have its share of traffic in Nigeria, at least in the near future. Transport economics show that rail transportation is cheaper and more efficient for transporting bulky and non-spoilable substances over long distances on land. The Nigerian railways will always enjoy a significant proportion of the transportation of bulky mineral ores and some agricultural exports from the northern part of the country to the southern ports. This role may even be

played to economic profitability given more effective and efficient administrative system and investments.

c) Waterways:

Intra-national water transportation is limited in Nigeria due to the amount of available inland waterways. The development of the inland waterways did not involve any major construction of canals, but rather, the main concern was to improve navigation on the major rivers by dredging (Ekundare: 1973, p.128). For instance, out of the 4,200 miles (6,757.8 kilometres) of navigable waterways under the control of the Inland Waterways Department in 1958, only 1,059 miles (1703.9 kilometres) were "inspected and improved for navigation" (Ekundare: 1973, p.254). There are two major rivers in Nigeria - the Niger and the Benue (see Map 2). These rivers have some common characteristics that influence navigation. The two rivers have swift currents, a course impeded by rocks and rapids, a variable depth depending on the seasons of the year, and constant dredging is required to keep the delta navigable. Inland waterways now play a diminishing role in the transportation systems in Nigeria. This diminishing role is documented by the World Bank as follows:

The coastal lagoons and delta creeks are navigable from Dahomey (now Benin) to Opobo, East of Port Harcourt. The Niger and Benue Rivers are navigable for barges all the year round as

far as the confluence, and seasonally upstream. However, river traffic which accounted for more than 300,000 tons of exports annually in the early 1960s is now negligible, in spite of investments in locks and navigational aids under the last Plan ....The present situation calls for a fresh appraisal of the place of river transport in the economy. In the first place, it would be necessary to restore navigational aids; secondly, the shipping service would have to be renewed; and thirdly, the improvements that have been made to the rapids section between Jebba and Kainji on the Niger do not seem to have been adequate. If these difficulties can be resolved, there should still be substantial scope for water transport" (World Bank: 1974, p.195).

That the importance of river transportation is declining is clear (O'Connor: 1971, p.135).

#### d) Air Transportation

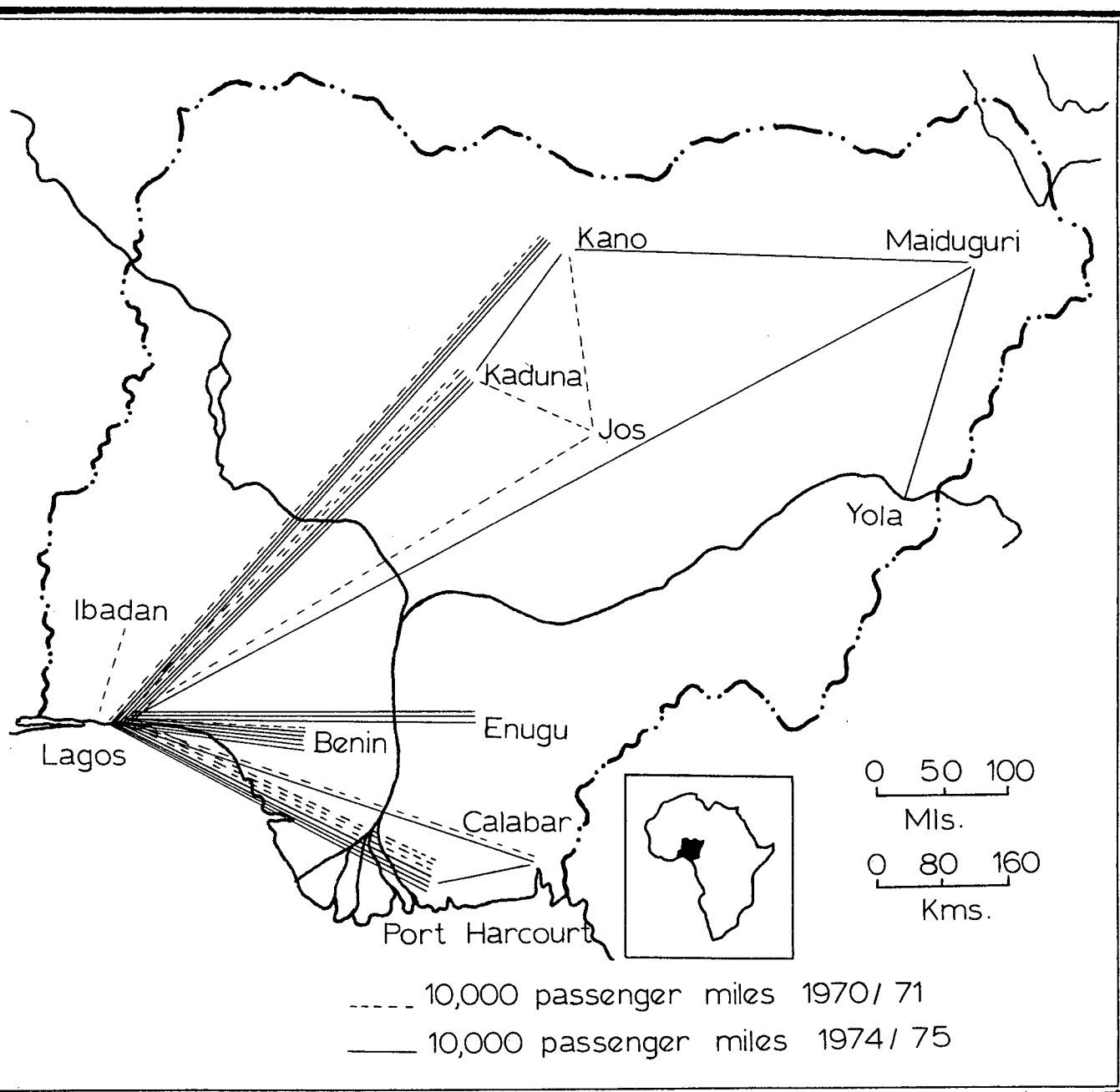
Air transportation is one of the newest form of movement in Nigeria, it was not until 1935 that the colonial government in Nigeria set up an Air Services Development Committee to look into the possibility of establishing regular air services in the country (Ekundare: 1973, p.149). A few all season airports were constructed but it was not until the beginning of the Second World War that more serious attention was paid to air services, especially for military uses. Since after the war, the provision of air services has increased with demand for both international and domestic flights. Since the objective of this study is rural development, more emphasis will be placed on domestic air services rather than international ones.

The number of people using air transportation within Nigeria is growing but they still form an insignificant proportion of the population, as can be seen from Map 5. The domestic air services in Nigeria is used by a small segment of the population as evidenced by the following statement:

Domestic air services are still not well developed, given the size and population of the country. There is substantial unsatisfied demand for domestic passenger services. The distribution of government among twelve states and the existence of several industrial centres suggest that demand may rise significantly in the future. Most domestic passenger traffic is generated by government and business activities, since there is little tourism. Poor mail and telephone communications and time consuming road transport result in considerable demand for air travel (World Bank: 1974, p.195).

Map 5 clearly shows that the busiest routes are Lagos to Kano, Lagos to Port Harcourt and Lagos to Benin. Kano is a major international trade centre with an international airport. Port Harcourt and Benin are in the oil belt of Nigeria. In view of these, the demand for air transportation is likely to escalate with increases in oil production and economic growth. The time-saving capability of this mode will make it popular in many economic sectors. For example, it takes 1 hour to travel from Lagos to Kaduna by air, about 12 hours by car and about 20 hours by train (Iyehen, in Ekistics: July 1976).

Air transportation in Nigeria is under the jurisdiction of the Nigerian Airways which came into being in 1959. It is



Map 5. Number of Passengers Using Air Transportation in Nigeria : 1970/71 and 1974/75.

faced with many administrative problems as is evidenced by the federal government's concern that the statutory corporations are "inefficient, under-capitalized and not responsive to the changing needs of the growing Nigerian economy" (World Bank: 1974, p.90). Apart from the administrative problems, air transportation has not played any significant role in rural development but it has provided the fastest and most convenient linkages between many urban centres. The developmental role of air transportation is also limited by cost. The cost of air travel is beyond the reach of all but a few Nigerians at present, more so the rural inhabitants (Federal Republic of Nigeria: 1975, p.218). This fact will, however, not decrease the demand for air transportation, especially since the government's objective is to extend air services to different parts of the country (Federal Republic of Nigeria: 1975, p.218). The result of a survey confirms this statement:

A recent survey of users and potential users indicated that even increased fares would not necessarily hold this growth. Seventy-five percent of the respondents would still fly even if the fare was doubled. If it is tripled, 54 percent would still fly. In the same survey, 77 percent of the respondents would shift from the automobile to air transportation if air service existed between their origins and destinations. Eighty-eight percent cited time-savings as the reason they fly (Iyehen, in Ekistics: July 1976, p.35).

It will be interesting to know the composition of these re-



spondents but such information is not available. However, the possibility that the rural viewpoint is incorporated is very slight. Anyway, air transportation is bound to expand in view of the amount of money being voted to this mode by the federal government. In the 1975-80 plan period, a total of ₦ 51 million (approximately \$800 million) is to be spent on aviation - both domestic and international (Federal Republic of Nigeria: 1975, p.219).

#### Dominance of Road Transportation:

Few will disagree that increased national growth is one over-riding goal of development planning. Transportation planning forms an integral part of the national development plans. (For instance, see Federal Republic of Nigeria: 1975, pp.199-228.) In the developmental role of the transport sector, in many African countries, the role played by railways and roads are most significant (since waterways are limited by their natural courses). For example, the economic development of Uganda till 1962 was given the following rationale:

It has been shown above that Uganda, as it is today, is the result of the creation of transport facilities which linked it with the outside world. Before the building of the Uganda Railway the economy was limited to the use of local supplies for all purposes. The rail link enabled it to buy goods and services from the outside world in exchange for cotton and coffee. In other words, the transformation brought about by transport facilities was achieved through linking the local market in Uganda with a variety of world markets for exports

and imports (Hawkins: 1962, pp.23-24).

This is similar to the early importance ascribed to the railways as the major development agent in the transport sector of Nigeria. For instance, the development of roads was constrained for a period of time, to give priority to railways. To demonstrate this, in 1926 when "the Railway had first begun to find the competition of motor cars 'troublesome', Government had affirmed their view that cheap road transport should be 'viewed with favour' if it contributed to the development of Nigeria." Later, the government policy was changed so that nothing "would be done to prevent the growth of road transport unless there was clear and compelling urgency" (Walker: 1959, p.139). Since this period, the role of roads in transportation in Nigeria has been on the increase as shown in Table II. The rapid increase in road transportation is clearly shown in the statement below:

Over the years the road has been gaining relative to the railway both in passenger and freight carried. In 1953 the railway carried 42.5 percent of freight and 8.2 percent of the passengers and the road transport system carried 52 percent of freight and 92 percent of passengers. By 1960 road shares had increased to 62 percent of freight and 96 percent of passengers. It is estimated that in 1972, 74 percent of freight and 97 percent of passengers were carried by road (Federal Republic of Nigeria: 1975, p.354).

TABLE II

PRODUCE TONNAGE MOVED TO PORTS BY MODE OF  
TRANSPORT : 1969-72

MODE	1969		1970		1971		1972	
	Tons	Percent of Total	Tons	Percent of Total	Tons	Percent of Total	Tons	Percent of Total
Rail	573,398	42.4	393,329	32.2	290,912	26.4	174,549	16.5
Road	774,078	57.2	813,292	66.3	786,732	71.5	851,775	80.6
Water	4,720	0.4	20,613	1.7	22,404	2.1	30,408	2.9
TOTAL:	1,352,196	100.0	1,227,234	100.0	1,100,048	100.0	1,056,732	100.0

Source: Federal Republic of Nigeria: Third National Development Plan: 1975-80, Federal Ministry of Economic Development, Lagos, 1975, p.360.

In view of these figures, it is clear that road transportation is now the most important element of the transport sector. It serves the majority of the people and it is more widely used. Government's development fund allocations also reflect the dominance of roads in the transport sector. For example, 69 per cent (in the 1970-74 plan period) and about 73 per cent (in the 1975-80 plan period) of the public capital investment in transportation were allocated to road transport (World Bank: 1974, p.188; and Federal Republic of Nigeria: 1975, p.200). It is in view of the importance and dominance of road transportation in Nigeria that this study lays more emphasis on the mode.

#### Existing Institutional Structure for Transportation:

Management problems are always mentioned as one of the important reasons limiting the efficient development of transportation in Nigeria (World Bank: 1974, p.87; and Federal Republic of Nigeria: 1975, p.201). One of the factors that has been identified is that of inadequate supply of trained personnel and this is recognized in the current development plan for the country. "There was a serious lack of executive capacity even for implementing the relatively modest transport sector programme of the 1970-74 period" (Federal Republic of Nigeria: 1975, p.201). Policies were formulated to enhance the training of personnels. However, the government has not

recognized the contribution of the present institutional structure to the deficiencies in the transport sector as most of the problems mentioned in the development plan were attributed to public corporations and their lack of qualified personnels (Federal Republic of Nigeria: 1975, pp.201-202). This area will be explored under this section.

In Nigeria, public corporations control all modes of transportation except roads which are under ministerial jurisdiction. These public corporations (e.g. Nigeria Railway Corporation, Nigerian Civil Aviation, and Nigerian Ports Authority) are set up by the federal government to manage and operate the modes within policy guidelines. Transport ministries exist in the governments for the formulation of transportation policies. It will be shown in this section, that basic problems exist within the government departments which have implications for the activities of the public corporations.

One of the obvious anomalies of the existing arrangement is the rather strange division of transportation responsibilities between the Federal Ministry of Transport and the Federal Ministry of Works and Housing. In the state and local governments the responsibility for roads is entirely within their respective Departments of Work. The Federal Ministry of Transport is responsible for matters concerning railways, civil aviation, ports and inland waterways.

Federal roads, however, are entirely in the domain of the Federal Ministry of Works and Housing. It is strange that although movement by roads is predominant in Nigeria, the Federal Ministry of Transport is not responsible for it. The Federal Ministry of Transport is "responsible for transport planning and coordination and exercises its powers by influencing budgetary allocations to the different transport modes (except road transport) and by making appropriate regulations" (World Bank: 1975, pp.89-90). In this situation where two ministries are responsible for the transport sector, one would expect strong cooperation between the two. This co-operation, however, seems elusive in the Nigerian situation:

...the Federal Ministry of Works is a so-called service ministry, and consequently, performs civil and building construction for the Transport Ministry. Therefore, full cooperation between the two ministries is very essential. Such cooperation has been rather inadequate as evidenced by complaints by the Transport Ministry over the maintenance and repair of airport facilities (Filani and Osayimwese: 1974, p.400).

#### Coordination Within the Federal Ministry of Transport:

Another source of administrative problems in transportation planning is the lack of coordination which exists within the ministries (Filani and Osayimwese: 1974, p.401). There are organizational inadequacies within the Ministry of Transport which have to change if a more effective administration of the different transportation modes is required. At the

present time, the functional section of the Federal Ministry of Transport is organized on a modal basis - i.e. each mode of transportation, except roads, has its own department as shown in Figure 1. The present structure enhances the segregation of the three departments - each living and operating in a different administrative world and knowledge of policies from other departments is virtually absent (Filani and Osayimwese: 1974, p.400). In such a case strategy proposal in the Railways department is usually not communicated to the Ports and Waterways department. The implications of this is apparent. For one, most of the railway freight traffic are for overseas markets and has to be handled at the ports by the department of Ports and Waterways. Therefore a strategy which would increase such traffic for the railways would also increase traffic in the ports. But if the Ports Authority is unaware of such a strategy, it can hardly be expected to adequately handle the resultant increased demand on its facilities. The structure described above is by no means adequate. Of course, the administrative department is usually saddled with the responsibility for coordination, but it hardly has the technological and technical know-how to comprehend modal interactions. For instance, the lack of technical personnel is brought out in the following statement:

The Federal and State Ministries of Works generally determine the road programme and it is known that up till 1971 there was no single

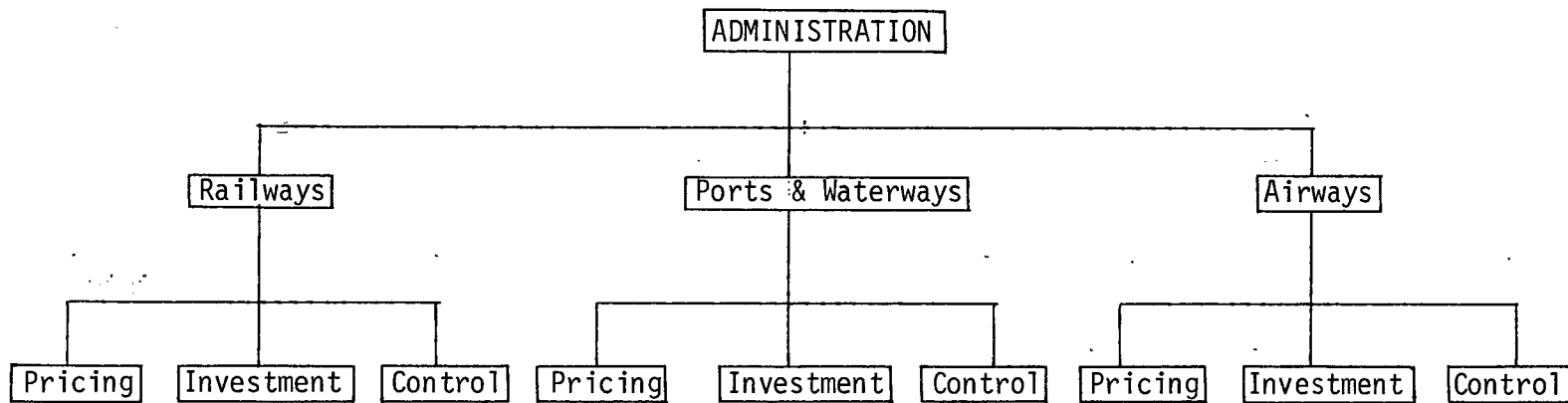


FIGURE 1

ORGANIZATIONAL STRUCTURE OF THE FEDERAL MINISTRY OF  
TRANSPORT, NIGERIA.



economist among the project planners....The Federal Ministry of Transport also has a shortage of transport economists. In fact, as of now the authors do not know of any transport experts in either the Federal Ministry of Transport or its recently created arm - the Transport Planning Unit (TPU) (Filani and Osayimwese: 1974, p.400).

Inter-sectoral coordination of transportation with other sectors is carried out by the Federal Ministry of Economic Development, which has a transportation division and the Ministry of Finance is responsible for budgetary allocations (Word Bank: 1974, p.90). These ministries are not concerned with intermodal coordination per se, and this is the emphasis of this section.

#### Conclusion:

In this chapter, the development of the transportation networks in Nigeria has been outlined. Special emphasis has been given to roads because of the predominant role which roads play in moving the majority of the people. The major problem facing the development of this mode is identified as an institutional one. The existing administrative structure, within which roads are provided in the country, allows the perpetuation of the existing problems - i.e. the lack of coordination which exists. In the next chapter, a strategy or strategies will be developed which will enhance better coordination of transportation policies to the benefit of a majority of the people.

## CHAPTER IV

### A TRANSPORTATION STRATEGY FOR REGIONAL DEVELOPMENT

#### Introduction

A transportation strategy is here defined as an approach which is adopted by a government for planning, operating, and maintaining its transportation system. For an adequate planning process, it is necessary to develop a strategy which will guide such a process. The strategy approach is very important in transportation planning because of the nature of transportation roles or objectives in development. For instance, investments in transportation infrastructure are known for their indivisibilities and lumpiness (Mahayni: 1977, p.354). Despite these characteristics, investment in transportation is necessary for development. Transportation has special significance because of the pervasive role of mobility in facilitating other objectives. Transportation is a necessary ingredient of nearly every aspect of economic and social development. It plays a key role in getting land into production, in marketing agricultural commodities, and in making forest and mineral wealth accessible. It is a significant factor in the development of industry, in the expansion of trade, in the conduct of health and education programs, and in the exchange of ideas (Owen: 1964, p.1).

The main objective of a transportation plan, as an extension of a developmental strategy, is "to minimize the problem of spatial separation of different activities by means of economical and feasible transport performance constrained by acceptable levels of safety and convenience" (Mahayni: 1977, p.357). Political considerations are coupled with the above in developing transportation networks in Nigeria. In the Third National Development Plan for Nigeria, transportation objectives are stated as the "coordinated development, economic efficiency and, by implication, the support of national objectives like the opening up and binding together of the nation" (Federal Republic of Nigeria: 1975, p. 199). In this chapter, a strategy of rural road transportation development will be focussed upon.

#### The Effects of Lack of Coordination:

The lack of coordination which exists in the transport sector has been discussed in Chapter III. The objective here is to demonstrate the effects of this problem on transportation developments in Nigeria. One important outcome of the lack of coordination is the rapid development of intra- and inter-urban transportation networks, and the relative neglect of rural farm-to-market roads. This has led to a dichotomy of urban-rural economies as shown in the following statement:

This urban-rural dichotomy was reflected in an urban-rural transport dichotomy. The fan-shape transport networks in most third-world countries center around major cities with links connecting them. Rural transport is still primitive and dependent to a large extent on human and animal powers. The move toward spatial integration and incorporation of rural economies into the national economy requires, therefore, a change in transport - planning rationale, and improvement of internal accessibility has become one of the critical factors in planning for development. (Mahayni: 1977, p.354).

This dichotomy in transportation is clearly visible in Nigeria, where the cities are served with many roads and the rural areas rarely have one road to boast of. Conceptually, the road transportation network of most developing countries, including Nigeria, is shown in Figure 2. A hypothetical country with a seaport has been taken as an example.

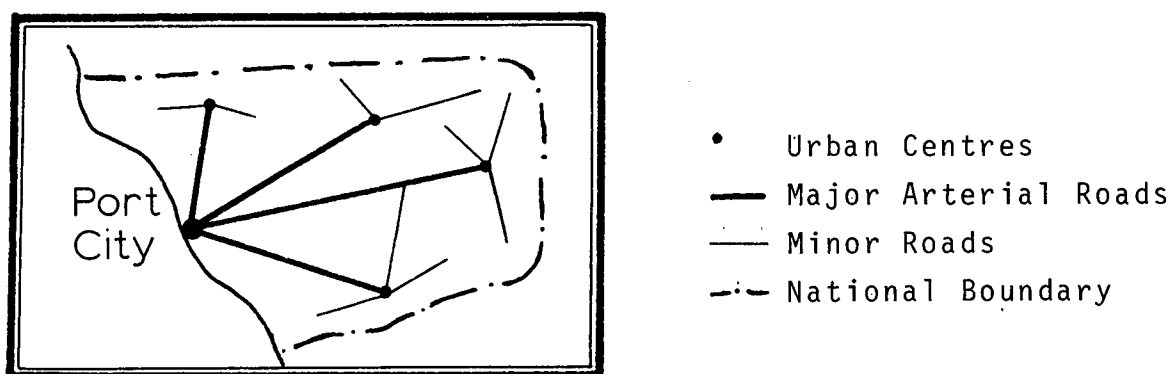


Figure: 2      Road Transportation Network in a Developing Country.

### Rural Transportation:

Good roads, modern sanitation, electricity, pipe-borne water supply, education and medical facilities were almost as

foreign to the rural areas at the end of colonial rule as they were at the beginning of that administration (Olatunbosun: 1975, pp.49-59). The bulk of the social services provided went to the cities where the British administrators lived. Even today, after about eighteen years of independence, the situation is not much better for the rural populace. This is especially so in the provision of transportation facilities. Transportation provision has been highly skewed towards intra-urban networks (Federal Republic of Nigeria: 1974, p.203). This view is supported by O'Connor: 1971, pp.145-146). The concentration of economic activities in the urban areas has made this strategy a reasonable one. The implications of this strategy for transportation development is best illustrated in the following statement:

While some of the new ports, railways, and roads have assisted the spread of commercial activity to new areas, most of the transport investment that has taken place has tended to consolidate well-established patterns....A circular process is at work whereby the colonial transport network has greatly influenced the spatial pattern of economic development, and this in turn determines where most of the demand for improved transport facilities arises (O'Connor: 1971, p.156).

The urban centres are usually seen as the only elements of development but this is rarely so in a developing country. For instance, in Nigeria, Mabogunje observed that "the worsening of social and economic conditions in Nigeria's rural areas

at a time when all indications are that the economy is growing at an unprecedented rate is also a measure of the failure of our urban centres to adequately 'serve' the rural population" (Mabogunje: 1974, p.89). To improve the rural situation therefore, increased rural productivity through the creation of a constantly expanding market for agricultural products and easy accessibility to the market should be stimulated (Federal Republic of Nigeria: 1973, p.34). Good farm-to-market roads are urgently needed in the rural areas as these are still inadequate in the rural areas. The lack of rural transportation facilities is recognized by the federal government when it stated that "the States will pay greater attention to the construction of rural bridges and culverts as the lack of these facilities still constitutes a serious impediment to movement in the rural areas" (Federal Republic of Nigeria: 1973, p.28).

#### Responsibility for Rural Roads:

"Up to the present, performance and co-ordination within the transport sector have not been satisfactory in many cases, not only because of misinvestments but also because of inadequate utilization of human and material resources, directly arising from poor management and control" (Federal Republic of Nigeria: 1975, p.199). In order to resolve this problem, policies should be aimed at management reforms, infusion of better trained personnel, reform of existing institutions and

the creation of new ones where necessary. The institutional problem is a very important one, as the suitability of the others depends on suitable institutional framework. Proper authorities are needed for effective policy formulation and implementation.

All roads in Nigeria are classified under three headings - Trunk 'A', Trunk 'B', and Local Roads. The federal government takes responsibility for all the Trunk 'A' roads. These are roads which span long distances. They connect major parts of the country and also form the main produce routes. The different State governments (presently 19 in number) provide for Trunk 'B' roads within their respective boundaries. Finally, the local governments are responsible for constructing and maintaining roads in their area of jurisdiction - i.e. rural roads. The lengths of roads under the jurisdiction of each level of government is illustrated by Table III below.

TABLE III  
LENGTH OF ROADS UNDER THE JURISDICTION OF EACH  
LEVEL OF GOVERNMENT IN NIGERIA, 1972 (IN KILOMETRES)

Government	Paved	Unpaved	Total	Percentage of Total
Federal	6,477	4,130	10,607	11.1
State	8,832	12,336	21,168	22.2
Local	2,890	60,800	63,690	66.7
Total:	18,199	77,266	95,465	100.0

Source: Filani, M.O. and Osayimwese, Iz: "The Organization of Transport Planning in Nigeria", The Nigerian Journal of Economic and Social Studies, Vol.16, No. 3, Ibadan, November 1974, p.395.

An analysis of the table above, based on road lengths, shows the unbalanced nature of responsibilities for road transportation in Nigeria. Of course, the magnitude of responsibility also depends on standard of the roads under each jurisdiction. The federal and state roads are mostly dual carriage ways capable of handling more traffic than the local roads (Federal Republic of Nigeria: 1973, p.28). However, an analysis based on the table above shows that the local governments are responsible for more than 66 per cent of all roads in Nigeria. The table also demonstrates the amount of resources available to these levels of government. The federal government has the ability to pave about 61 per cent of all roads under its jurisdiction, while the local governments could only pave 4.5 per cent of all their roads. This fact, coupled with the lengths of roads under each governments gives an indication of the road transportation responsibilities of the local governments. These, in effect, means that "the agency which is least able to construct and maintain roads in terms of funds and personnel, have the greatest responsibility" (Filani and Osayimwese: 1974, p.395).

The present structure of responsibilities, as shown above, is a sectoral one - with each government being responsible solely for the roads under its jurisdiction. This is illustrated in Matrix 1. Responsibility is not shared equitably among the different levels and joint responsibility is almost totally



absent. Where joint responsibility is present, work is done on agency basis. For example, the role of the state governments in road transportation is summarized as follows: "Nigeria's twelve states also have ministries concerned with road maintenance (including the maintenance of federal highways on an agency basis) and with the construction of some secondary roads" (World Bank: 1974, p.90).

MATRIX: 1

EXISTING STRUCTURE OF RESPONSIBILITY FOR ROADS IN NIGERIA

Responsible Govt. Type of Roads			
	Federal	State	Local
Trunk 'A'	*		
Trunk 'B'		*	
Local			*

In this structure, each government feels obligatory to maintain only certain categories of road - for instance, the federal government does not concern itself with local roads and local governments do not take any responsibility for federal or state roads. The local roads are therefore solely the responsibility of local governments.

Responsibility for road construction and maintenance continues to reside with the various Government Ministries of Works. Roads which are a Federal responsibility are termed Trunk 'A' roads, while State roads are indicated as Trunk 'B' roads. The former were essentially North-South routes linking the main seaports with their up-country hinterland and East-West routes connecting major urban centres, forming together the main national grid. A considerable length (16,000 kilometres) of Trunk 'B' roads has however recently become part of Federal responsibility by take-over. State and Local Governments between them are now responsible for about 67,000 kilometres of Trunk 'B' roads and Local roads which serve mainly as feeder or farm-to-market roads" (Federal Republic of Nigeria: 1974, p.203).

This lack of joint responsibility among governments for road transportation is partly responsible for "the generally poor standard of road construction at the local level, the sub-standard maintenance of most roads and occasional instances of excess maintainancy capacity" (Filani and Osayimwese: 1974, p.395). Joint responsibilities for all roads can help in coordinating the provision of road transportation in Nigeria. A proposal for making this possible is shown in Matrix 2. If this structure is adopted, a redistribution of available resources will be enhanced by making federal and state resources (in terms of funds and qualified man-power) available for rural road construction and maintenance. This structure can also enhance the coordination of policies at the federal level. Integrated road development can then be possible - i.e. the development of rural transportation can then be con-

MATRIX: 2SHARED RESPONSIBILITY FOR ROADS IN NIGERIA : A PROPOSAL

Responsible Govt.  Type of Roads			
	Federal	State	Local
Trunk 'A'	*		
Trunk 'B'	*	*	
Local	*	*	*

sidered as an integral part of the national transportation system.

The Transportation Needs of Rural Areas:

That rural transportation is not adequate in Nigeria has been mentioned in the previous section. Also one of the problems facing the agricultural sector is attributed to "the poor condition of feeder roads and other transport facilities in the rural areas" (Federal Republic of Nigeria: 1975, p.65). The improvement of farm-to-market or feeder roads is then an important segment in national development planning - especially in view of the fact that "the agricultural sector in Nigeria still accounts for more than 50 per cent of the Gross Domestic Product, and provides employment

for about 70 per cent of Nigeria's working population" (Federal Republic of Nigeria: 1973, p.9).

In order to formulate a viable strategy for rural transportation development, knowledge about the transportation needs of rural areas and their characteristics are essential. The acquisition of this knowledge is the objective of this section. It should be made clear that the discussion here is not exhaustive, by any means. The demand for transportation is so universal that it would make redundant any exhaustive enumeration of the various purposes for which it is needed. In the following paragraphs, however, an attempt has been made to point out some of the important rural transportation needs.

#### Marketing Agricultural Produce:

Easy accessibility to market is an important factor in rural development. Certainly, the first and foremost need of the farmer anywhere is to be able to market his produce at a place where he may secure a reasonable price for it - be it vegetable or animal products, or raw materials for industry. Good transportation network is necessary to make a sizeable market area available to the farmers. Food distribution will be encouraged if good transportation exists. The importance of good transportation network in agricultural production is adequately brought out by Owen:

Poor transport is a major factor in world hunger. The high cost of moving farm products and the long delays and consequent damage and loss to perishables have been powerful deterrents to increasing food supplies. Produce rots on the ground because transport is not available....The agricultural sector does not suffer simply from the accessibility of land, or from the failure to move what is produced. Farmers have no incentive to grow surpluses when they know from experience that what they grow cannot be moved. Isolated communities remain ignorant of market opportunities or of new ideas and new techniques, for information, like everything else, travels slowly on mud roads and primitive trails (Owen: 1964, p.5).

Apart from the impacts of poor transportation on agricultural production, it also impacts the location of industries (Owen: 1964, p.1). Industries continue to locate in urban areas because of the opportunities offered - good transportation links inclusive. Poor transportation can hamper the activities of an industry because the factory depends on continuing supplies of fuel, raw materials, spare parts, and a reliable means of marketing what is manufactured (Owen: 1964, p.3). Owen also demonstrated the inflationary effects of poor transportation in the following example:

In Afghanistan, half of all trade still moves on the backs of men, camels, and donkeys. Poor transport has increased the price of goods to as much as five times their original cost (Owen: 1964, p.3).

#### Socio-Political Transportation Needs:

Transportation difficulties, in the rural areas, have their

social and political as well as economic impacts. Poor transportation makes the task of national unity a difficult one. The "opening up and binding together of the nation" was one of the important objectives mentioned in the transport sector development in Nigeria (Federal Republic of Nigeria: 1975, p.199). If good transportation is available, the politicians can easily move from one part to the other.

Another problem that can be associated with lack of good transportation network in the rural areas is the slow movement of information and innovations (see Owen: 1964, p.5; also above). Information and innovations about agricultural improvements hardly reach many rural areas. The works of extension officers are made difficult because of the inaccessibility of many villages under their jurisdiction. Agricultural inputs like fertilizers usually arrive very late in the rural areas. There are many cases where fertilizers have arrived after the growing season (Owen: 1964, p.5). Improved transportation would increase mobility and the farmers, extension workers, and other innovation agents would be able to interact freely and easily.

#### Other Needs:

Apart from the above-mentioned inter-village or rural-urban transportation needs, there are a number of intra-village movements which are no less significant. P. C. Tripathi,

while writing about Rajasthan District in India, made the following observations which are relevant to situations in the rural areas of many developing countries. While writing about intra-village transportation needs, he stated:

...women carrying meals for the male members at the fields or the cart-loads or the head-loads of harvested crops being carried from the farms to the thrashing floors which are generally located near the dwelling houses or the village potter carting the soil from somewhere in the outskirts of the village to the spot where he makes earthenwares or the farmer carting the manure from dung heaps around 'Abadi' to his nearby fields are all a common sight in the rural areas (Tripathi: 1972, p.36).

This shows that good internal communication or transportation network is important for rural development - especially if the existing rural economy is to be enhanced.

In conclusion, the growth process of the rural areas can be retarded by limited opportunity for public officials to travel through these areas.

Poor transport can be a major obstacle to maintaining internal security. It also limits the effectiveness of technical assistance programs. In a world where one out of every three people is inadequately fed, the ability of modern transport to make available more food is perhaps its most significant contribution (Owen: 1964, pp.7-8).

Transportation development is therefore an important ingredient for rural development. Transportation, as a facilitative link among many sectors, influences the distribution of

the socio-economic and political institutions and thereby affects the country's development (Mahayni: 1977, pp.351-352).

#### Financing Rural Transportation:

Throughout this chapter, great emphasis has been placed on the improvement of rural road transportation. This proposal requires a substantial capital investment if it is to be effective. This brings about the question of whether any scarce resources should be devoted to the construction of rural road construction and maintenance and if so which sector has to be given lower priority. This necessity to select among alternative sectorial investments arises from the fact that "funds for investment are never unlimited" (Lansing: 1966, p.28). There is 'opportunity cost' in every investment. The opportunity cost of an investment is the cost of giving up alternative uses of the resources required. In transportation this is a common problem in intermodal allocations. This also has implications for transportation coordination (Filani and Osayimwese: 1974, p.390).

The relevant intermodal allocation problem in Nigeria is given, for example, a sum of ₦10 million for the transport sector, in what proportion should this amount be distributed among the modes for the purpose of improvements and/or extensions of the existing network? In effect, the choice problem of interest should be that at the margin. The required proportion may be determined by comparisons of economic



rates of return. The higher the economic rate of return on the resources to be used up in a modal project, the more favourable is the allocation to that mode....Such a calculation presupposes that social costs and benefits are correctly measured or measured with the same percentage error margin (Filani and Osayimwese: 1974, p.390).

In the provision of roads, however, it is difficult to compare the costs and benefits of investment. The costs of building and improving the road are usually borne by one party - the public authority administering the roads. The benefits are enjoyed by others, the automobile users - including those who use the road for private purposes and/or business. Some ideas of the return of a given outlay might be formed from the accounts of operators of the savings in time, fuel and vehicle maintenance, but these are direct, and immediate gains only. The final assessment of the worth of a road should also include an "estimate of the value to traders and travellers of quicker, easier and more comfortable passages" (Walker: 1959, p.124).

Equity matters further complicates the problem of inter-modal allocations in transportation. The national objective of improving the quality of life for all citizens makes equity considerations an important one (Federal Republic of Nigeria: 1975, p.291). A choice would then have to be made which affects a majority of the people.

If air transport is developed in Nigeria, it will continue to be available to no more than 10 per cent of the travelling population for a long time. Whereas road transport is the most predominant means of transport available to most classes of people in the country and this predominance will continue for some time. Equity matters arise when tax-payer's money is used to subsidize air transport for a small group. If the development of 14 airports embodied in the NACO Report is viewed as suggested in this paragraph, it would be difficult to justify the proposal on equity grounds (Filani and Osayimwese: 1974, p.390).

Equity considerations in Nigeria would encourage the development of rural road transportation for overall national development.

#### Intermodal Resource Allocations:

In view of problems outlined in this study, the Nigerian government should pay more attention to the improvement of the farm-to-market or rural roads. The Third National Development Plan of 1975-80, totally neglected rural transportation. All available resources were placed on developing urban transportation and a network of trunk roads - including some international highways. (For instance, see Federal Republic of Nigeria: 1975, pp.199-228). This strategy cannot help the rural areas as much as an investment in rural transportation. The significance of the present imbalance in transportation investment is brought out in the following statement:

The urban-rural allocation of transport expenditure is a matter of income distribution and equity. In Nigeria about twenty per cent of the population live in urban areas (defined as places with 20,000 people and above), while the remaining eighty per cent live in the rural countryside. Already, income distribution is skewed in favour of urban areas (this does not imply that intra-urban distribution is normal). Already there seems to have been a concentration of transport development on intra- and inter-city linkages and a relative neglect of rural transport. Reinforcing this pattern of transport development is likely to aggravate the growing income inequality between rural households and urban dwellers (Filani and Osayimwese: 1974, p.392).

A logical conclusion from all these is more emphasis on rural road transportation. This can be done by readjusting the road transport allocation of resources in favour of rural roads. The number of airports to be built can be reduced and their funds directed to rural transportation development. The licensing fees of vehicles and foreign assistance are also major sources of income for developing rural transportation.

Since all roads can not be developed at the same time - more so in the large rural area included in Nigeria, it will be necessary to phase developments. Target areas can be identified for priority attention based on need, population and other national objectives.

#### Transport Coordination:

The basic aim of coordination is the identification and

understanding of the interrelationships of all the different sectors of an economy - i.e. of a system. No one sector of an economy is totally independent of other sectors. Transportation, for example, is dependent on other economic sectors as they in turn depend on it (Owen: 1964, p.74). For a balanced national development, it will be necessary to coordinate and integrate the various sectors - i.e. be they economic, social, cultural or political. To achieve this type of development, a fairly centralized decision-making structure is essential for coordination, planning and development, even though such institutions have been criticized as bureaucratic, slow and too detached from the problems (Mahayni: 1977, p.355). For the purpose of this study, three types of coordination will be identified for transportation planning: coordination with other sectors; coordination between different levels of government; and coordination between transportation modes.

a) Transport Coordination with Other Sectors:

Many problems can be identified in determining the need for transportation. One of the major ones is the fact that decisions made outside transportation sectors can significantly affect the nature of transportation problems and influence the type of strategies to be adopted for their solution (Owen: 1964, p.74). This fact then calls for the coordination of transportation strategies and policies with

those of other sectors as pointed out by Wilfred Owen when he wrote:

Transport needs are created by what takes place outside the transport field, and ways to meet these needs may also be found in other sectors. The selection of economic activities, the location of industries, the processing and storage of perishables, the generation and transmission of power, and the establishment of communications - all these and many other aspects of development have a vital role in determining the nature and level of transport investment. To look at the transport system alone is to approach the problem with blinders (Owen: 1964, p.74).

Coordination between transportation planning and planning for other sectors is made difficult by division of responsibilities among government ministries and agencies in many nations of the world. Planning is carried out sectorally rather than comprehensively. For example in the developing countries, highway planners usually are unaware of the development policies or strategies of the Ministry of Agriculture or the Ministry of Trade and Industry. The customary approach of transportation planners is to "estimate transport needs of other sectors on the basis of what may happen rather than on what is being planned to happen" (Mahayni: 1977, p.355). The coordination between different sectors is currently the responsibility of the Ministry of Economic Development in Nigeria but its work has not been adequate as misinvestment of scarce national resources still occurs (Federal Republic of Nigeria: 1975, p.199). Responsibility for intersectoral

coordination can be adequately handled by a Ministry of Town and Country Planning, if adequate resources are made available - including manpower and capital.

Transportation coordination with other sectors reduces the potential needs for transportation facilities through the substitution of other methods. This is very important in the developing countries where capital and skilled manpower are not available to provide most of the transportation needs of the people. An example of such substitution can be demonstrated in the agricultural sector. The development of a technique for preserving perishable agricultural products can stretch the capabilities of transportation facilities and reduce the traffic pressure associated with peak flow seasons. As technology develops and is applied, more techniques will be available for minimizing the potential transportation needs of the people if adequate intersectoral coordination is practised.

b) Transportation Coordination Between Government Levels:

Transportation regulations, in different levels of government, vary in requirements and scope. This variation is apt to create confusion since roads are connected to one another for continuity. A road is a continuous facility linking origin to destination, so far as a user is concerned - no matter which government, or group of governments make policies regarding the

construction, operation, and maintenance of the different segments of the road. The confusion which exists in road provision in Nigeria is manifested in roads linking two geographic points under different jurisdictions - e.g. a road linking two states but not designated a federal road (Trunk 'A'). Different regulations govern each part of the road, and as a result, it is not uncommon to be travelling on a two-lane, tarred road which suddenly turns into a one-lane, gravel road without any warning signs.

Even within state boundaries, the situation mentioned above can be seen when a state road suddenly becomes a local road or two, or more, local governments manage different segments of a road. The result of the lack of coordination is shown by the number of motor accidents which occur at these points of transition (Iyehen: in *Economics*, July 1976, pp. 37-38). This confusion is not apparent in other modes of transportation, i.e. rail, air or water, since these are under the jurisdiction of national bodies. If the same strategy of centralized responsibility is adopted for roads, it will be more beneficial to the country as a whole - i.e. the provision of roads in Nigeria ought to be under the jurisdiction of a national road agency whose major role should be coordination of different roads. Capital resource allocation to this agency may be partly derived from the current road transportation subsidies to the state and local governments from the federal government.

c) Coordination Among Transportation Modes:

Coordination among transportation modes involves either a substitution of services supplied by one mode for the services offered by another or a division of the transportation market among available modes. To do any of these, the performance of each transportation mode has to be identified and then relative importance evaluated. This is usually not the case in developing countries where each mode is considered by itself - i.e. in isolation from the others. Projects are evaluated on their own merits, their consequences not being related to other parts of the transportation system. The division of transportation responsibilities between the Ministry of Transport and the Ministry of Works and Housing is a classic example of the unrelated approach which has been adopted in Nigeria (see Chapter III for detail).

Another reason why coordination is needed between modes is to avoid duplication of services and unnecessary competition between modes. The development of road transportation, especially the north-south axes, follow the rail lines (see Map 4). This is similar to what has happened in many developing countries and the Colombian case is an interesting example:

Despite these enormous investments in transport, there are glaring deficiencies and confusion in the operations today. Railroads, highways, and inland waterways duplicate one another and compete for traffic; yet all are being improved simultaneously. A new Atlantic port is being constructed,



while two other nearby ports handle insufficient cargo. Certain regional demands for transport are now met with surplus capacity, while others suffer from shortages of specific types of service. It now appears that in one decade Colombia has moved from a position of too little emphasis on transport to too much.... (Weisskoff, in Haefele (ed.): 1969, p.123).

In order to deal with the lack of intermodal coordination which exists in the Nigerian Ministry of Transport, a re-organized structure is proposed for that ministry. The new structure is based on economic functions rather than types of mode. It is hoped that each department will give attention to the necessary economic, social, political and environmental consideration for its policy recommendations. This structure would enhance better project planning and the various modes of transportation can be looked at simultaneously in terms of investment, pricing, and control. For this proposal to be effective, it is necessary that roads be brought under the jurisdiction of the Ministry of Transport.

### Conclusion:

In this chapter, efforts have been made to point out the need for reorientation of transportation strategy in Nigeria. Transportation plays a central role in every country. As a facilitative factor, it affects the size and distribution of settlements and their social, economic, and political institutions. Rural transportation can thus be used, among a host of

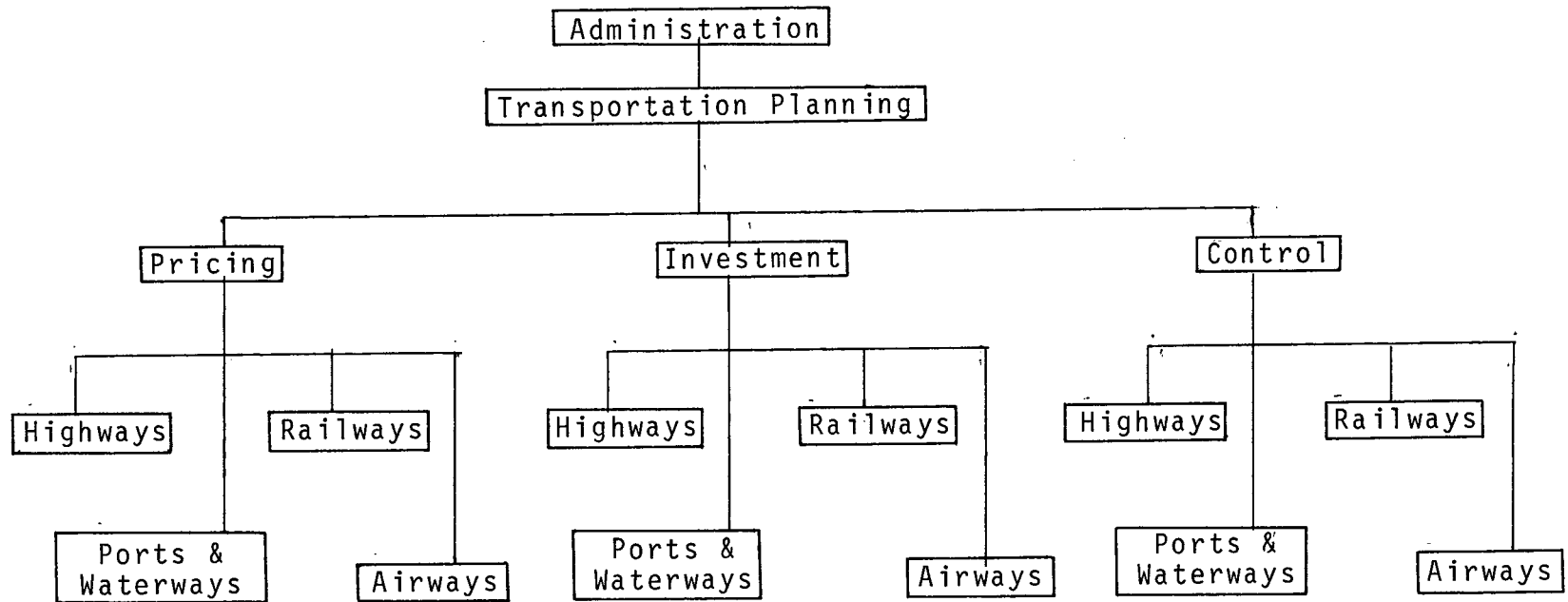


FIGURE 3

PROPOSED ORGANIZATIONAL STRUCTURE FOR THE  
FEDERAL MINISTRY OF TRANSPORT, NIGERIA.

other variables, at the national level for furthering development in the rural areas. This is not to say that transportation is the key to rural development, but that it is important with other factors given adequate coordination. Two major reasons for encouraging the development of rural transportation have been touched upon. The first is the need for allocating transportation investments so as to increase the accessibility of market centres. The second is the need to allocate investments so as to improve communication among different settlements and thus reduce the urban-rural transport dichotomy. A reorientation from the customary emphasis on primary transportation networks to local roads is suggested in this chapter.

## CHAPTER V

### CONCLUSIONS

In this study, emphasis has been placed on the importance of rural transportation in regional development in Nigeria. Since accessibility and mobility are involved in almost every aspect of development, transportation can be a key factor in the success or failure of the entire national development efforts (Owen: 1964, p.vii). The importance of transportation in developing countries has been demonstrated in this study and is supported by Andrew Kamarck who stated that the "World Bank Group learned very early in its life that bettering the standard of living in a developing country very often begins with bettering its transport system", and also that "in all countries the transport system is central in any development effort" (Adler: 1967, p.ix). The emphasis of the study is therefore justified, especially for rural development.

It is not the suggestion here that the development of rural transportation is the only key to regional progress in Nigeria. Transportation is not an isolated phenomenon in development - "its impact is enhanced by the interaction of a variety of other economic stimuli whose magnitude can not be predicted with great certainty" (Kraft, et al.: 1971, p.1). There is therefore a need to coordinate transportation with other development agents and this aspect has been discussed

in the study. This coordination is very important because of the nature of transportation:

Transportation plays a many-faceted role in the pursuit of development objectives. Its function as a factor input requirement is obvious - it enables goods and passengers to be transferred between and within production and consumption centers" (Fromm: 1965, p.5).

The transportation problems of Nigeria, most of which has been discussed, are recognized by the government but the strategies it has adopted have not been adequate. For instance: "it is generally recognized that development impulses generated in the fast growing industrial cities do not reach the areas far away. In order, therefore, to ensure a fairly even geographic distribution of the benefits of urban-based industrialization, Government will improve and extend transport and communication links not only between one community and another, but between the rural areas and their urban nuclei" (Federal Republic of Nigeria: 1970, p.218). While the federal government knows the problems and has the objective of solving them, it made no capital allocations to rural road development (see Federal Republic of Nigeria: 1974, pp.202-208), even though about ₦ 4356 million (approximately \$6534 million) is to be spent on road developments in the country.

### Organization and Coordination:

Implicit in all the suggested reorientations, in this study, is the adoption of a transportation planning process and the institutionalization of the necessary organizational linkages at the federal, state and local levels. The suggested line of action is in contrast to the fragmented project approach. Transportation should be a coordinated factor with continuous monitoring for the benefit of the whole nation. As noted in Chapter IV, attention should be given to three kinds of coordination: coordination with other sectors; coordination between government levels; and coordination among modes. In view of these, the first action of the federal government should be the transfer of all transportation responsibilities, regarding policy formulation, to the Federal Ministry of Transport. Such a transfer would facilitate decision regarding investment allocations between modes.

A related error in allocation of investment across modes is failure to exploit the potential advantage of coordination of different modes. This error is most easily made when there is an atmosphere of hostility between modes, say between rail and trucks, or rail and water transport agencies. It is possible to use trucks to handle pickup and delivery service for rail.... (Lansing: 1966, p.158).

In order to facilitate intermodal coordination and to reduce 'hostility' among modes in Nigeria, a reorganization of the existing structure of the Federal Ministry of Transport is suggested in Chapter IV (see Figure 3).

### National Road Transportation Agency:

Although transportation policies, in many cases, are formulated at the centre, plan or policy implementation will continue to be local. Plan formulation is dependent on transportation needs as projected at all governmental levels and plan implementation is dependent on national transportation policies and guidelines (Mahayni: 1977, p.364). For a successful and effective transportation program therefore, co-ordination is necessary between all levels of government in the country. A central body is needed to coordinate such governmental activities. A suggestion is made in this study for the creation of a central body for road transportation in Nigeria. This body may be called the National Road Transportation Agency (NRTA). This will be similar to what operates in rail, air and water transportation - each of these modes is placed under a federal corporation for policy implementation. Inter-governmental coordination problems are thereby virtually eliminated. The institutionalization of such central body for road development is paramount in Nigeria.

While the federal government will still be responsible for intermodal and intersectoral coordinations and policy formulations, the NRTA is needed to coordinate the implementation of road transportation policies and to recommend appropriate strategies for road development. The NRTA will pay particular attention to rural road development - thereby re-

ducing the existing urban-rural transportation dichotomy. The NRTA will not be under any one level of government, as is the situation with the existing federal corporations, its operational resources will be contributed by the different governmental levels based on the proposed concept of shared responsibility (see Chapter IV). The magnitude of influence, but not authority, that can be exercised by any level of government will partly depend on the amount of resources contributed for road policy implementation. This should not be construed to mean that the lower levels of government would have no say in decision-making, because of their relatively small contributions, but rather that they contribute valuable inputs to decision-making. All governmental levels would now have to submit road development proposals to the NRTA for coordination and approval.

#### Shared Responsibility:

The concept of shared responsibility, proposed earlier, calls for more intensive federal participation in all types of road construction and maintenance - especially through resource allocation to rural road development. The federal government has the highest ability to finance road construction in the country, in terms of available resources. If less emphasis is placed on the construction of prestigious trunk roads (highways) and airports, some resources can be diverted to the development of the much needed feeder or farm-to-market



roads. The adoption of this suggestion will enhance the integration of the rural economy to the national economy. Economic integration has not only a purely economic dimension but also social and political dimensions reflected in the multiplicity of goals inherent in every development plan (Mahayni: 1977, p.362). With adequate integration, the long-neglected rural settlements will be able to enjoy the benefits of development.

The share of responsibility matrix proposed by Kampmann Kierulff and Saxild A/S (KAMPSAX) of Copenhagen in their report "Highway Survey in Nigeria 1967: Trunk Road Study" will be appropriate here. The report suggested the matrix shown below as a possibility in Nigeria.

### MATRIX 3

#### LEVELS OF RESPONSIBILITIES BY GOVERNMENTS IN ROAD TRANSPORTATION IN NIGERIA

% Responsibility Roads Designated as			
	Federal	State	Local
Federal	90	10	-
State	50	50	-
Local	33.3	33.3	33.4

Source: Filani, M.O. and Osayimwese, Iz: "The Organization of transport Planning in Nigeria", The Nigerian Journal of Economic and Social Studies, Vol. 16, No.3, 1974.

The matrix above totally reverses the existing structure and redistributes responsibilities to a level commensurate with each government's financial and technological ability.

### Appropriate Technology:

Appropriate technology here concerns the establishment of road standards for different purposes. The emphasis here is not with construction, per se, but the type of roads to be constructed. There is now a range of technology that is available to the developing countries and they can choose according to available resources in the country - in terms of capital, qualified manpower, and even political philosophy coupled with social and environmental factors. Highly capital intensive highways can be constructed, if desired, to break away from "the slow evolutionary process of transportation improvement and to reduce time and resources needed to overcome the time-space barrier" (Owen: 1964, p.86). Or lower order roads can be constructed and improved as traffic demand increases. A few guidelines have been suggested by various authors, to help the developing countries in choosing appropriate transportation technology for their particular country (for example, see Owen: 1964, pp.87-89; and Olatunbosun: 1975, pp.150-151).

In their search for appropriate transportation level; the developing nations should be guided by the very nature of the problems within their national boundaries. Most of these

nations are characterized by scarce capital resources and highly unskilled labour force. The adoption of a capital intensive technology may not be in their best interests. The rural areas of these countries require priority attention and a transportation system which is compatible with rural activities will be more appropriate.

For rural development and the success of rural diversification, Nigeria needs to develop appropriate transportation network which is conducive to the most efficient use of the existing resource endowment in the rural sector. The urban areas may find it more convenient, and even profitable, to adopt advanced standards - i.e. high capacity roads, but the rural areas may not be able to cope. The adoption of such standards for rural areas will be a waste of national scarce resources. The available resources in the rural areas are not compatible with most modern, advanced technologies. The short, widely dispersed, and light traffic characteristics of the rural areas call for the development of many lower order roads rather than one or two highways, or airports (Tripathi: 1972, pp.37-43).

In rural road development, the improvement of existing local roads, and the construction of new ones where non previously existed, to a standard whereby they cannot be washed away by heavy rainfall should be focussed upon - i.e. make the rural areas accessible all year round. It can safely be said

that a three- or four-lane highway is rarely the desire of the rural population and, as has been pointed out above, to develop such for rural linkages would only amount to wasting scarce national resources, especially capital. A one- or two-lane road, with good surfacing and proper safety signs, is definitely more appropriate to local conditions.

Roads should be designed according to the characteristics of the traffic to be carried. Therefore, the types of vehicles which ply the local roads of Nigeria should influence the type of roads to be constructed for rural development. In Nigeria, the vehicles that serve the rural populace are lorries and mammy-wagons. These serve the dual purpose of transporting both people and goods. Most of these vehicles rarely attain a speed in excess of 50 miles per hour (i.e. 80 kilometres per hour) mainly due to overloading. In fact the average speed is more like 35 miles per hour (56 kilometres per hour). Therefore, the vehicles are usually slow and heavy. In view of these, rural roads should be designed to handle this type of traffic.

Financially, a good strategy for lowering government's rural road expenditure is to encourage the rural communities to build roads under constant governmental supervision and help. This will call for a technology which is not capital intensive. Appropriate technology which will facilitate the use of local materials will have to be encouraged. The govern-

ment may agree to provide the bridges and culverts, and also see that the roads are built to a desirable standard.

### Research Implications:

Research is needed in many developmental aspects of Nigeria. The lack of statistics which was noted in Chapter I makes research an important factor in many developing countries, including Nigeria. Research into many aspects of development will help data generation. In the transport sector, the provision of transport infrastructure is not always advantageous to the less developed regions. The lower cost of moving goods and people may make "the development of remote areas more feasible, but on the other hand, the greater mobility of labour may attract more people from remote areas to established centres" (Prest: 1969, p.34). Research into the effects of improving rural transportation should be emphasized.

Secondly, since developmental resources are very limited, target areas will have to be identified for priority attention. The criteria to be used in identifying target areas have to be developed. These criteria will help in identifying areas where transportation is most needed and this has implications for using national resources to the best advantage. "As with other means of transport the benefits of road building will be greatest where problems of inadequate communications are clearly hindering development" (O'Connor: 1971, p.149). Once these

target areas have been established, the best transportation strategy for each will have to be developed.

#### Rural Transport Priority:

This study has pointed out the need for a reorientation of transportation planning rationale in Nigeria. The current emphasis on urban and inter-urban networks is reduced in favour of a rural network of roads. It is now time for Nigeria to pay more attention to rural transportation development in the process of national development. Transportation, like other sectors, has been neglected in the rural areas.

The most dominant and common features of developing economies, including Nigeria, are rural poverty, unemployment and inequality. The transformation of these handicaps at the base holds the key to any meaningful programme of development to achieve social justice. The greatest and most serious gap between precept and practice in the developing countries has been in the areas of rural development. Political rhetoric is hardly matched by economic performance in the rural sector" (Olatunbosun: 1975, p.160)..

More emphasis should therefore be placed on rural development in Nigeria. It then follows that rural transportation development should be a priority in view of the role of transportation in development.

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